Quantifying the influence of ground motion duration on structural collapse capacity using spectrally equivalent records

Digital Appendix

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Contents

1 Overview

This document provides detailed information about the spectrally equivalent long and short duration record sets used in Chandramohan et al. 2016. The long duration set consists of 73 horizontal record pairs (146 individual records), with the 5-75% significant duration (Ds_{5-75}) of at least one component of each record pair being greater than 25 s. For each individual record in the long duration set, there exists a companion short duration record, with a closely matching response spectral shape and Ds_{5-75} lesser than 25 s, in the spectrally equivalent short duration set. The reader is referred to the original paper for details regarding the procedure employed for record selection.

All records obtained from sources other than the PEER NGA-West2 database Ancheta et al. 2013 were baseline corrected and filtered using the recommendations of Boore and Bommer 2005. First, the mean of the pre-event portion of the accelerogram was subtracted from the whole accelerogram to remove any offset in the baseline. If no pre-event portion was detected, the mean of the entire accelerogram was subtracted. The accelerogram was then tapered using a Tukey window of taper ratio 0.05, zero-padded as per the recommendations of Boore 2005, and filtered using an acausal, 4th order, band-pass Butterworth filter. The high-cut frequency was chosen to be slightly smaller than the Nyquist frequency, while the low-cut frequency was chosen by visual inspection of the Fourier amplitude spectra of the accelerograms and the filtered velocity and displacement time histories. A low-cut frequency of 0.10 Hz was found to be adequate for processing all records, except those from the 1985 Michoacan and 2011 Tohoku earthquakes, for which a low-cut frequency of 0.12 Hz was used.

Sections 2 and 3 list the records in the long and short duration sets respectively, and provide relevant metadata. The sources of the records are indicated in footnotes at the end of each table. Section 4 plots the geometric mean response spectra of all the records in the two sets. The closely overlapping curves confirm the spectral equivalence of the two record sets. Section 5 plots the response spectra and time histories of each of the 146 spectrally equivalent record pairs. Long duration records are plotted in blue and short duration records in red.

2 Records in the long duration set

Record #	Earthquake	Station name	Filename	Ds_{5-75} (s)
1 2	1974 Lima, Peru[1]	Arequipa	Arequipa_H1.th Arequipa_H2.th	35 33
3 4	1974 Lima, Peru[1]	Las Gardenias	Las_Gardenias_L.th Las_Gardenias_T.th	33 33
5 6	1985 Valparaiso, Chile[2]	Llolleo	LLOLLEO10.th LLOLLEO100.th	28 26
7 8	1985 Valparaiso, Chile[2]	San Isidro	SANISIDROL.th SANISIDROT.th	30 24
9 10	1985 Valparaiso, Chile[2]	Valparaiso El Almendral	VALPARAISOELALMENDRAL140.th VALPARAISOELALMENDRAL50.th	37 31
11 12	1985 Valparaiso, Chile[2]	Vina Del Mar	VINADELMAR200.th VINADELMAR290.th	32 32
13 14	1985 Michoacan, Mexico[3]	Infiernillo Media Cortina	IN128509191_H1.th IN128509191_H2.th	27 27
15 16	1985 Michoacan, Mexico[3]	Villita Corona Centro	VILC8509191_H1.th VILC8509191_H2.th	33 34
17 18	1985 Michoacan, Mexico[3]	Villita Margen Derecha	VILE8509191_H1.th VILE8509191_H2.th	31 32
19 20	1985 Michoacan, Mexico[3]	Zacatula	ZACA8509191_H1.th ZACA8509191_H2.th	34 32
21 22	1992 Landers[4]	Indio - Coachella Canal	LANDERS/IND000.AT2 LANDERS/IND090.AT2	25 25
23 24	1992 Landers[4]	Indio - Jackson Road	LANDERS/INJ090.AT2 LANDERS/INJ180.AT2	22 26
25 26	1992 Landers[4]	Thousand Palms Post Office	LANDERS/TPP045.AT2 LANDERS/TPP135.AT2	26 25
27 28	1999 Kocaeli, Turkey[4]	Bursa Tofas	KOCAELI/BUR000.AT2 KOCAELI/BUR090.AT2	26 22

Record #	Earthquake	Station name	Filename	Ds_{5-75} (s)
29 30	1999 Kocaeli, Turkey[4]	Fatih	KOCAELI/FAT000.AT2 KOCAELI/FAT090.AT2	10 28
31 32	2003 Hokkaido, Japan[5]	Shihoro	HKD0940309260450_H1.th HKD0940309260450_H2.th	21 27
33 34	2003 Hokkaido, Japan[5]	Obihiro	HKD0950309260450_H1.th HKD0950309260450_H2.th	20 28
35 36	2003 Hokkaido, Japan[5]	Oiwake	HKD1270309260450_H1.th HKD1270309260450_H2.th	24 26
37 38	2003 Hokkaido, Japan[5]	Hayakita	HKD1280309260450_H1.th HKD1280309260450_H2.th	28 25
39 40	2003 Hokkaido, Japan[5]	Chitose	HKD1840309260450_H1.th HKD1840309260450_H2.th	32 35
41 42	2003 Hokkaido, Japan[5]	Kuriyama	SRCH090309260450_H1.th SRCH090309260450_H2.th	29 21
43 44	2008 Wenchuan, China[4]	Deyangbaima	WENCHUAN/UA0775.AT2 WENCHUAN/UA0777.AT2	38 36
45 46	2008 Wenchuan, China[4]	Lixianmuka	WENCHUAN/UA0835.AT2 WENCHUAN/UA0836.AT2	25 34
47 48	2008 Wenchuan, China[4]	Lixiantaoping	WENCHUAN/UA0841.AT2 WENCHUAN/UA0842.AT2	34 36
49 50	2008 Wenchuan, China[4]	Maoxiandiexi	WENCHUAN/UA0853.AT2 WENCHUAN/UA0854.AT2	36 35
51 52	2008 Wenchuan, China[4]	Maoxiannanxin	WENCHUAN/UA0856.AT2 WENCHUAN/UA0857.AT2	25 26
53 54	2008 Wenchuan, China[4]	Dayiyinping	WENCHUAN/UA0920.AT2 WENCHUAN/UA0921.AT2	60 47
55 56	2008 Wenchuan, China[4]	Qionglaiyouzha	WENCHUAN/UA0923.AT2 WENCHUAN/UA0924.AT2	47 54
57 58	2008 Wenchuan, China[4]	Cangxiqixiangju	WENCHUAN/UA1030.AT2 WENCHUAN/UA1031.AT2	43 44
59 60	2008 Wenchuan, China[4]	Hongyatai	WENCHUAN/UA1039.AT2 WENCHUAN/UA1040.AT2	36 39

Record #	Earthquake	Station name	Filename	Ds_{5-75} (s)
61 62	2008 Wenchuan, China[4]	Jiangyoudizhentai	WENCHUAN/UA1048.AT2 WENCHUAN/UA1049.AT2	29 25
63 64	2008 Wenchuan, China[4]	Guangyuanshijing	WENCHUAN/UA1072.AT2 WENCHUAN/UA1073.AT2	25 30
65 66	2008 Wenchuan, China[4]	Anxiantashui	WENCHUAN/UA1081.AT2 WENCHUAN/UA1082.AT2	28 27
67 68	2008 Wenchuan, China[4]	Pujiangdaxing	WENCHUAN/UA1099.AT2 WENCHUAN/UA1100.AT2	56 47
69 70	2008 Wenchuan, China[4]	Pujiangwuxing	WENCHUAN/UA1102.AT2 WENCHUAN/UA1103.AT2	60 63
71 72	2008 Wenchuan, China[4]	Pingwumuzuo	WENCHUAN/UA1148.AT2 WENCHUAN/UA1149.AT2	35 33
73 74	2008 Wenchuan, China[4]	Wenchuanwolong	WENCHUAN/UA1153.AT2 WENCHUAN/UA1154.AT2	22 27
75 76	2010 Maule, Chile[2]	Angol	ANGOLEW.th ANGOLNS.th	30 23
77 78	2010 Maule, Chile[2]	Cerro Santa Lucia	CERROSANTALUCIA360.th CERROSANTALUCIA90.th	30 25
79 80	2010 Maule, Chile[2]	Concepcion San Pedro	CONCEPCIONSANPEDRO7.th CONCEPCIONSANPEDRO97.th	36 32
81 82	2010 Maule, Chile[2]	Constitucion	CONSTITUCIONL.th CONSTITUCIONT.th	32 32
83 84	2010 Maule, Chile[2]	Curico	CURICOEW.th CURICONS.th	38 37
85 86	2010 Maule, Chile[2]	Hualane	HUALANEL.th HUALANET.th	34 34
87 88	2010 Maule, Chile[2]	Santiago La Florida	STGOLAFLORIDAEW.th STGOLAFLORIDANS.th	28 26
89 90	2010 Maule, Chile[2]	Talca	TALCAL.th TALCAT.th	51 52
91 92	2010 El Mayor-Cucapah[4]	Chihuahua	SIERRA.MEX/CHI000.AT2 SIERRA.MEX/CHI090.AT2	24 27

Record #	Earthquake	Station name	Filename	Ds_{5-75} (s)
93 94	2010 El Mayor-Cucapah[4]	Ejido Saltillo	SIERRA.MEX/SAL000.AT2 SIERRA.MEX/SAL090.AT2	33 33
95 96	2010 El Mayor-Cucapah[4]	Tamaulipas	SIERRA.MEX/TAM000.AT2 SIERRA.MEX/TAM090.AT2	27 28
97 98	2011 Tohoku, Japan[5]	Yanagawa	FKS0021103111446_H1.th FKS0021103111446_H2.th	74 71
99 100	2011 Tohoku, Japan[5]	Fukushima	FKS0031103111446_H1.th FKS0031103111446_H2.th	77 76
101 102	2011 Tohoku, Japan[5]	Iitate	FKS0041103111446_H1.th FKS0041103111446_H2.th	76 78
103 104	2011 Tohoku, Japan[5]	Kohriyama	FKS0181103111446_H1.th FKS0181103111446_H2.th	70 67
105 106	2011 Tohoku, Japan[5]	Nihommatsu	FKS0191103111446_H1.th FKS0191103111446_H2.th	76 74
107 108	2011 Tohoku, Japan[5]	Inawashiro	FKS0201103111446_H1.th FKS0201103111446_H2.th	80 80
109 110	2011 Tohoku, Japan[5]	Aiduwakamatsu	FKS0231103111446_H1.th FKS0231103111446_H2.th	57 69
111 112	2011 Tohoku, Japan[5]	Fukushima	FKSH161103111446_H1.th FKSH161103111446_H2.th	77 77
113 114	2011 Tohoku, Japan[5]	Kawamata	FKSH171103111446_H1.th FKSH171103111446_H2.th	81 85
115 116	2011 Tohoku, Japan[5]	Miharu	FKSH181103111446_H1.th FKSH181103111446_H2.th	79 76
117 118	2011 Tohoku, Japan[5]	Miyakoji	FKSH191103111446_H1.th FKSH191103111446_H2.th	68 71
119 120	2011 Tohoku, Japan[5]	Naruko	MYG0051103111446_H1.th MYG0051103111446_H2.th	71 71
121 122	2011 Tohoku, Japan[5]	Sakunami	MYG0141103111446_H1.th MYG0141103111446_H2.th	75 67

Record #	Earthquake	Station name	Filename	Ds_{5-75} (s)
123 124	2011 Tohoku, Japan[5]	Iwanuma	MYG0151103111446_H1.th MYG0151103111446_H2.th	80 70
125 126	2011 Tohoku, Japan[5]	Shiroishi	MYG0161103111446_H1.th MYG0161103111446_H2.th	77 68
127 128	2011 Tohoku, Japan[5]	Kakuda	MYG0171103111446_H1.th MYG0171103111446_H2.th	69 71
129 130	2011 Tohoku, Japan[5]	Iwanuma	MYGH081103111446_H1.th MYGH081103111446_H2.th	70 66
131 132	2011 Tohoku, Japan[5]	Shiroishi	MYGH091103111446_H1.th MYGH091103111446_H2.th	70 70
133 134	2011 Tohoku, Japan[5]	Higashine	YMT0071103111446_H1.th YMT0071103111446_H2.th	73 69
135 136	2011 Tohoku, Japan[5]	Kaminoyama	YMT0111103111446_H1.th YMT0111103111446_H2.th	86 81
137 138	2011 Tohoku, Japan[5]	Yonezawa	YMT0151103111446_H1.th YMT0151103111446_H2.th	78 75
139 140	2011 Tohoku, Japan[5]	Tendou	YMTH011103111446_H1.th YMTH011103111446_H2.th	71 64
141 142	2011 Tohoku, Japan[5]	Yamagata	YMTH021103111446_H1.th YMTH021103111446_H2.th	79 85
143 144	2011 Tohoku, Japan[5]	Takahata	YMTH061103111446_H1.th YMTH061103111446_H2.th	82 80
145 146	2011 Tohoku, Japan[5]	Yonezawa	YMTH071103111446_H1.th YMTH071103111446_H2.th	65 70

[1]Source: Instituto Geofisico del Peru, via the Center for Engineering Strong Motion Data (http://www.strongmotioncenter.org/)
[2]Source: Departamento de Geofisica, Universidad de Chile, via the Center for Engineering Strong Motion Data (http://www.strongmotioncenter.org/)
[3]Source: Comite de la Base Nacional de Datos de Sismos Fuertes, Mexico
[4]Source: PEER NGA-West2 database Ancheta et al. 2013 (http://peer.berkeley.edu/ngawest2/databases/)
[5]Source: National Research Institute for Earth Science and Disaster Prevention (NIED), Japan (http://www.kyoshin.bosai.go.jp/)

3 Records in the spectrally equivalent, short duration set[6]

Record #	Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1	1999 Chi-Chi, Taiwan-05	CHY087	CHICHI.05/CHY087E.AT2	1.87	7
2	2004 Parkfield-02, CA	Parkfield - Vineyard Cany 4W	PARK2004/VC4360.AT2	1.83	4
3	1986 N. Palm Springs	Fun Valley	PALMSPR/FVR135.AT2	2.11	6
4	2009 L'Aquila (aftershock 2), Italy	L'Aquila - V. Aterno -Colle Grilli	L-AQUILA.B/FA237YLN.AT2	3.62	3
5	1994 Northridge-01	Sun Valley - Roscoe Blvd	NORTHR/RO3000.AT2	1.82	6
6	1980 Livermore-02	San Ramon - Eastman Kodak	LIVERMOR/B-KOD180.AT2	1.84	1
7	2011 Christchurch, New Zealand	SWNC	CCHURCH/SWNCN66W.AT2	3.55	2
8	1994 Northridge-06	Jensen Filter Plant Generator Building	NORTH392/JGB292.AT2	3.31	1
9	1986 Chalfant Valley-02	Zack Brothers Ranch	CHALFANT.A/A-ZAK360.AT2	0.47	3
10	1992 Cape Mendocino	Rio Dell Overpass - FF	CAPEMEND/RDL270.AT2	0.90	4
11	2004 Parkfield-02, CA	Slack Canyon	PARK2004/SCN360.AT2	0.90	2
12	2008 Iwate	Miyagino-ku, Sendai Olympics	IWATE/4E061EW.AT2	1.94	6
13	2010 Darfield, New Zealand	Heathcote Valley Primary School	DARFIELD/HVSCS64E.AT2	0.82	8
14	1987 Whittier Narrows-01	Sun Valley - Roscoe Blvd	WHITTIER.A/A-RO3090.AT2	1.59	3
15	1994 Northridge-01	Manhattan Beach - Manhattan	NORTHR/MAN000.AT2	1.64	9
16	1986 Chalfant Valley-02	Benton	CHALFANT.A/A-BEN360.AT2	3.38	6
17	1992 Cape Mendocino	Fortuna Fire Station	CAPEMEND/FFT270.AT2	0.29	4
18	2008 Iwate	MYGH09	IWATE/MYGH09NS.AT2	2.76	16
19	1994 Northridge-01	Vasquez Rocks Park	NORTHR/VAS090.AT2	1.46	4
20	1952 Kern County	Taft Lincoln School	KERN/TAF021.AT2	1.74	11
21	1989 Loma Prieta	SF - Presidio	LOMAP/PRS090.AT2	0.57	3

Record #	Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
22	1999 Chi-Chi, Taiwan-06	CHY100	CHICHI.06/CHY100W.AT2	1.62	12
23	1992 Cape Mendocino	Petrolia	CAPEMEND/PET090.AT2	0.47	3
24	1994 Northridge-01	Camarillo	NORTHR/CMR180.AT2	1.04	14
25	1999 Chi-Chi, Taiwan-06	CHY024	CHICHI.06/CHY024E.AT2	0.77	10
26	1986 Taiwan SMART1(45)	SMART1 I11	SMART1.45/45I11EW.AT2	0.75	11
27	1999 Chi-Chi, Taiwan-04	KAU085	CHICHI.04/KAU085W.AT2	4.41	20
28	1992 Landers	Yermo Fire Station	LANDERS/YER270.AT2	0.54	7
29	1999 Chi-Chi, Taiwan-06	HWA025	CHICHI.06/HWA025N.AT2	5.00	3
30	1999 Chi-Chi, Taiwan-02	HWA059	CHICHI.02/HWA059E.AT2	4.74	8
31	1979 Imperial Valley-06	Holtville Post Office	IMPVALL.H/H-HVP315.AT2	0.53	5
32	1992 Landers	LA - S Grand Ave	LANDERS/GR2180.AT2	2.51	20
33	1999 Chi-Chi, Taiwan-06	CHY032	CHICHI.06/CHY032E.AT2	2.38	21
34	1979 Imperial Valley-06	El Centro Array #6	IMPVALL.H/H-E06230.AT2	0.47	4
35	1999 Hector Mine	Mill Creek Ranger Station	HECTOR/MCR270.AT2	2.46	15
36	1999 Chi-Chi, Taiwan	TCU049	CHICHI/TCU049-E.AT2	0.46	18
37	1999 Chi-Chi, Taiwan	TTN026	CHICHI/TTN026-N.AT2	4.32	21
38	2010 El Mayor-Cucapah	San Diego - 45th & Orange	SIERRA.MEX/03154-90.AT2	4.70	17
39	1999 Kocaeli, Turkey	Arcelik	KOCAELI/ARE090.AT2	1.02	5
40	1979 Imperial Valley-06	Brawley Airport	IMPVALL.H/H-BRA225.AT2	0.58	5
41	2010 El Mayor-Cucapah	San Diego - I5 & Laurel	SIERRA.MEX/03146324.AT2	3.50	21
42	1999 Chi-Chi, Taiwan	TCU067	CHICHI/TCU067-N.AT2	0.36	8
43	1999 Chi-Chi, Taiwan-04	CHY088	CHICHI.04/CHY088E.AT2	2.13	8
44	1999 Chi-Chi, Taiwan-04	CHY016	CHICHI.04/CHY016W.AT2	3.48	23
45	1983 Coalinga-04	Transmitter Hill	COALINGA/C-TSM270.AT2	2.09	2
46	2000 Tottori, Japan	HRSH07	TOTTORI.1/HRSH07NS.AT2	3.99	16

Record #	Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
47	2000 Tottori, Japan	OKYH09	TOTTORI/OKYH09NS.AT2	1	11
48	1971 San Fernando	Pearblossom Pump	SFERN/PPP270.AT2	2.46	7
49	2008 Iwate	Wakabayashi-ku Sendai Tomizuka	IWATE/54081EW.AT2	1.25	7
50	1999 Chi-Chi, Taiwan-02	TCU065	CHICHI.02/TCU065E.AT2	2.04	6
51	1999 Hector Mine	Fun Valley	HECTOR/FVR360.AT2	3.89	12
52	2004 Parkfield-02, CA	Shandon-1-story High School Bldg	PARK2004/36535270.AT2	4.03	6
53	1999 Chi-Chi, Taiwan	TTN051	CHICHI/TTN051-E.AT2	4.41	24
54	2010 El Mayor-Cucapah	Sam W. Stewart	SIERRA.MEX/CISWSHNE.AT2	2.21	10
55	1999 Chi-Chi, Taiwan-03	TCU071	CHICHI.03/TCU071E.AT2	1.05	7
56	2002 CA/Baja Border Area	El Centro - Meadows Union School	CABAJA/2027B360.AT2	3.61	12
57	2004 Niigata, Japan	NIG017	NIIGATA/NIG017NS.AT2	0	6
58	1999 Hector Mine	Mill Creek Ranger Station	HECTOR/MCR180.AT2	3.08	14
59	1999 Chi-Chi, Taiwan-05	TCU036	CHICHI.05/TCU036N.AT2	2.28	8
60	1999 Chi-Chi, Taiwan	TCU045	CHICHI/TCU045-E.AT2	0.34	7
61	1986 Chalfant Valley-02	Benton	CHALFANT.A/A-BEN270.AT2	2.17	6
62	1999 Chi-Chi, Taiwan-02	TCU129	CHICHI.02/TCU129N.AT2	5.00	5
63	2008 Iwate	IWTH26	IWATE/IWTH26NS.AT2	0.37	7
64	1966 Parkfield	Cholame - Shandon Array #8	PARKF/C08320.AT2	1.20	4
65	2008 Iwate	Sanbongi Osaki City	IWATE/54013EW.AT2	1.64	12
66	1989 Loma Prieta	Fremont - Emerson Court	LOMAP/FMS180.AT2	2.19	7
67	1999 Chi-Chi (aftershock 4), Taiwan	CHY008	CHICHI.05/CHY008W.AT2	1.89	6
68	2007 Chuetsu-oki	NIG019	CHUETSU/NIG019NS.AT2	0.59	8
69	1999 Chi-Chi, Taiwan-04	CHY044	CHICHI.04/CHY044E.AT2	3.36	12

Record #	Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
70	1999 Chi-Chi, Taiwan-04	TTN044	CHICHI.04/TTN044W.AT2	3.12	12
71	2009 L'Aquila, Italy	GRAN SASSO (Assergi)	L-AQUILA/EF021YLN.AT2	1.20	6
72	2004 Niigata, Japan	FKS022	NIIGATA/FKS022NS.AT2	1	6
73	1987 Whittier Narrows-01	Studio City - Ventura & Coldwater Cyn Av	WHITTIER.A/A-CO2182.AT2	3.87	3
74	1999 Chi-Chi, Taiwan-05	TCU061	CHICHI.05/TCU061E.AT2	3.74	4
75	1980 Irpinia, Italy-01	Brienza	ITALY/A-BRZ000.AT2	3.19	4
76	1987 Whittier Narrows-02	Santa Fe Springs - E.Joslin	WHITTIER.B/B-EJS318.AT2	3.33	1
77	1979 Imperial Valley-06	Plaster City	IMPVALL.H/H-PLS135.AT2	4.58	6
78	1999 Chi-Chi, Taiwan	CHY088	CHICHI/CHY088-E.AT2	1.73	17
79	1987 Whittier Narrows-02	Buena Park - La Palma	WHITTIER.B/B-BPK090.AT2	5.00	1
80	1994 Northridge-01	Sun Valley - Roscoe Blvd	NORTHR/RO3090.AT2	1.37	6
81	1981 Taiwan SMART1(5)	SMART1 O12	SMART1.05/05O12NS.AT2	5.00	1
82	1999 Chi-Chi, Taiwan-03	TCU075	CHICHI.03/TCU075E.AT2	4.44	2
83	2004 Niigata, Japan	NIGH11	NIIGATA/NIGH11NS.AT2	1.09	4
84	1983 Coalinga-01	Parkfield - Stone Corral 3E	COALINGA.H/H-SC3090.AT2	5.00	5
85	1987 Whittier Narrows-02	La Habra - Briarcliff	WHITTIER.B/B-BRC090.AT2	5.00	4
86	1999 Chi-Chi, Taiwan-06	TCU122	CHICHI.06/TCU122N.AT2	4.05	8
87	1986 Chalfant Valley-01	Bishop - LADWP South St	CHALFANT.B/B-LAD180.AT2	1.53	8
88	1994 Northridge-01	LA - Pico & Sentous	NORTHR/PIC090.AT2	1.46	9
89	1981 Taiwan SMART1(5)	SMART1 M10	SMART1.05/05M10EW.AT2	3.98	4
90	2011 Christchurch, New Zealand	Kaiapoi North School	CCHURCH/KPOCS75E.AT2	1.80	5
91	1999 Hector Mine	Amboy	HECTOR/ABY360.AT2	1.47	11
92	2010 Darfield, New Zealand	DORC	DARFIELD/DORCN20W.AT2	2.97	16
93	1999 Chi-Chi, Taiwan	TCU075	CHICHI/TCU075-E.AT2	0.54	18

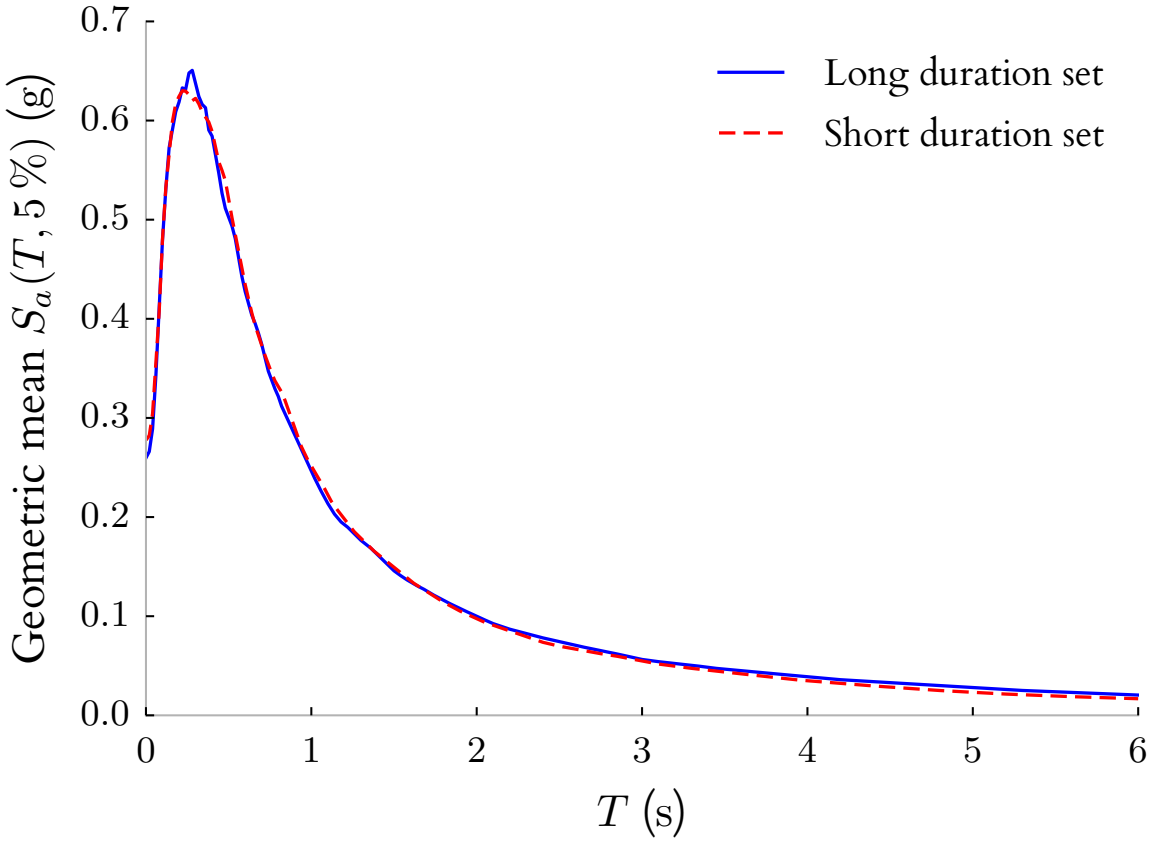
Record #	Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
94	1999 Chi-Chi, Taiwan	TCU101	CHICHI/TCU101-E.AT2	0.82	16
95	1992 Landers	Amboy	LANDERS/ABY090.AT2	1.55	17
96	2010 Darfield, New Zealand	Canterbury Aero Club	DARFIELD/CACSN50W.AT2	1.26	15
97	1983 Coalinga-05	Palmer Ave	COALINGA/D-PLM270.AT2	2.27	2
98	2004 Niigata, Japan	NIGH10	NIIGATA/NIGH10EW.AT2	4.11	6
99	1983 Mammoth Lakes-11	Convict Creek	MAMMOTH.AH/G-CVK180.AT2	4.14	4
100	1979 Coyote Lake	Gilroy Array #3	COYOTELK/G03140.AT2	1.22	2
101	1983 Coalinga-05	Coalinga-14th & Elm (Old CHP)	COALINGA/D-CHP090.AT2	1.16	1
102	1987 Whittier Narrows-01	Orange Co. Reservoir	WHITTIER.A/A-ORN096.AT2	4.03	3
103	2008 Iwate	Shinchicho Yacigoya	IWATE/57059EW.AT2	5.00	6
104	1981 Taiwan SMART1(5)	SMART1 M02	SMART1.05/05M02NS.AT2	4.76	3
105	2003 Big Bear City	Big Bear Solar Observatory	BEARCTY/CIBBRHLN.AT2	4	2
106	1987 Whittier Narrows-01	Canyon Country - W Lost Cany	WHITTIER.A/A-LOS000.AT2	4.29	3
107	1992 Erzican, Turkey	Erzincan	ERZINCAN/ERZ-NS.AT2	0.73	2
108	1994 Northridge-01	Jensen Filter Plant Administrative Building	NORTHR/JEN022.AT2	0.67	4
109	2007 Chuetsu-oki	Toyotsu Nakano	CHUETSU/70031NS.AT2	2.28	2
110	1984 Morgan Hill	Anderson Dam (Downstream)	MORGAN/AND340.AT2	1.55	2
111	1999 Chi-Chi, Taiwan-06	CHY024	CHICHI.06/CHY024N.AT2	1.78	7
112	1980 Irpinia, Italy-01	Auletta	ITALY/A-AUL270.AT2	3.19	13
113	2000 Yountville	Napa - Napa College	YOUNTVL/NAP360.AT2	1.67	2
114	1987 Whittier Narrows-01	El Monte - Fairview Av	WHITTIER.A/A-FAI185.AT2	1.07	2
115	1999 Chi-Chi (aftershock 3), Taiwan	CHY014	CHICHI.04/CHY014N.AT2	4.00	6

Record #	Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
116	1997 Northwest China-01	Jiashi	NWCHINA1/JIA270.AT2	2.47	2
117	2004 Parkfield-02, CA	Parkfield - Cholame 5W	PARK2004/C05090.AT2	3.03	2
118	2004 Parkfield-02, CA	Parkfield - Cholame 3E	PARK2004/TM3090.AT2	1.26	1
119	1980 Irpinia, Italy-01	Tricarico	ITALY/A-TRC270.AT2	5.00	14
120	1999 Chi-Chi, Taiwan-06	TCU118	CHICHI.06/TCU118E.AT2	4.63	24
121	1999 Chi-Chi, Taiwan-02	TCU067	CHICHI.02/TCU067N.AT2	5.00	5
122	1991 Sierra Madre	Altadena - Eaton Canyon	SMADRE/ALT000.AT2	1.26	1
123	1999 Chi-Chi, Taiwan-03	TCU138	CHICHI.03/TCU138N.AT2	3.62	5
124	1999 Chi-Chi, Taiwan-06	CHY039	CHICHI.06/CHY039N.AT2	4.65	14
125	1979 Imperial Valley-06	El Centro Array #4	IMPVALL.H/H-E04140.AT2	0.93	3
126	1992 Landers	Boron Fire Station	LANDERS/BFS000.AT2	3.62	8
127	1995 Kobe, Japan	Takarazuka	KOBE/TAZ000.AT2	0.64	2
128	1999 Hector Mine	Temecula - 6th & Mercedes	HECTOR/TFS360.AT2	4.91	13
129	2009 L'Aquila, Italy	Celano	L-AQUILA/TK003YLN.AT2	3.58	4
130	1999 Chi-Chi, Taiwan-06	TCU138	CHICHI.06/TCU138N.AT2	3.91	14
131	2007 Chuetsu-oki	Shiozawa Building, Minamiunuma	CHUETSU/65050NS.AT2	2.73	11
132	2007 Chuetsu-oki	NIG013	CHUETSU/NIG013NS.AT2	2	12
133	1994 Northridge-01	Castaic - Old Ridge Route	NORTHR/ORR090.AT2	0.38	4
134	1984 Morgan Hill	San Justo Dam (L Abut)	MORGAN/SJL360.AT2	2.71	11
135	1989 Loma Prieta	Los Gatos - Lexington Dam	LOMAP/LEX000.AT2	0.34	2
136	2007 Chuetsu-oki	Joetsu City	CHUETSU/65019NS.AT2	0.74	14
137	1999 Chi-Chi, Taiwan-05	CHY063	CHICHI.05/CHY063N.AT2	4.89	13
138	1994 Northridge-01	Sylmar - Olive View Med FF	NORTHR/SYL090.AT2	0.44	3
139	1976 Friuli (aftershock 13), Italy	San Rocco	FRIULI.P1/Z-SRO-NS.AT2	1.65	3
140	1999 Chi-Chi, Taiwan-05	CHY054	CHICHI.05/CHY054N.AT2	3.54	11

Record #	Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
141	2010 Darfield, New Zealand	Shirley Library	DARFIELD/SHLCS40W.AT2	0.88	12
142	1999 Chi-Chi, Taiwan-03	CHY088	CHICHI.03/CHY088N.AT2	3.34	12
143	1999 Chi-Chi, Taiwan	ILA062	CHICHI/ILA062-W.AT2	2.53	14
144	1979 Coyote Lake	Gilroy Array #4	COYOTELK/G04360.AT2	0.83	5
145	2007 Chuetsu-oki	NIGH18	CHUETSU/NIGH18NS.AT2	2.21	8
146	2007 Chuetsu-oki	Niigata Nishi Kaba District	CHUETSU/690E1EW.AT2	1.17	12

[6]Source of all short duration records: PEER NGA-West2 database Ancheta et al. 2013 (http://peer.berkeley.edu/ngawest2/databases/)

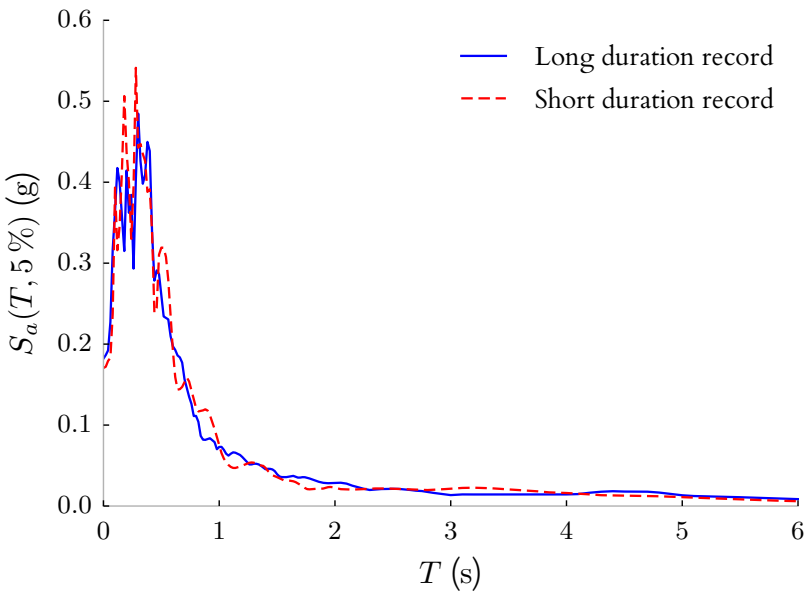
4 Geometric mean response spectra of the records in the two sets

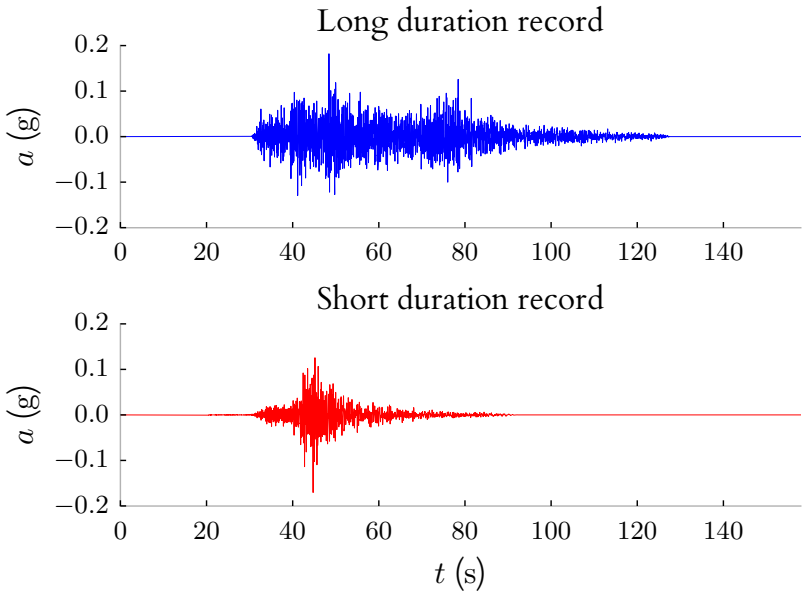


5 Response spectra and time history plots of all spectrally equivalent record pairs

Spectrally equivalent record pair #1

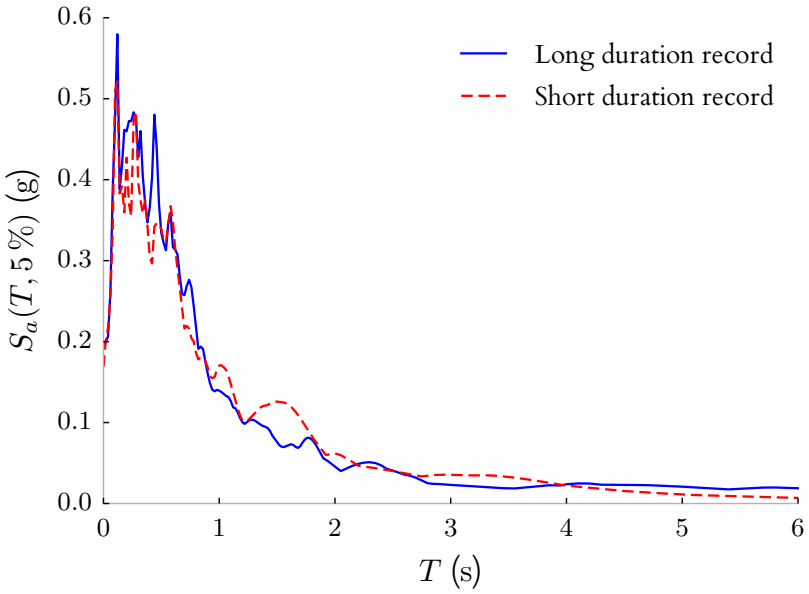
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1974 Lima, Peru	Arequipa	Arequipa_H1.th	–	35
1999 Chi-Chi, Taiwan-05	CHY087	CHICHI.05/CHY087E.AT2	1.87	7

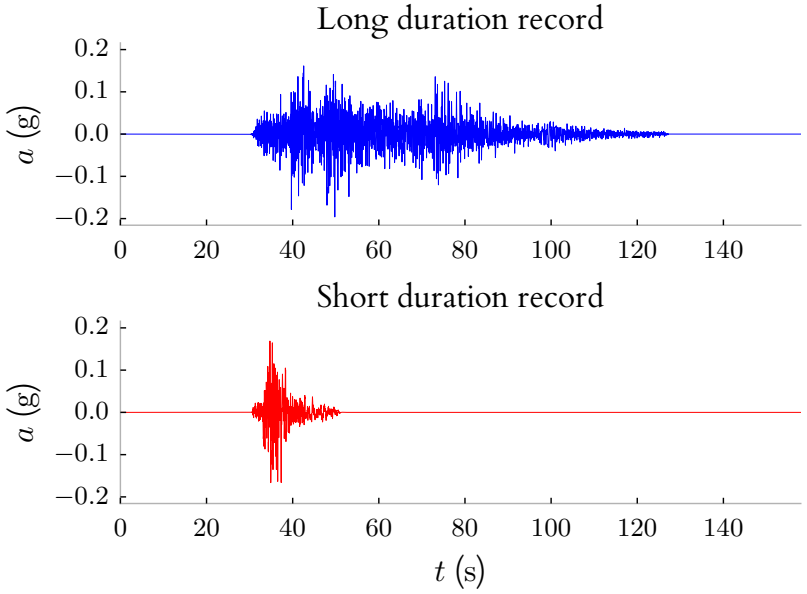




Spectrally equivalent record pair #2

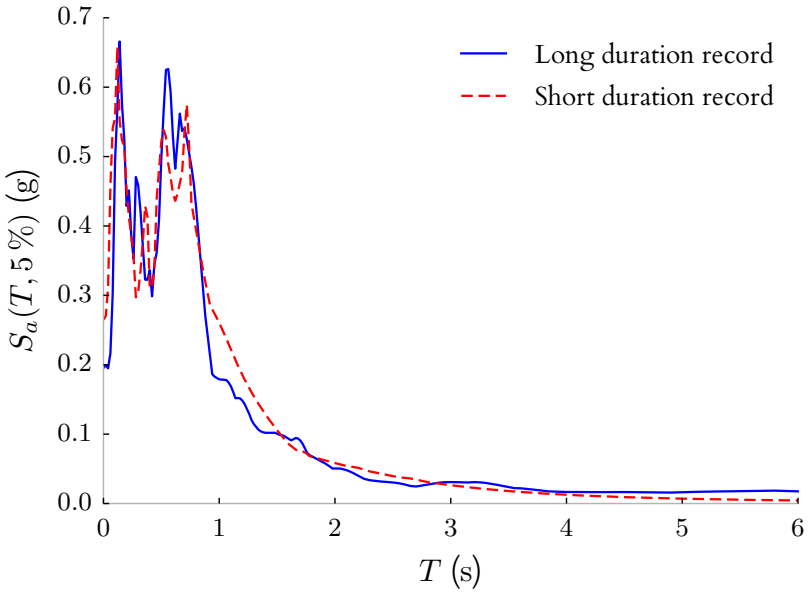
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1974 Lima, Peru	Arequipa	Arequipa_H2.th	–	33
2004 Parkfield-02, CA	Parkfield - Vineyard Cany 4W	PARK2004/VC4360.AT2	1.83	4

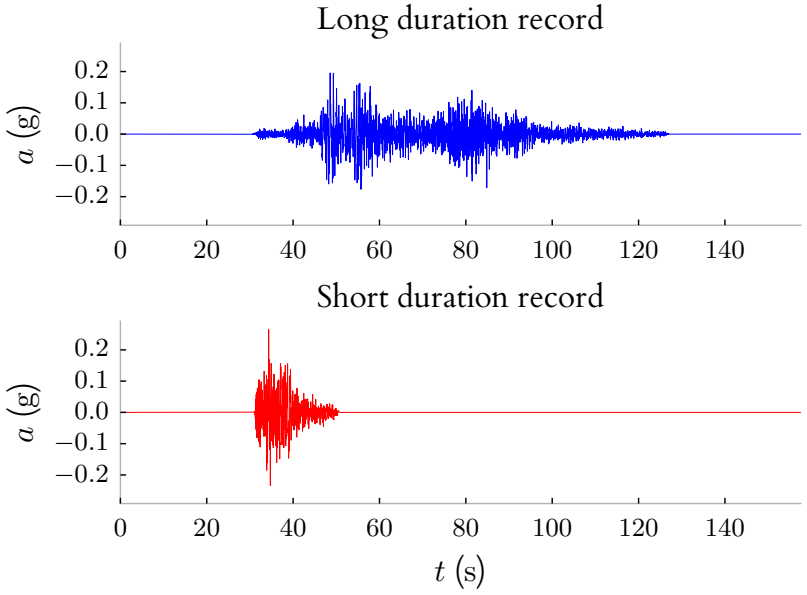




Spectrally equivalent record pair #3

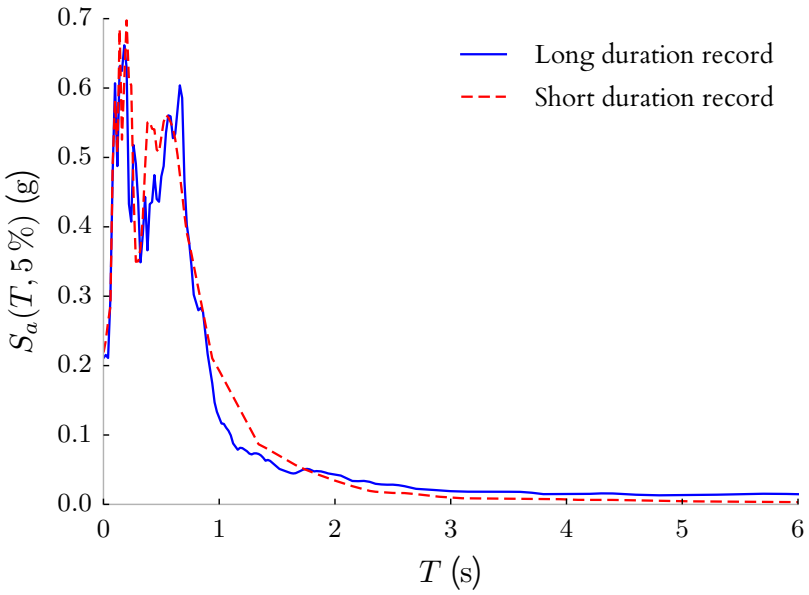
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1974 Lima, Peru	Las Gardenias	Las_Gardenias_L.th	–	33
1986 N. Palm Springs	Fun Valley	PALMSPR/FVR135.AT2	2.11	6

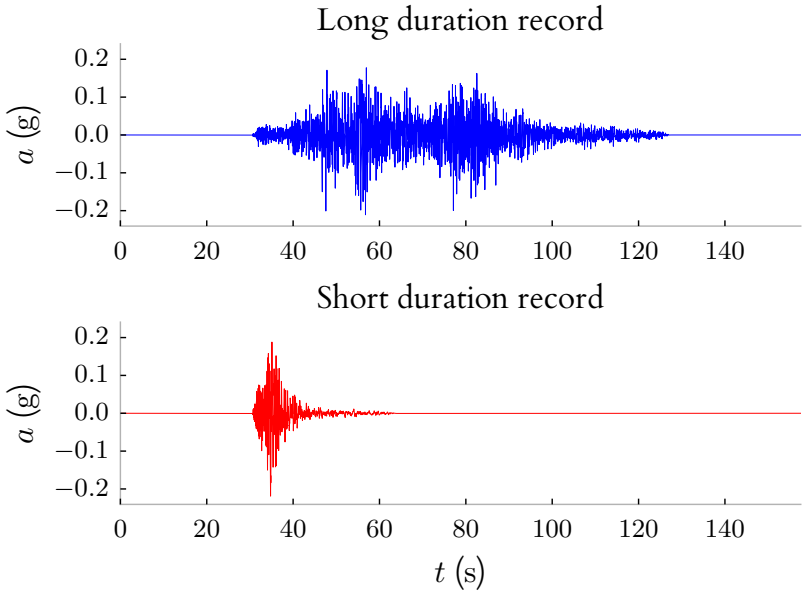




Spectrally equivalent record pair #4

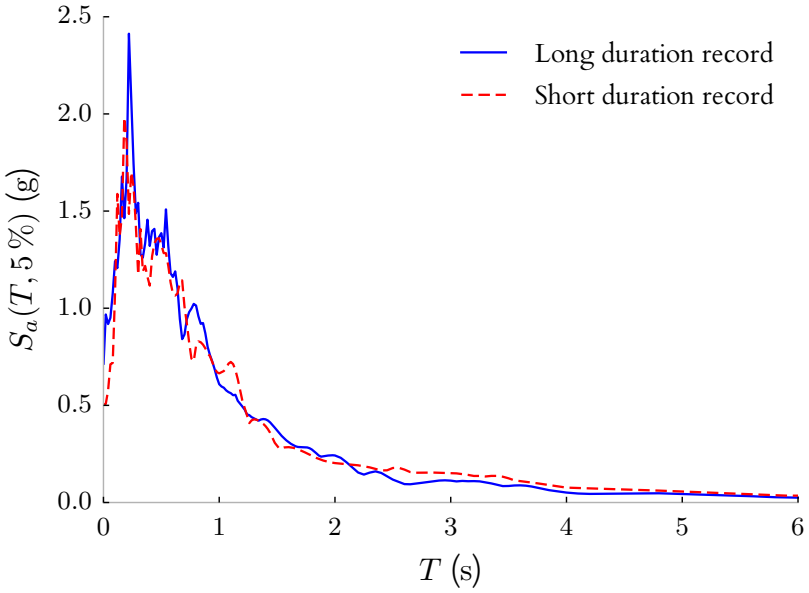
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1974 Lima, Peru	Las Gardenias	Las_Gardenias_T.th	–	33
2009 L'Aquila (aftershock 2), Italy	L'Aquila - V. Aterno -Colle Grilli	L-AQUILA.B/FA237YLN.AT2	3.62	3

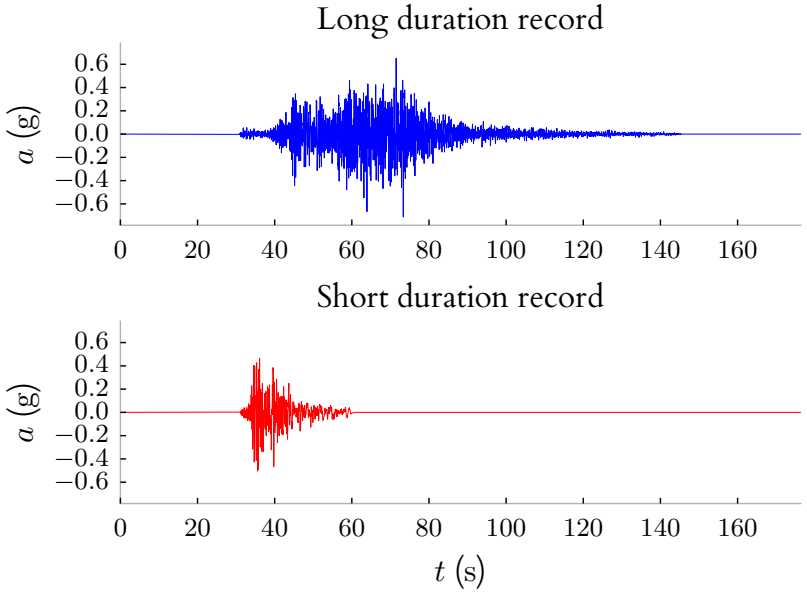




Spectrally equivalent record pair #5

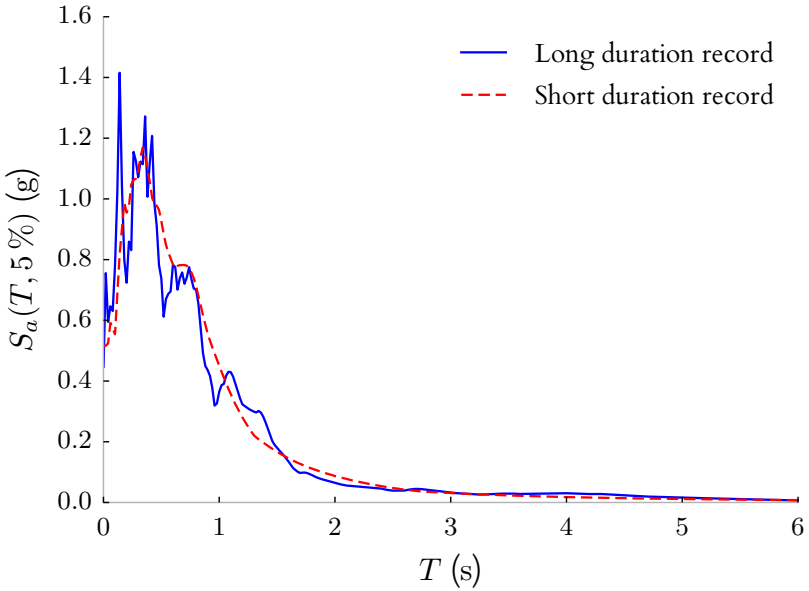
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Valparaiso, Chile	Llolleo	LLOLLEO10.th	–	28
1994 Northridge-01	Sun Valley - Roscoe Blvd	NORTHR/RO3000.AT2	1.82	6

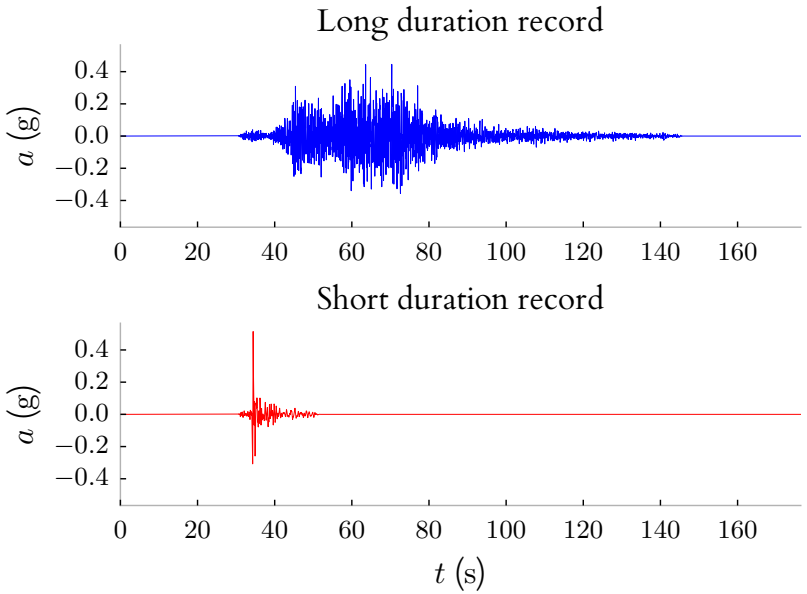




Spectrally equivalent record pair #6

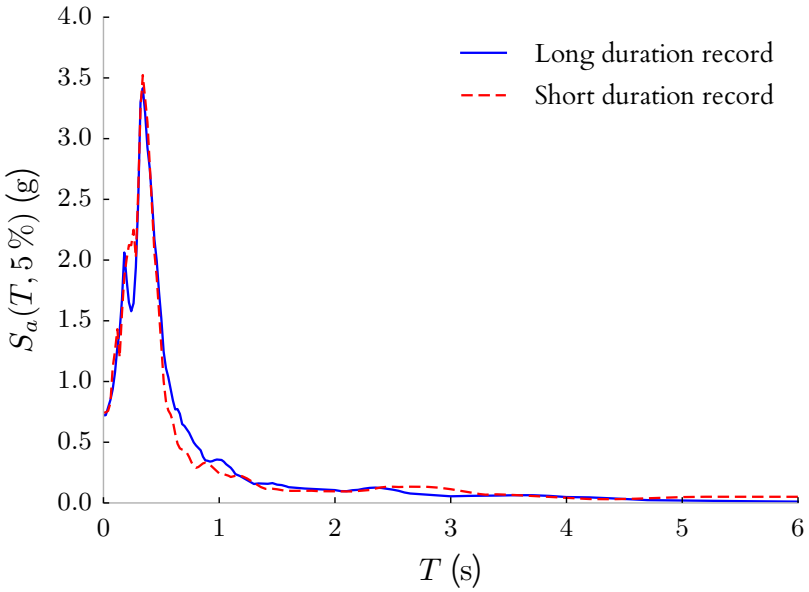
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Valparaiso, Chile	Llolleo	LLOLLEO100.th	–	26
1980 Livermore-02	San Ramon - Eastman Kodak	LIVERMOR/B-KOD180.AT2	1.84	1

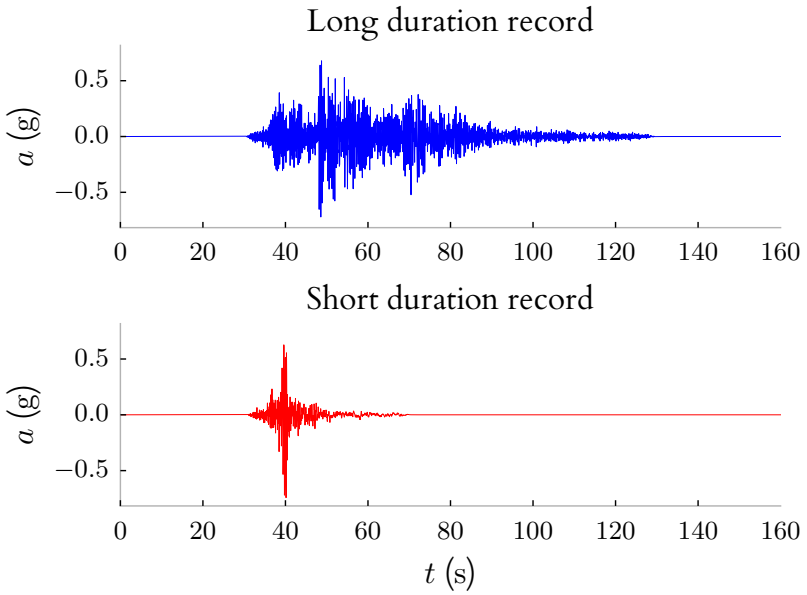




Spectrally equivalent record pair #7

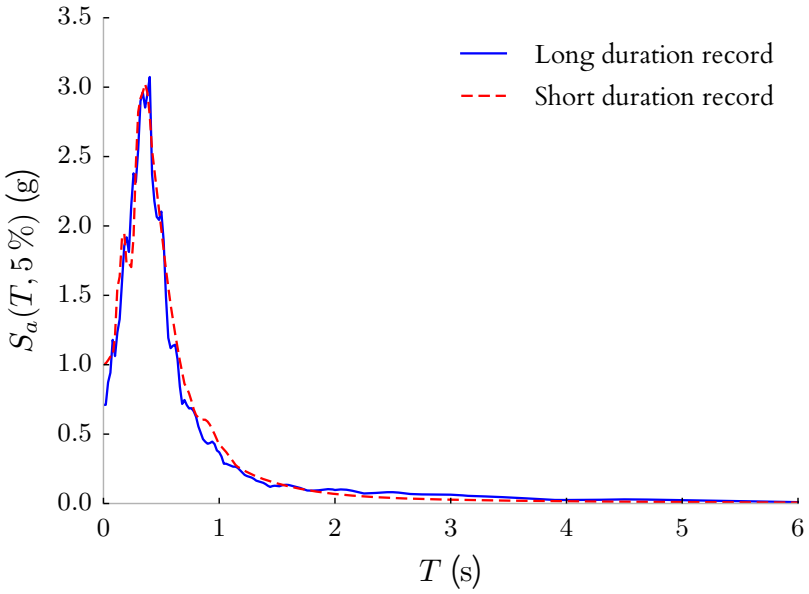
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Valparaiso, Chile	San Isidro	SANISIDROL.th	–	30
2011 Christchurch, New Zealand	SWNC	CCHURCH/SWNCN66W.AT2	3.55	2

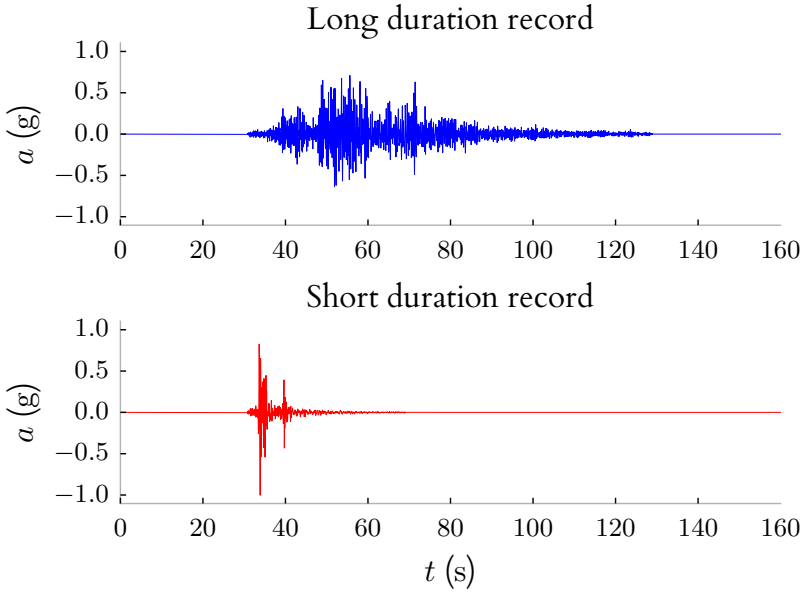




Spectrally equivalent record pair #8

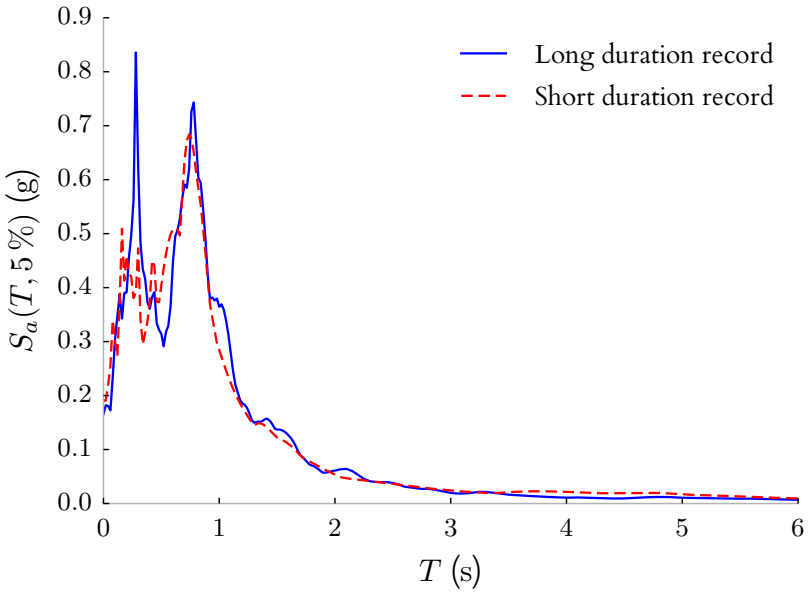
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Valparaiso, Chile	San Isidro	SANISIDROT.th	–	24
1994 Northridge-06	Jensen Filter Plant Generator Building	NORTH392/JGB292.AT2	3.31	1

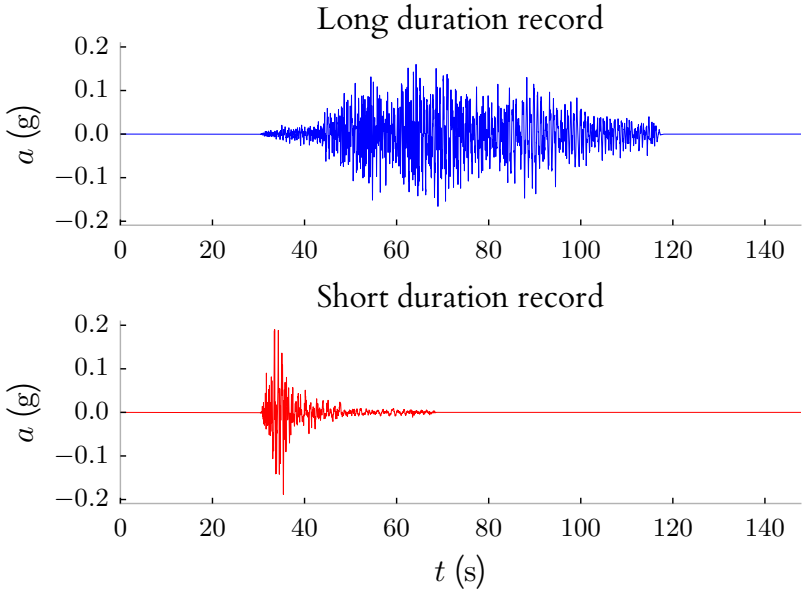




Spectrally equivalent record pair #9

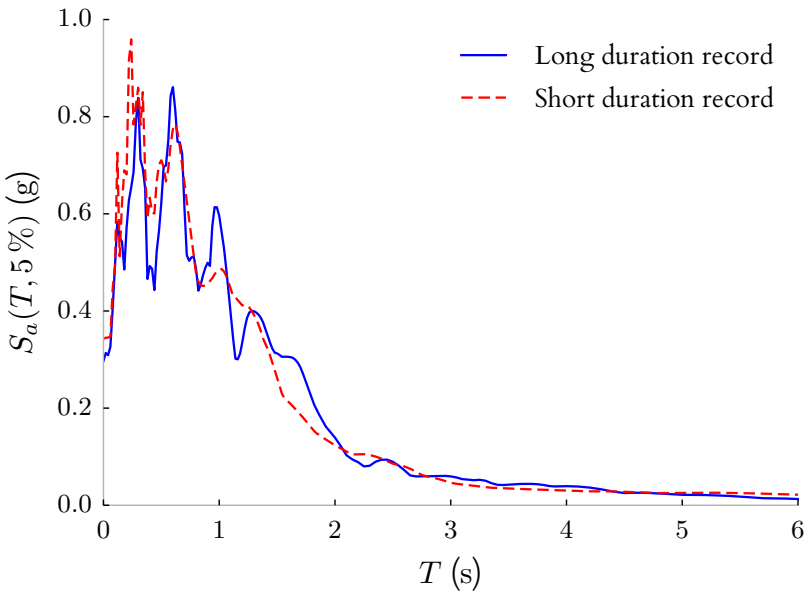
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Valparaiso, Chile	Valparaiso El Almendral	VALPARAISOELALMENDRAL140.th	–	37
1986 Chalfant Valley-02	Zack Brothers Ranch	CHALFANT.A/A-ZAK360.AT2	0.47	3

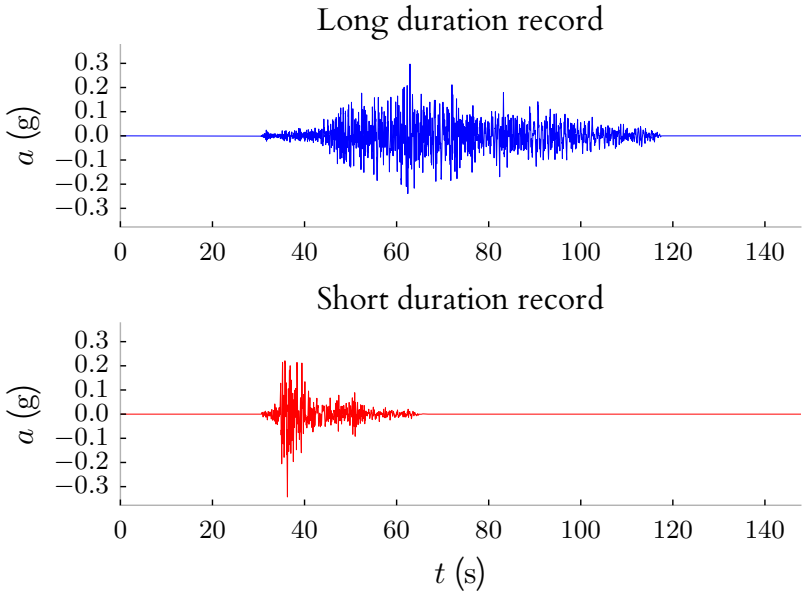




Spectrally equivalent record pair #10

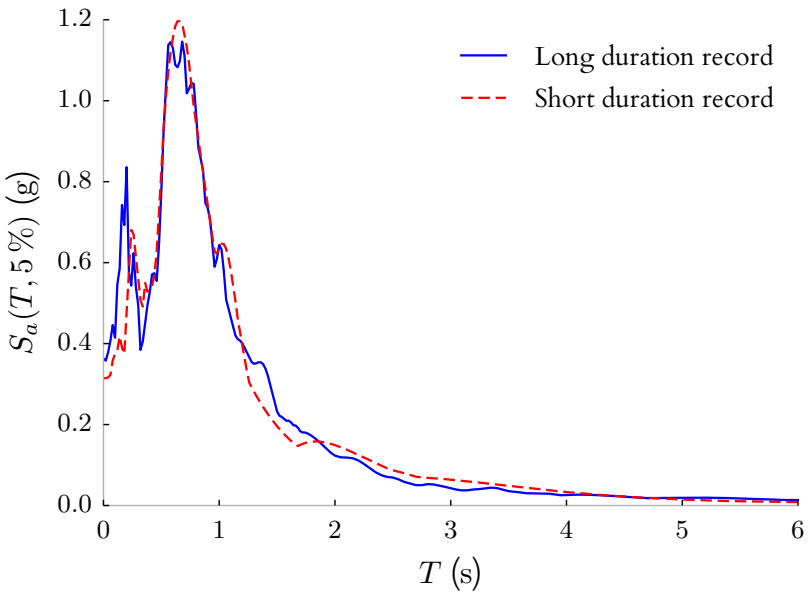
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Valparaiso, Chile	Valparaiso El Almendral	VALPARAISOELALMENDRAL50.th	–	31
1992 Cape Mendocino	Rio Dell Overpass - FF	CAPEMEND/RDL270.AT2	0.90	4

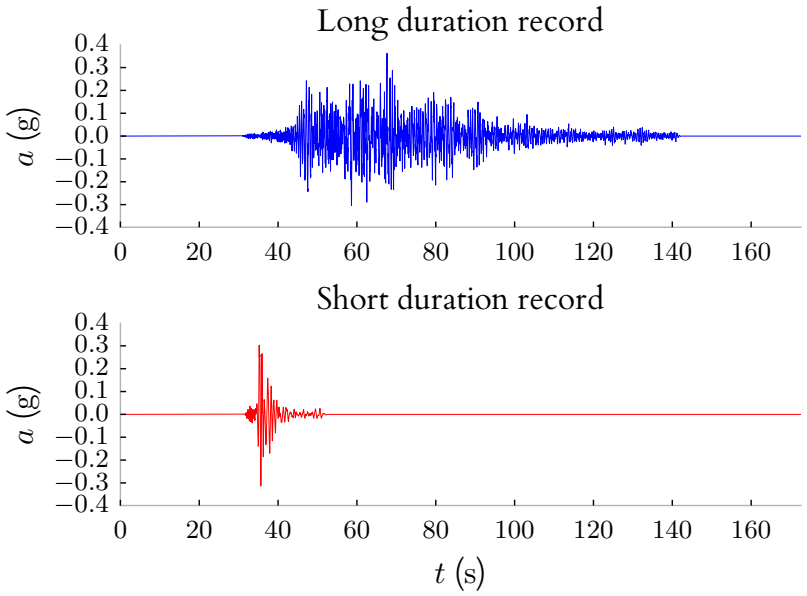




Spectrally equivalent record pair #11

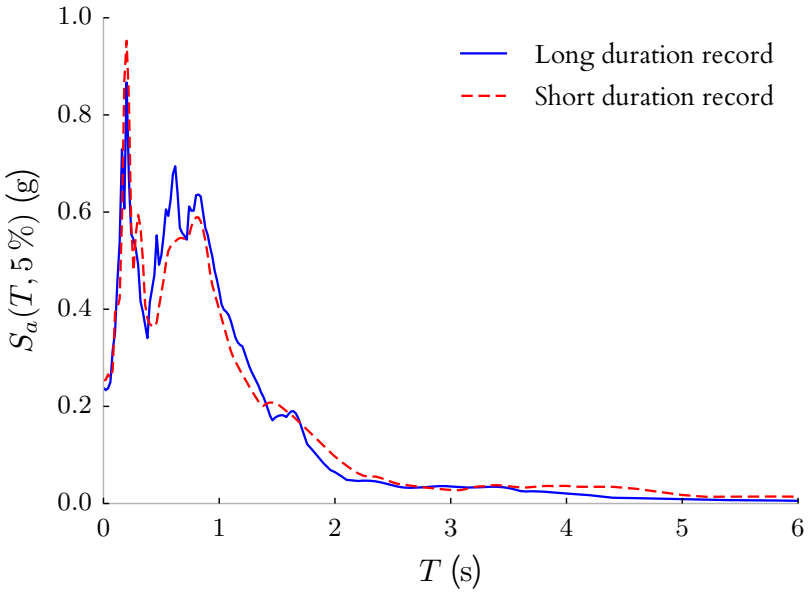
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Valparaiso, Chile	Vina Del Mar	VINADELMAR200.th	–	32
2004 Parkfield-02, CA	Slack Canyon	PARK2004/SCN360.AT2	0.90	2

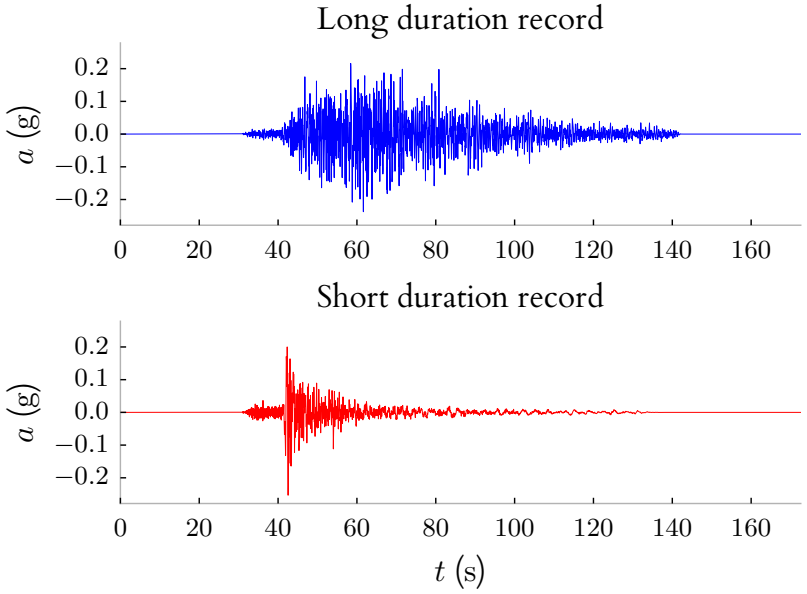




Spectrally equivalent record pair #12

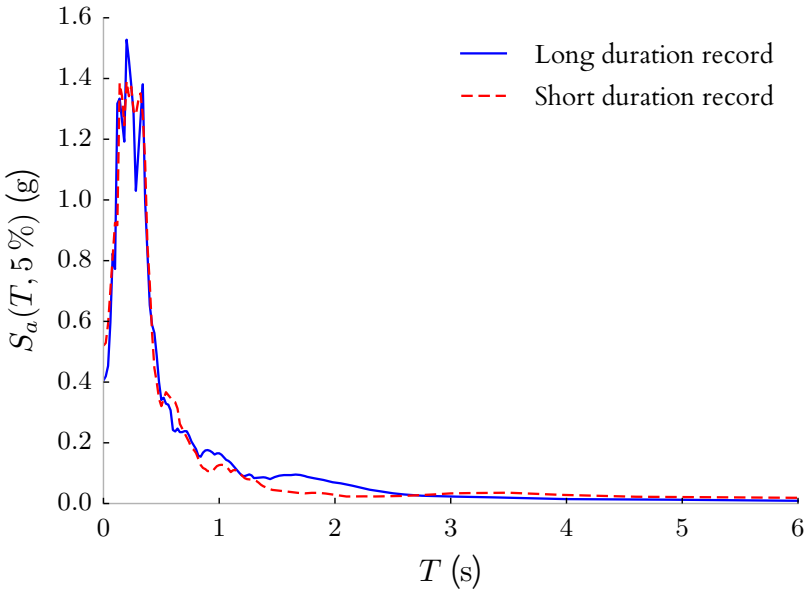
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Valparaiso, Chile	Vina Del Mar	VINADELMAR290.th	–	32
2008 Iwate	Miyagino-ku, Sendai Olympics	IWATE/4E061EW.AT2	1.94	6

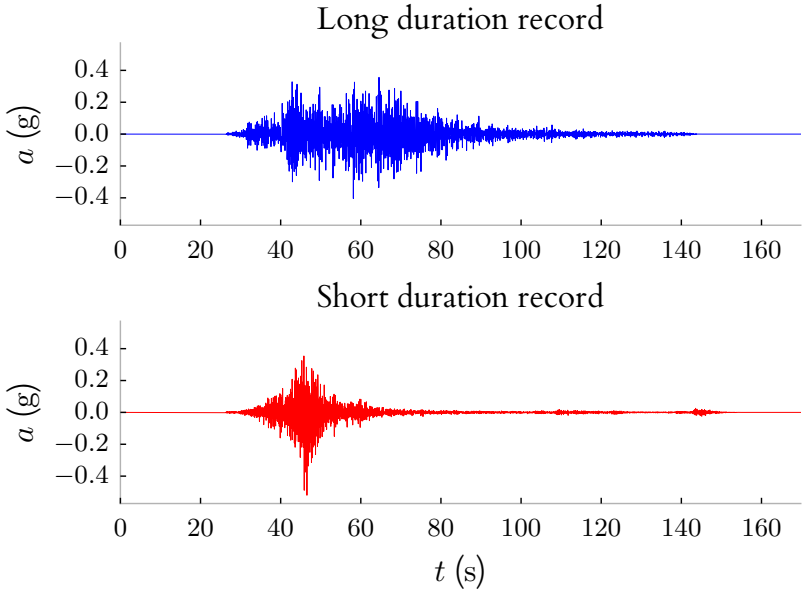




Spectrally equivalent record pair #13

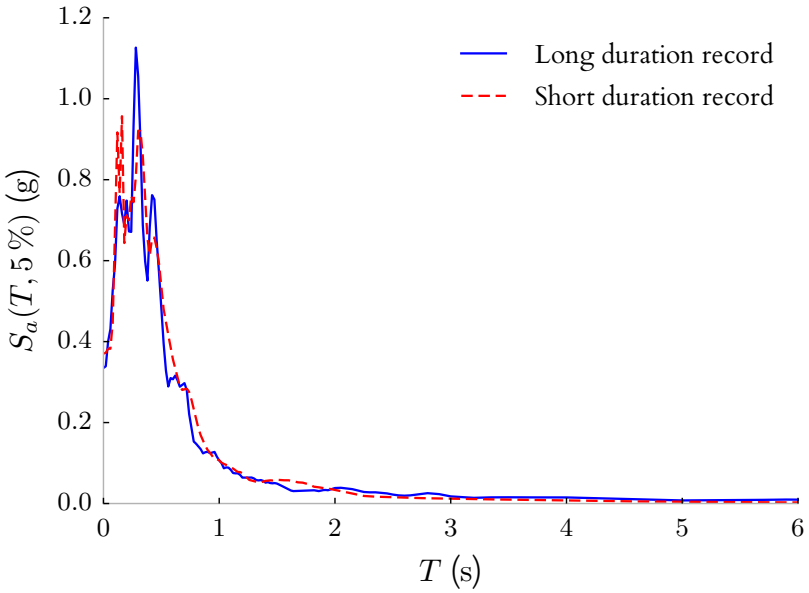
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Michoacan, Mexico	Infiernillo Media Cortina	IN128509191_H1.th	–	27
2010 Darfield, New Zealand	Heathcote Valley Primary School	DARFIELD/HVSCS64E.AT2	0.82	8

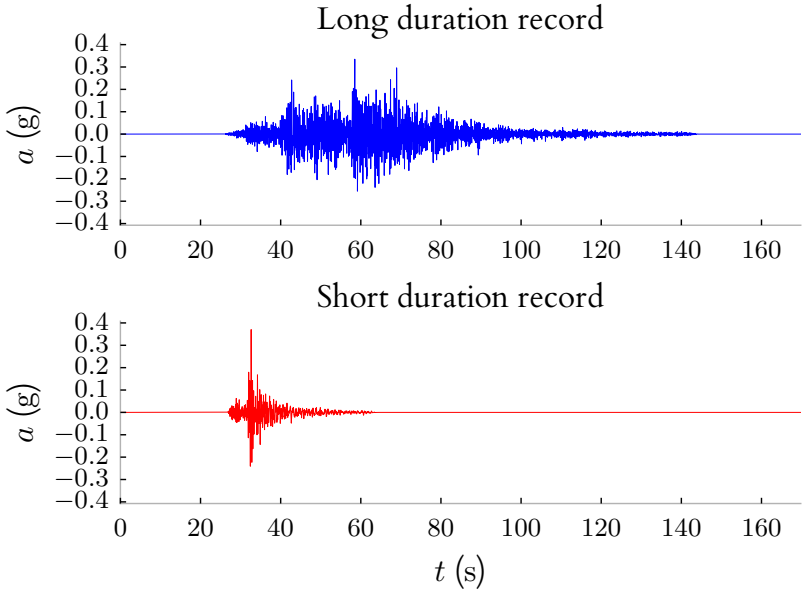




Spectrally equivalent record pair #14

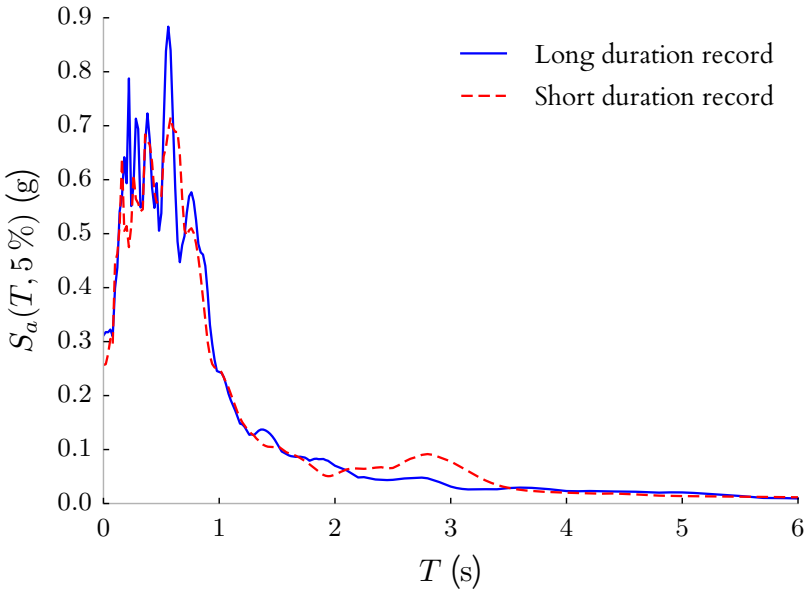
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Michoacan, Mexico	Infiernillo Media Cortina	IN128509191_H2.th	–	27
1987 Whittier Narrows-01	Sun Valley - Roscoe Blvd	WHITTIER.A/A-RO3090.AT2	1.59	3

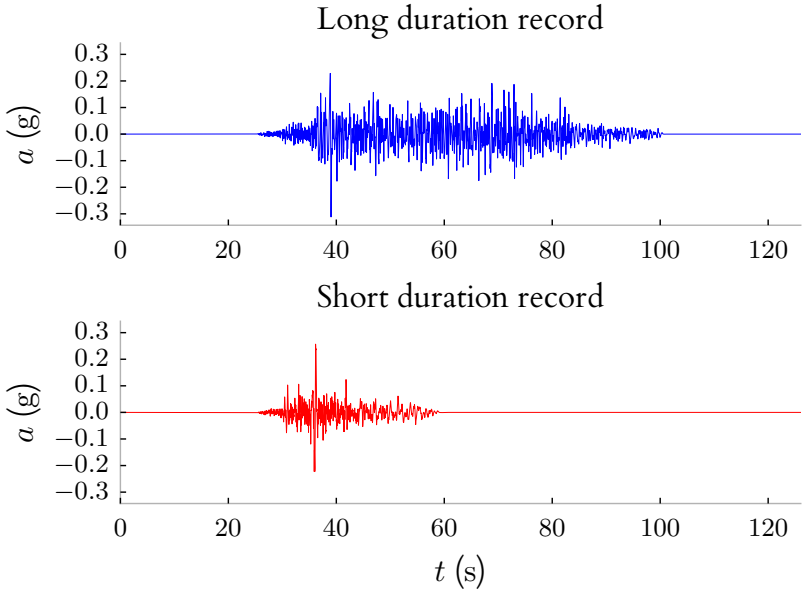




Spectrally equivalent record pair #15

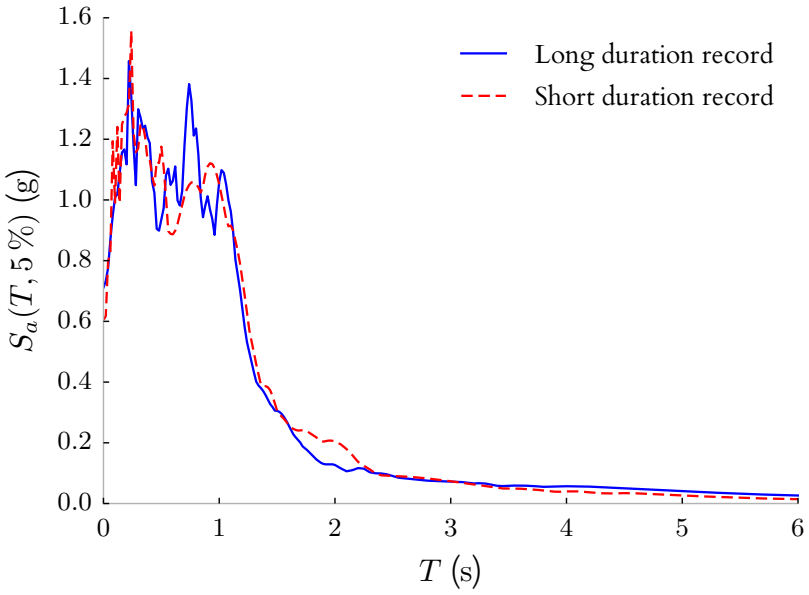
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Michoacan, Mexico	Villita Corona Centro	VILC8509191_H1.th	–	33
1994 Northridge-01	Manhattan Beach - Manhattan	NORTHR/MAN000.AT2	1.64	9

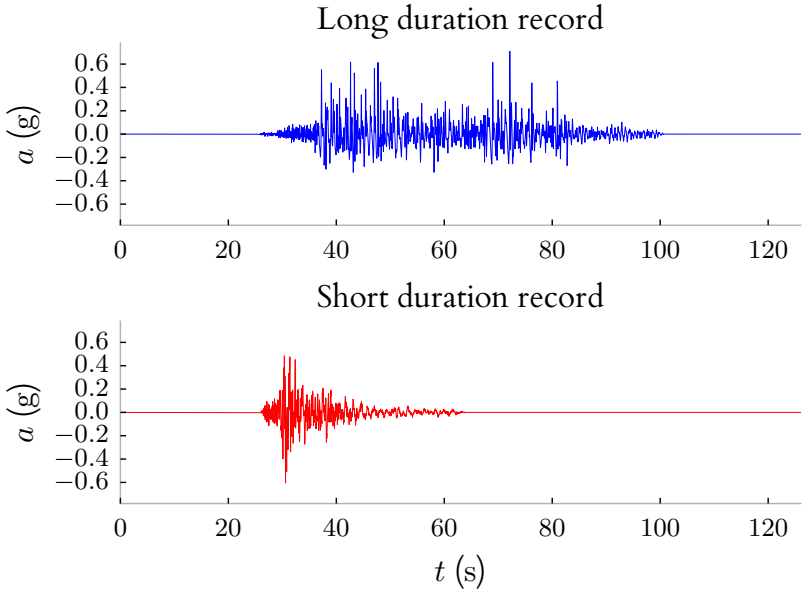




Spectrally equivalent record pair #16

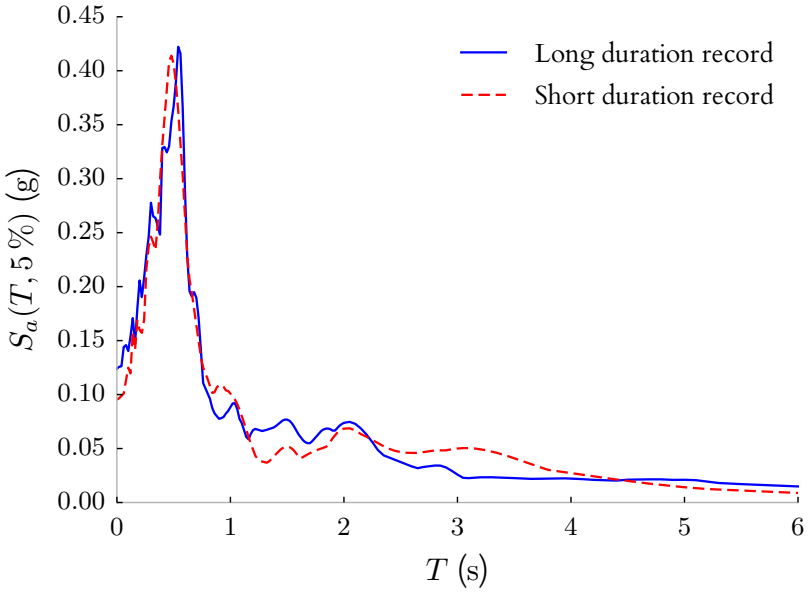
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Michoacan, Mexico	Villita Corona Centro	VILC8509191_H2.th	–	34
1986 Chalfant Valley-02	Benton	CHALFANT.A/A-BEN360.AT2	3.38	6

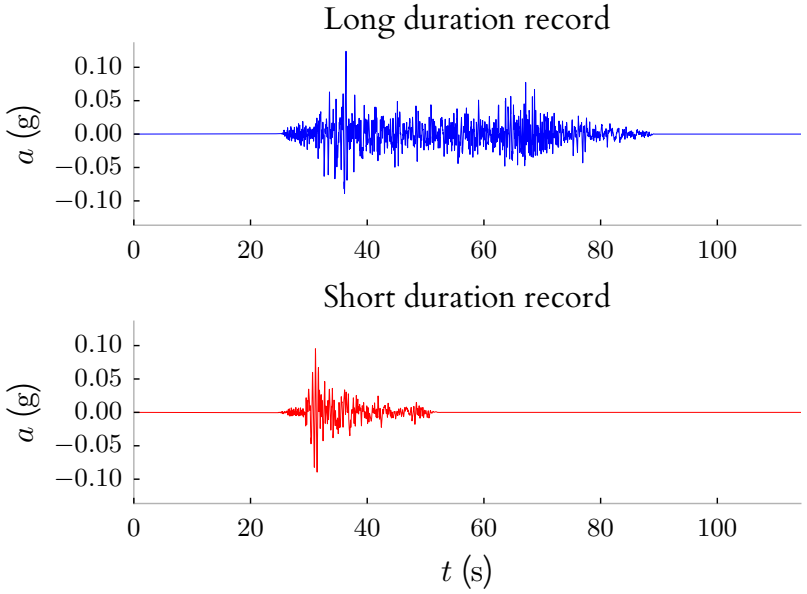




Spectrally equivalent record pair #17

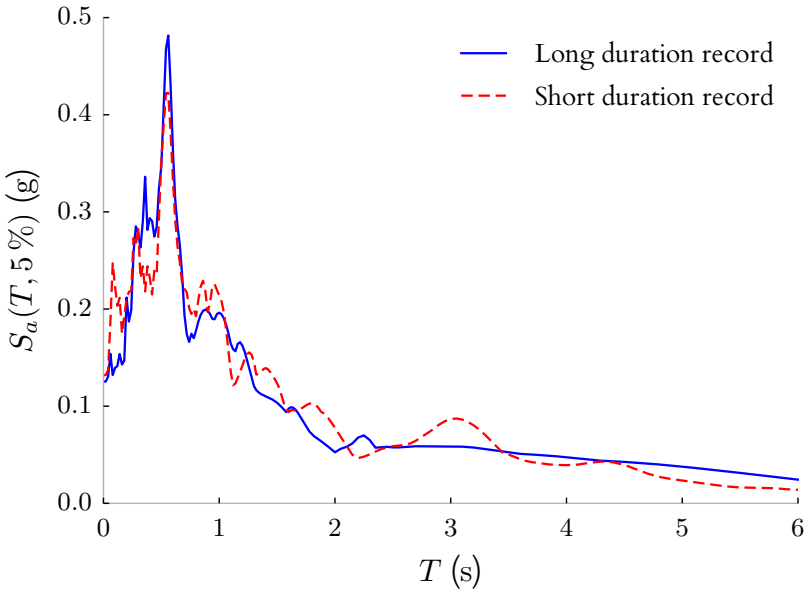
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Michoacan, Mexico	Villita Margen Derecha	VILE8509191_H1.th	–	31
1992 Cape Mendocino	Fortuna Fire Station	CAPEMEND/FFT270.AT2	0.29	4

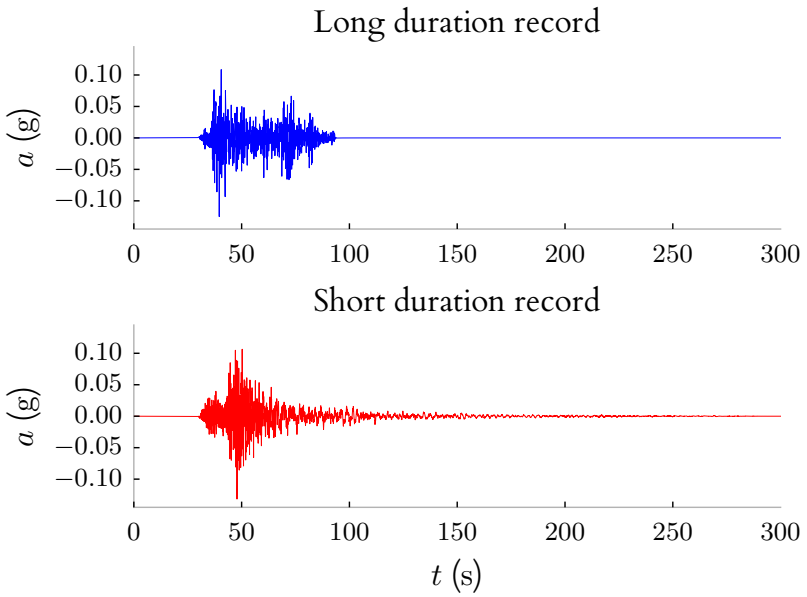




Spectrally equivalent record pair #18

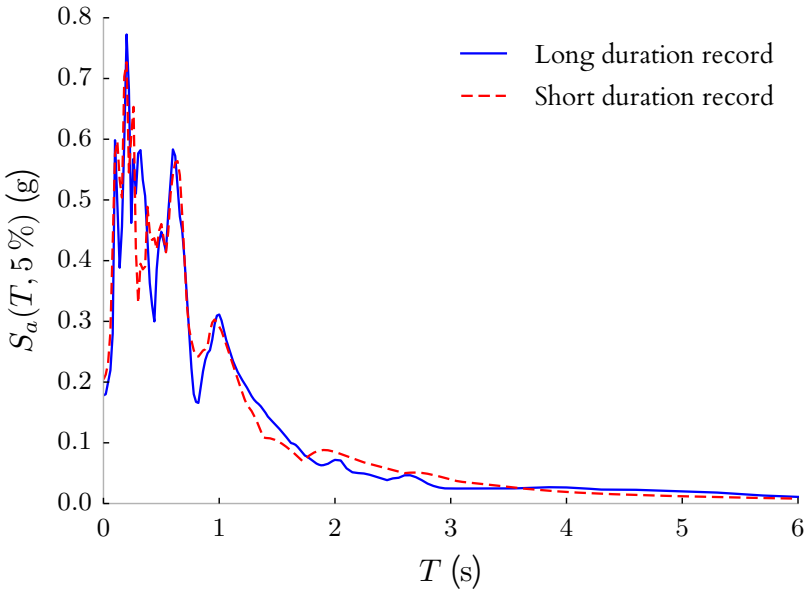
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Michoacan, Mexico	Villita Margen Derecha	VILE8509191_H2.th	–	32
2008 Iwate	MYGH09	IWATE/MYGH09NS.AT2	2.76	16

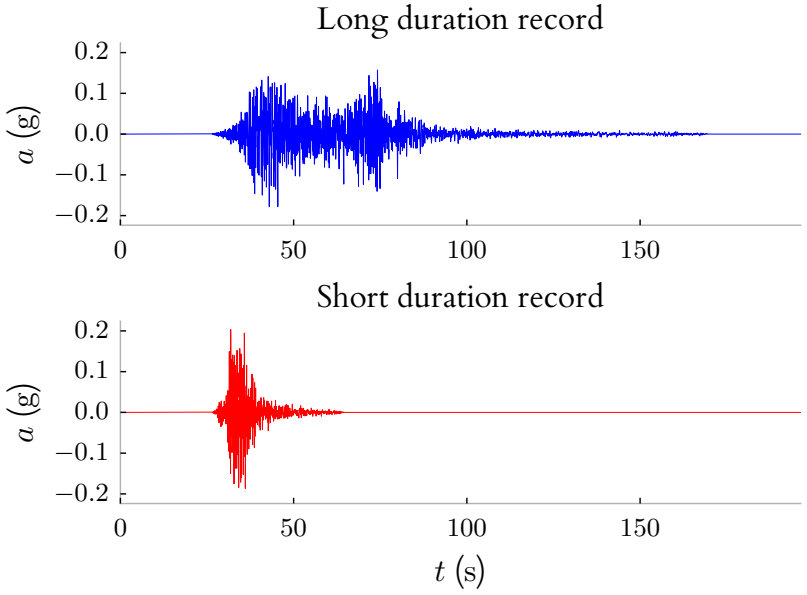




Spectrally equivalent record pair #19

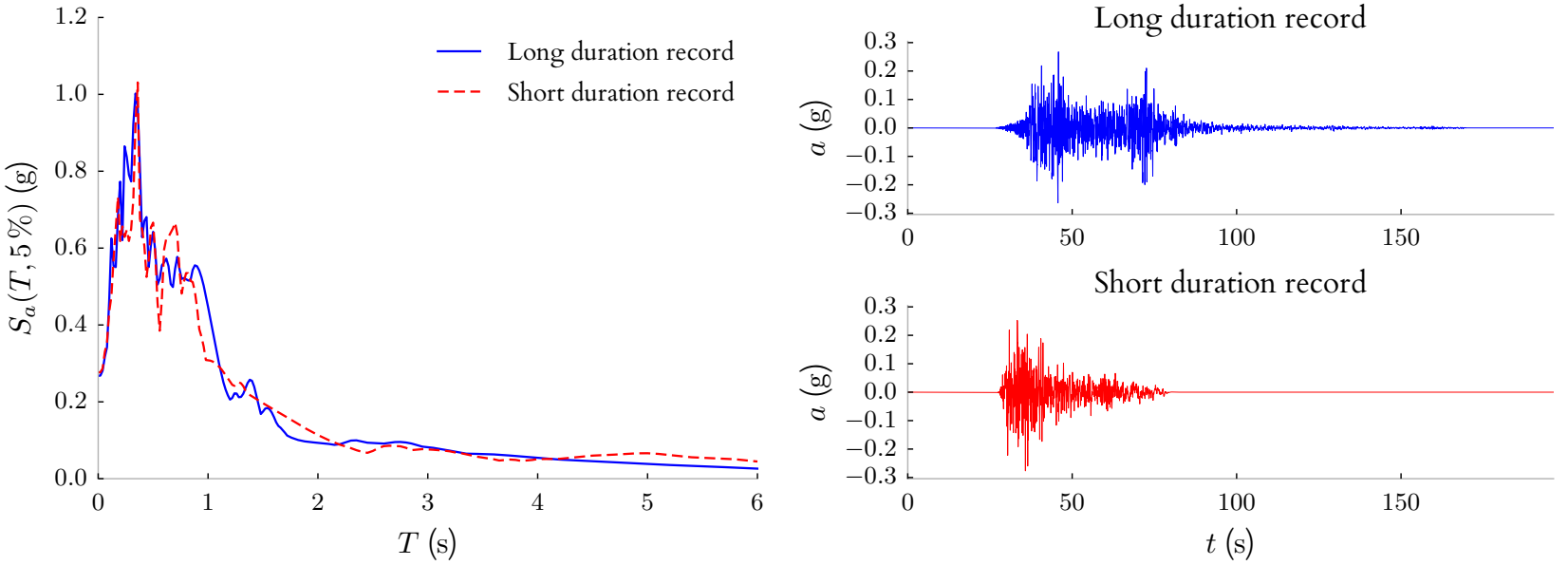
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Michoacan, Mexico	Zacatula	ZACA8509191_H1.th	–	34
1994 Northridge-01	Vasquez Rocks Park	NORTHR/VAS090.AT2	1.46	4





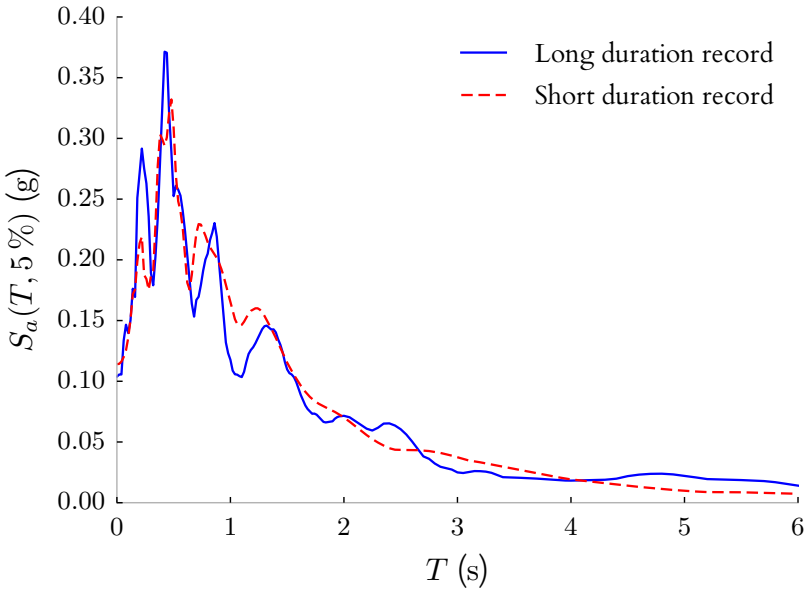
Spectrally equivalent record pair #20

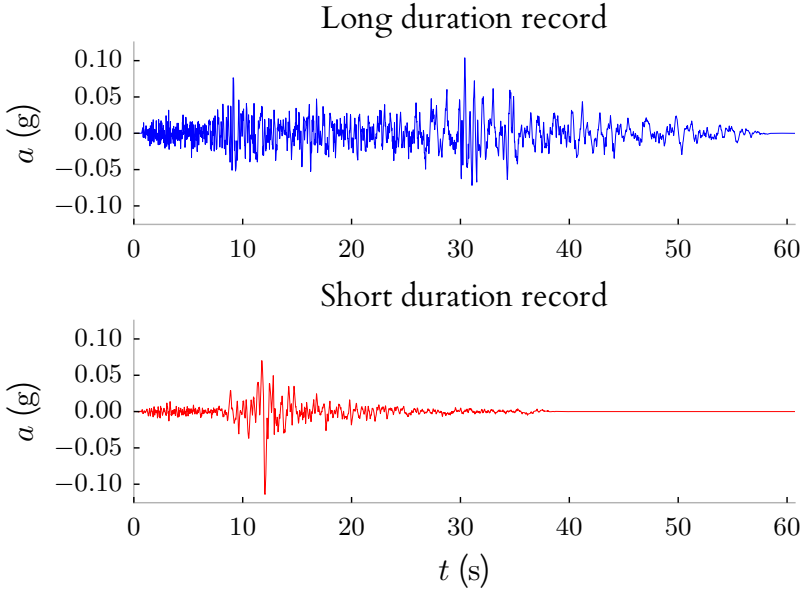
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1985 Michoacan, Mexico	Zacatula	ZACA8509191_H2.th	–	32
1952 Kern County	Taft Lincoln School	KERN/TAF021.AT2	1.74	11



Spectrally equivalent record pair #21

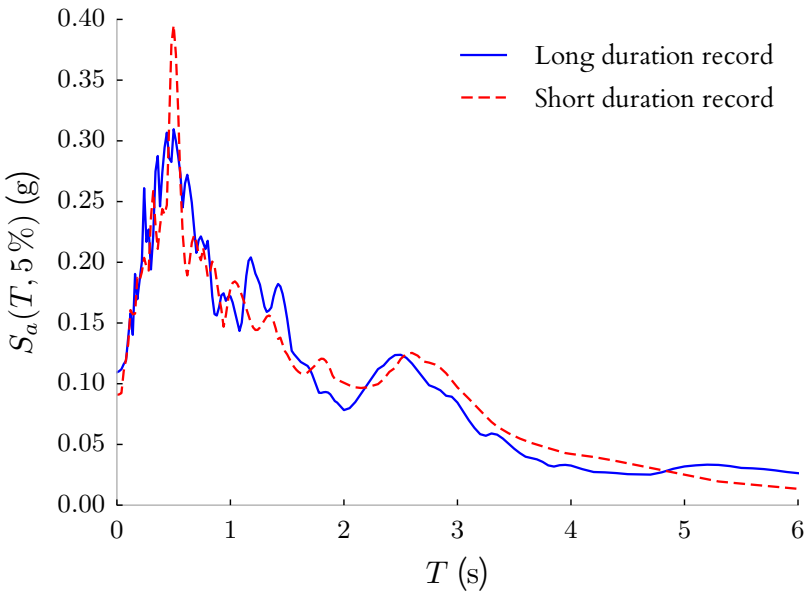
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1992 Landers	Indio - Coachella Canal	LANDERS/IND000.AT2	–	25
1989 Loma Prieta	SF - Presidio	LOMAP/PRS090.AT2	0.57	3

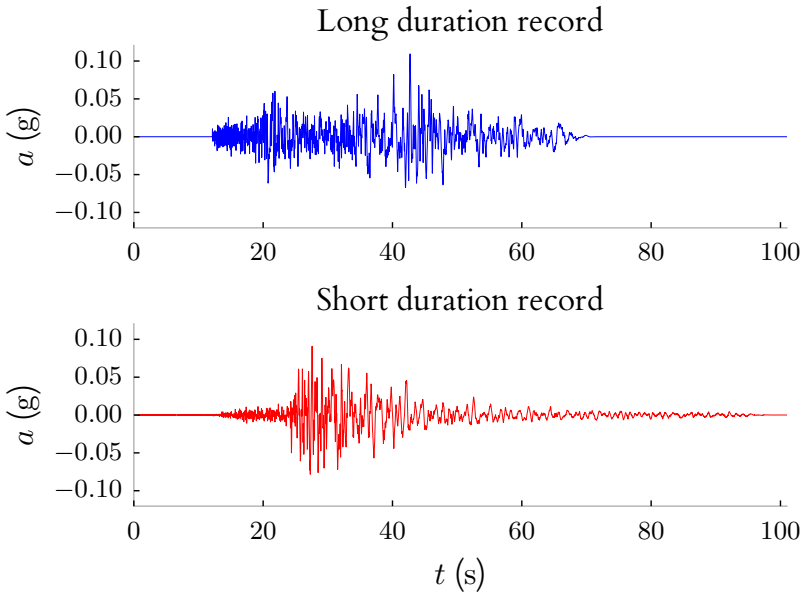




Spectrally equivalent record pair #22

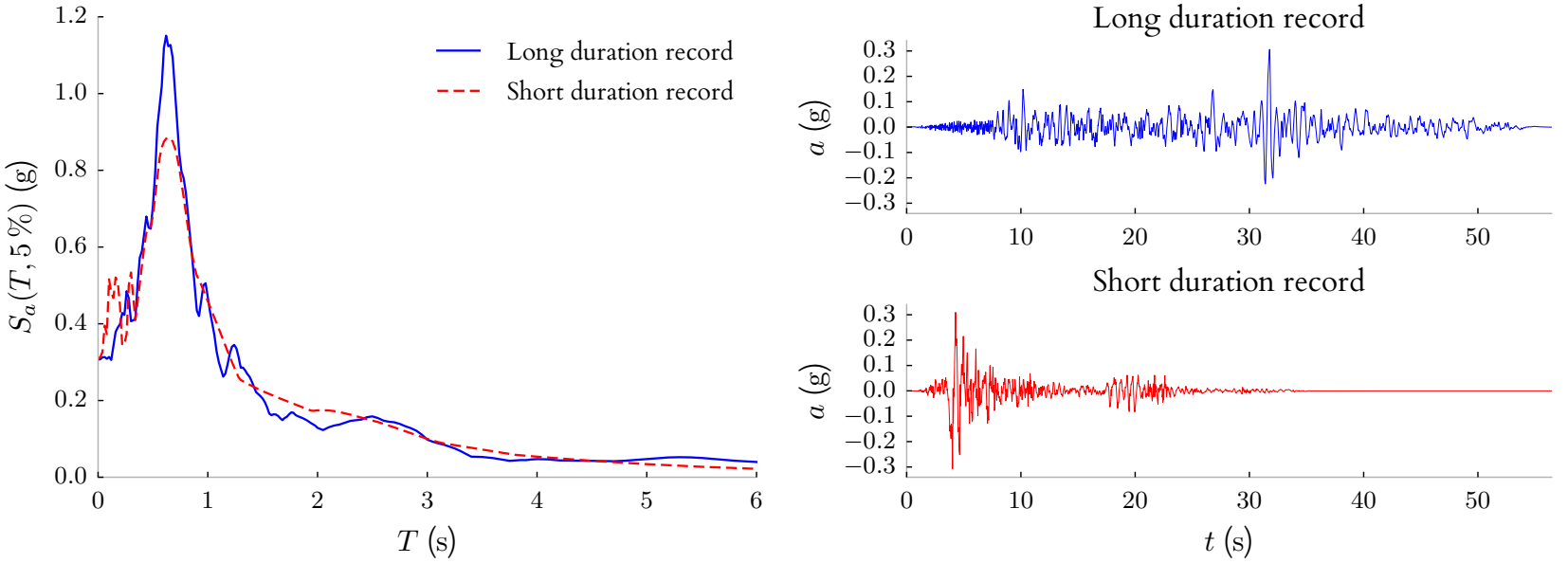
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1992 Landers	Indio - Coachella Canal	LANDERS/IND090.AT2	–	25
1999 Chi-Chi, Taiwan-06	CHY100	CHICHI.06/CHY100W.AT2	1.62	12





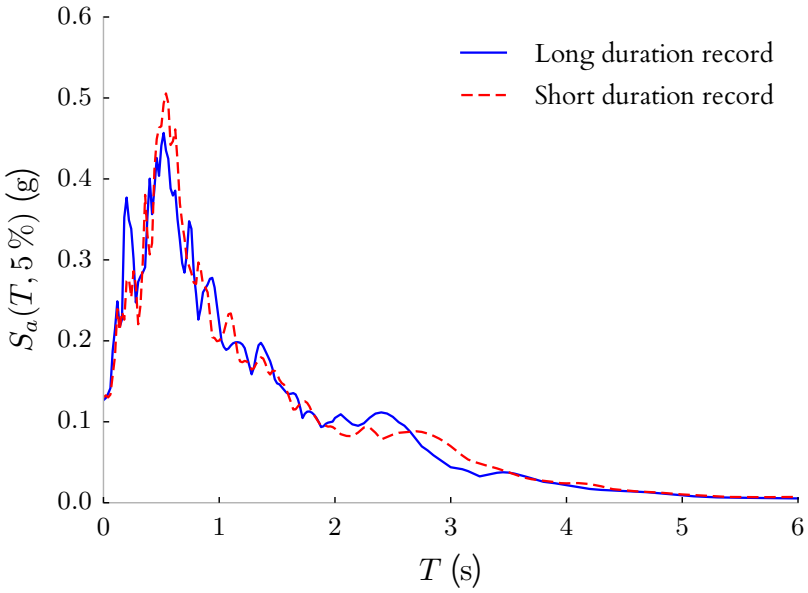
Spectrally equivalent record pair #23

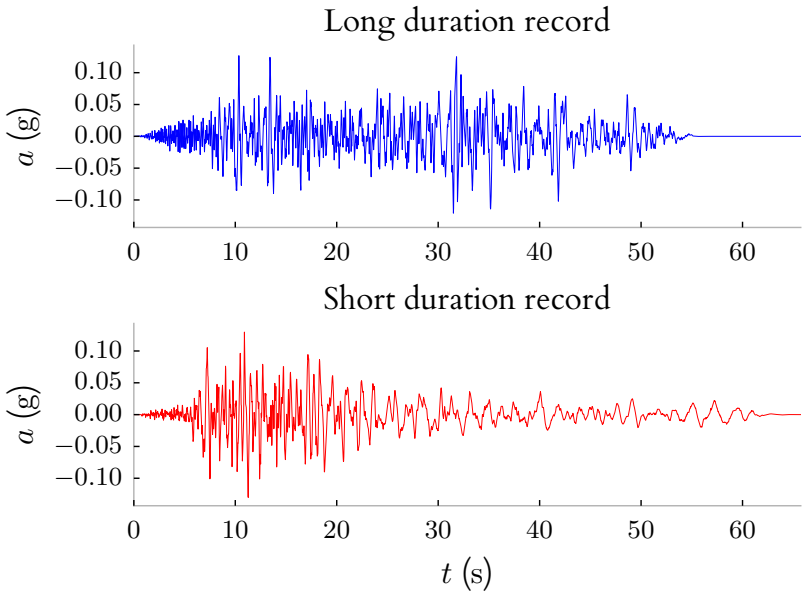
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1992 Landers	Indio - Jackson Road	LANDERS/INJ090.AT2	–	22
1992 Cape Mendocino	Petrolia	CAPEMEND/PET090.AT2	0.47	3



Spectrally equivalent record pair #24

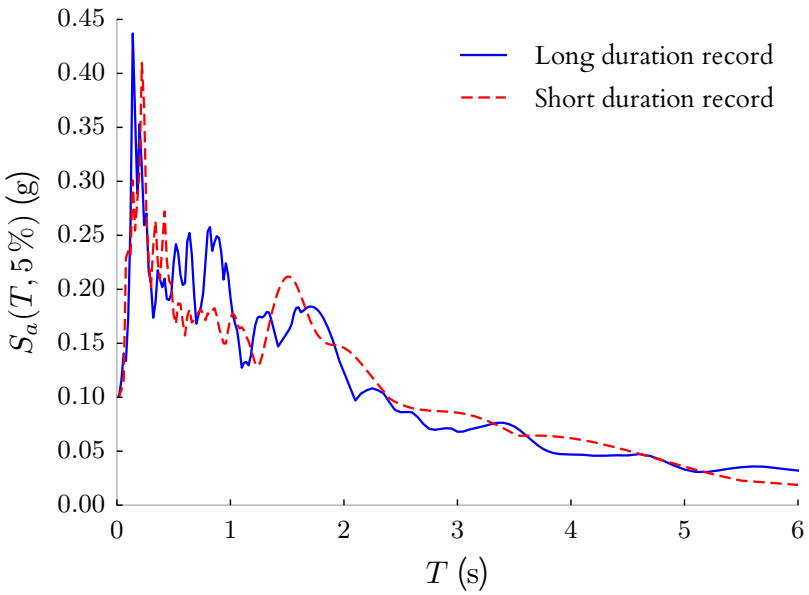
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1992 Landers	Indio - Jackson Road	LANDERS/INJ180.AT2	–	26
1994 Northridge-01	Camarillo	NORTHR/CMR180.AT2	1.04	14

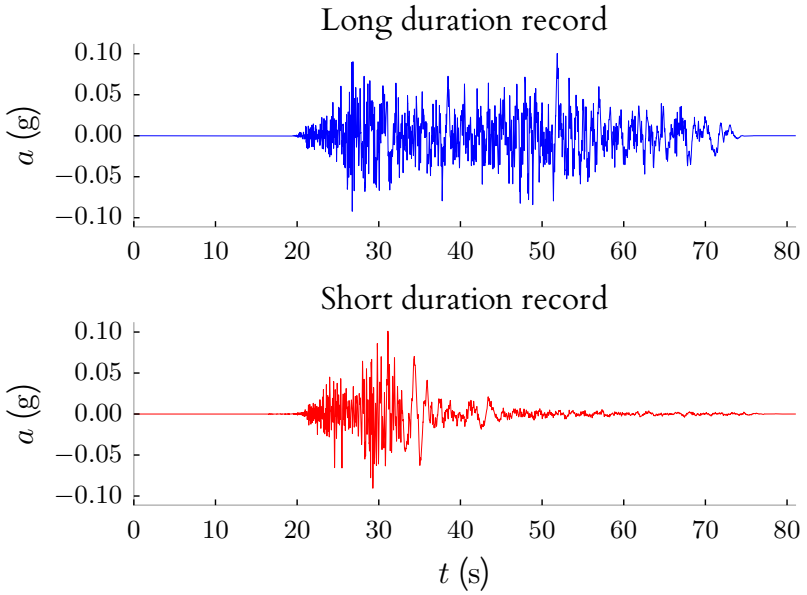




Spectrally equivalent record pair #25

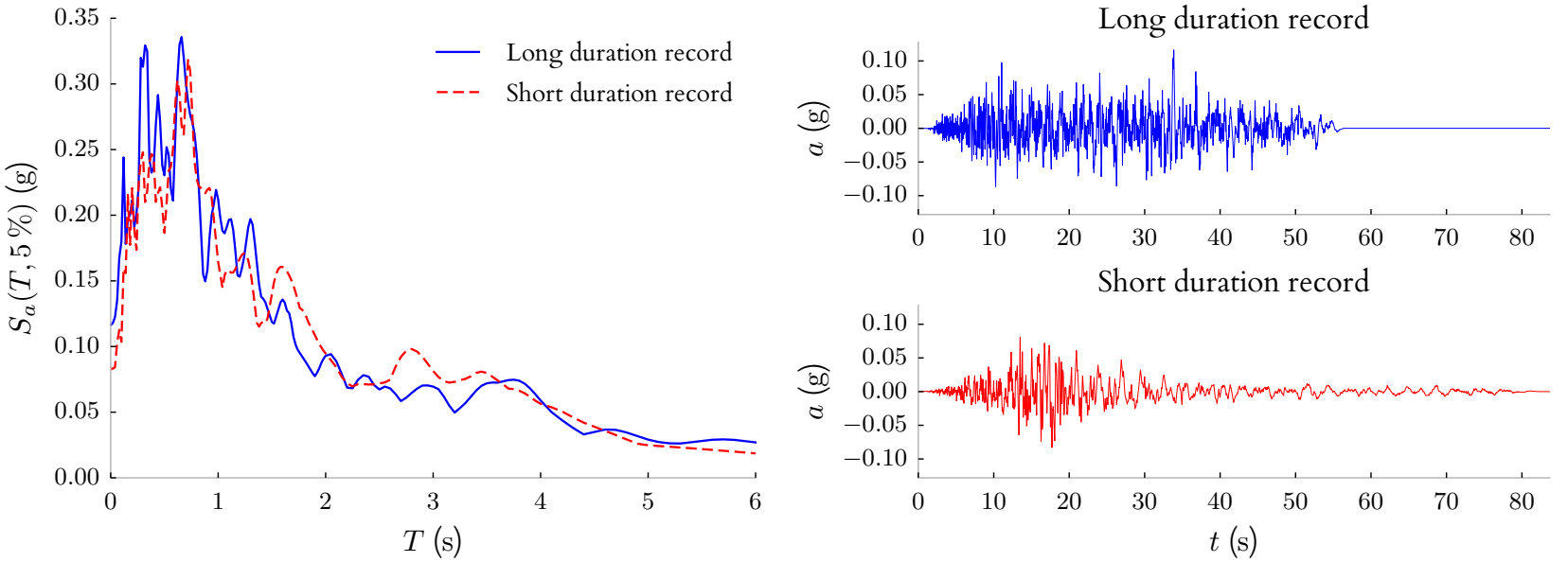
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1992 Landers	Thousand Palms Post Office	LANDERS/TPP045.AT2	–	26
1999 Chi-Chi, Taiwan-06	CHY024	CHICHI.06/CHY024E.AT2	0.77	10





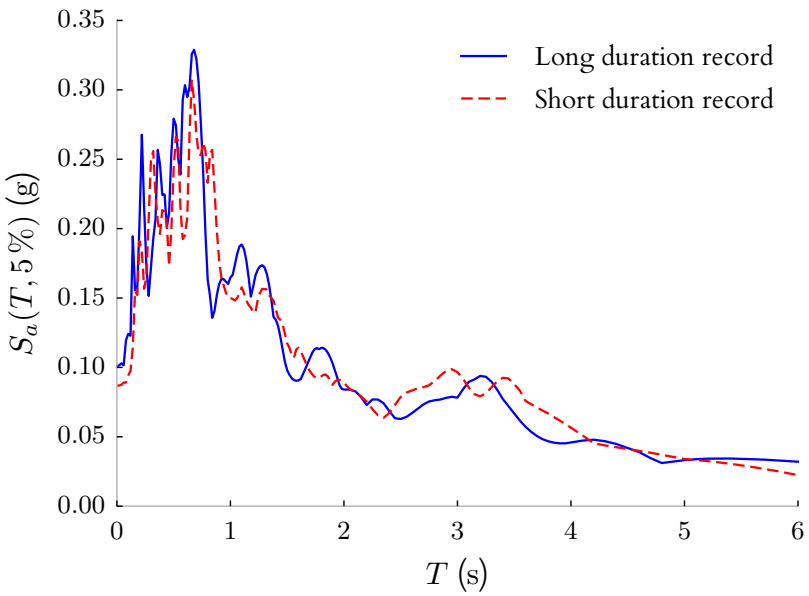
Spectrally equivalent record pair #26

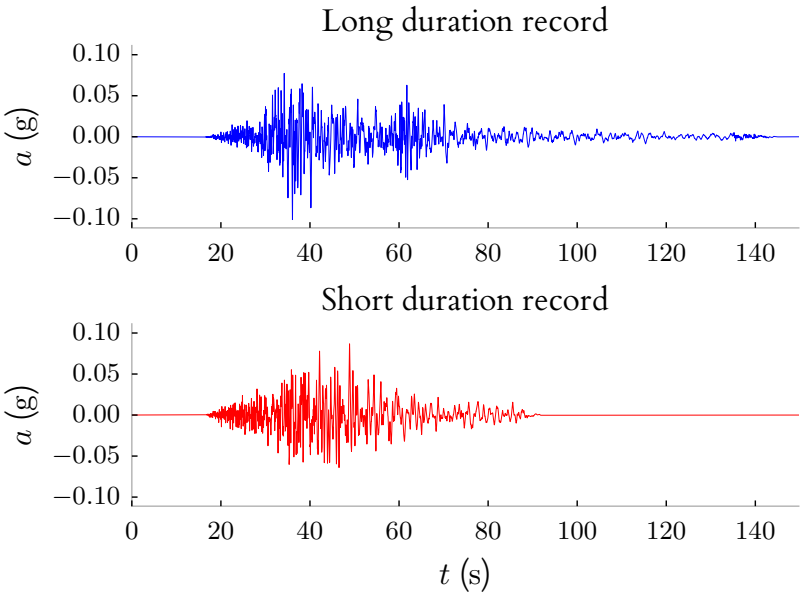
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1992 Landers	Thousand Palms Post Office	LANDERS/TPP135.AT2	–	25
1986 Taiwan SMART1(45)	SMART1 I11	SMART1.45/45I11EW.AT2	0.75	11



Spectrally equivalent record pair #27

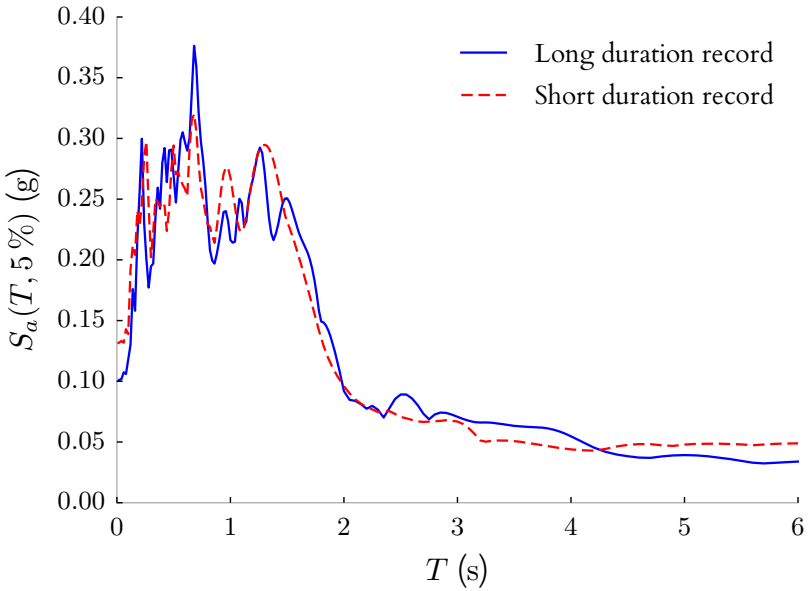
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1999 Kocaeli, Turkey	Bursa Tofas	KOCAELI/BUR000.AT2	–	26
1999 Chi-Chi, Taiwan-04	KAU085	CHICHI.04/KAU085W.AT2	4.41	20

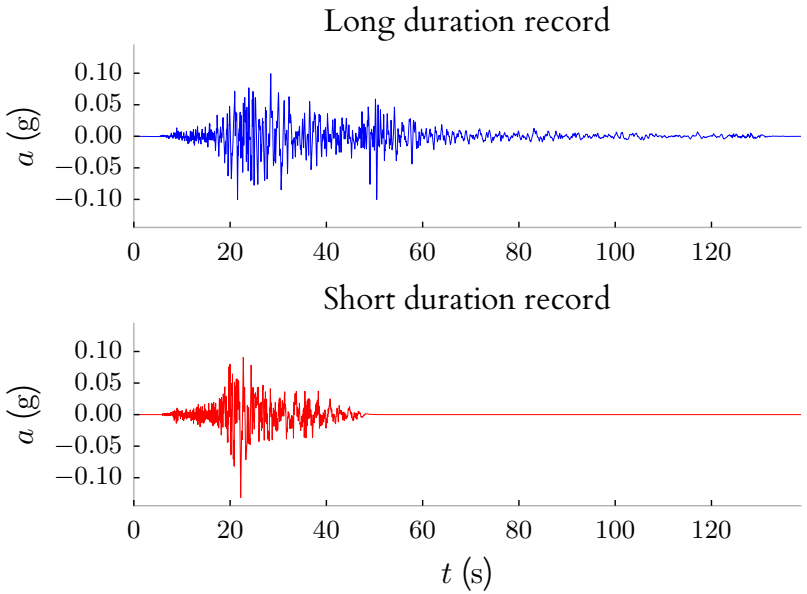




Spectrally equivalent record pair #28

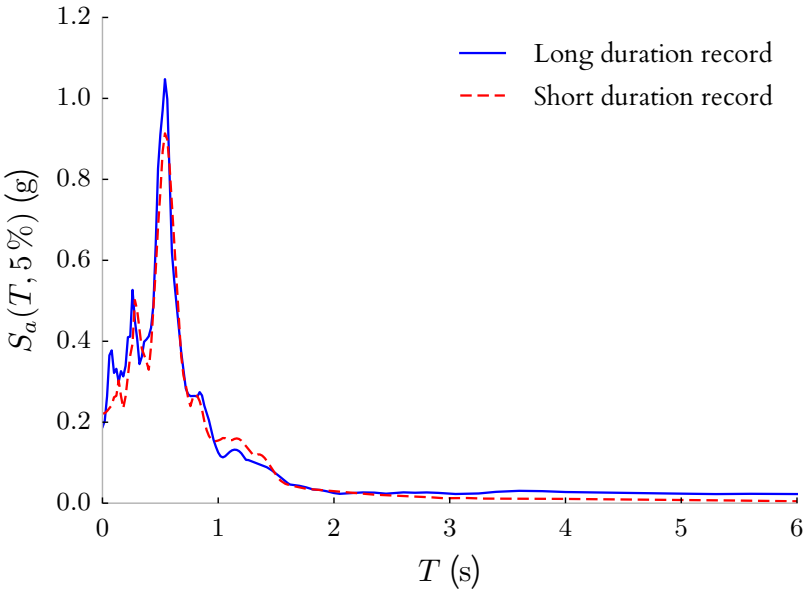
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1999 Kocaeli, Turkey	Bursa Tofas	KOCAELI/BUR090.AT2	–	22
1992 Landers	Yermo Fire Station	LANDERS/YER270.AT2	0.54	7

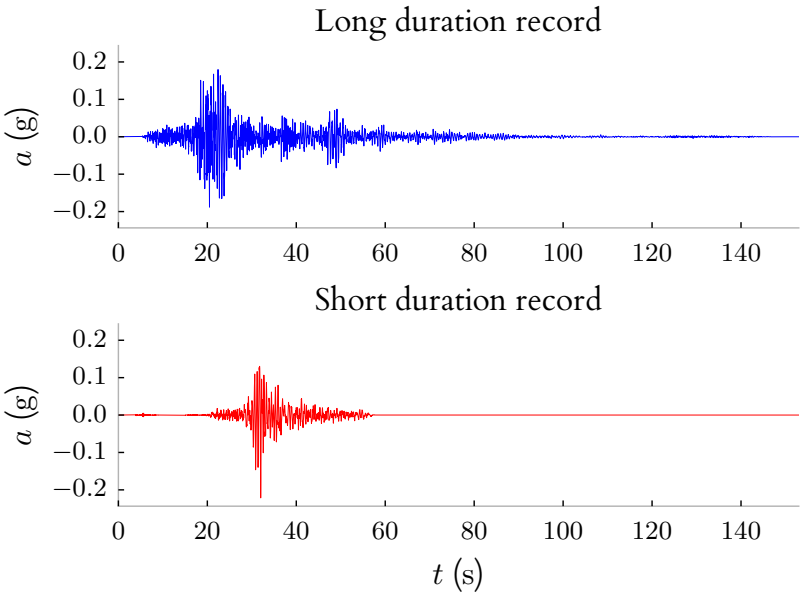




Spectrally equivalent record pair #29

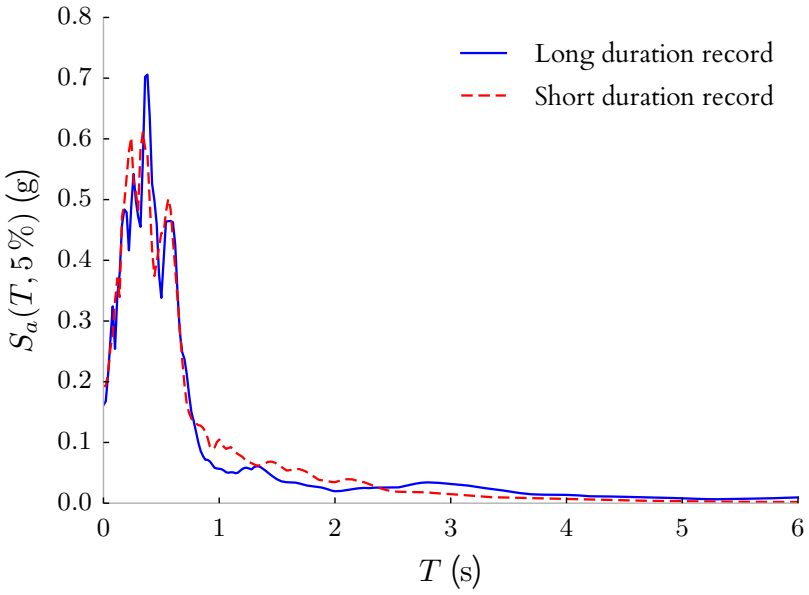
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1999 Kocaeli, Turkey	Fatih	KOCAELI/FAT000.AT2	–	10
1999 Chi-Chi, Taiwan-06	HWA025	CHICHI.06/HWA025N.AT2	5.00	3

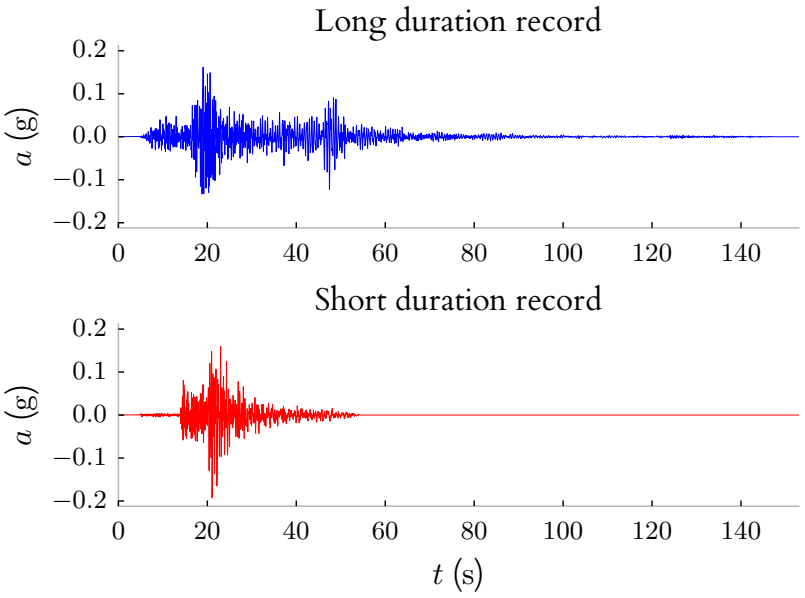




Spectrally equivalent record pair #30

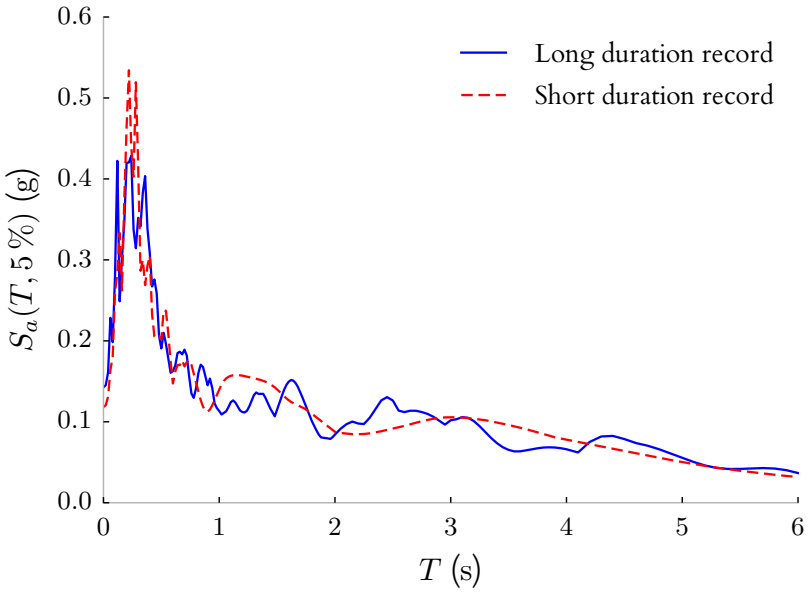
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
1999 Kocaeli, Turkey	Fatih	KOCAELI/FAT090.AT2	–	28
1999 Chi-Chi, Taiwan-02	HWA059	CHICHI.02/HWA059E.AT2	4.74	8

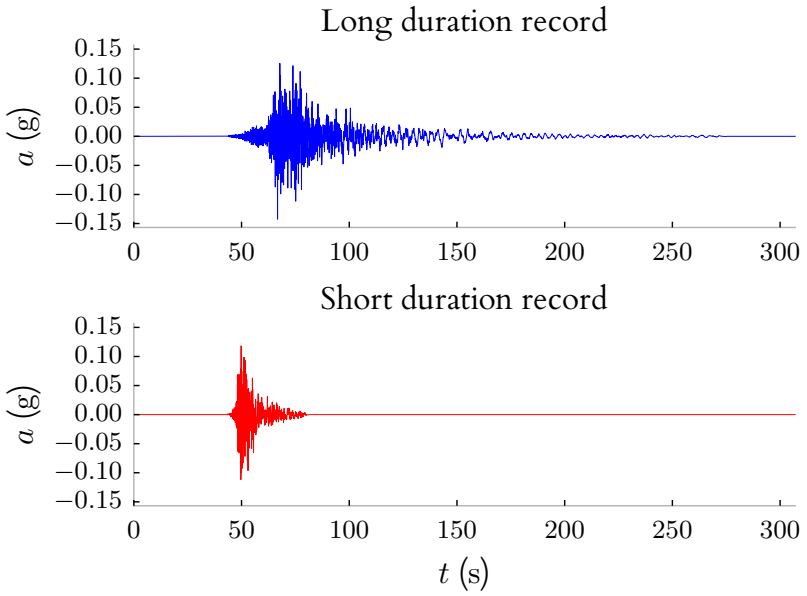




Spectrally equivalent record pair #31

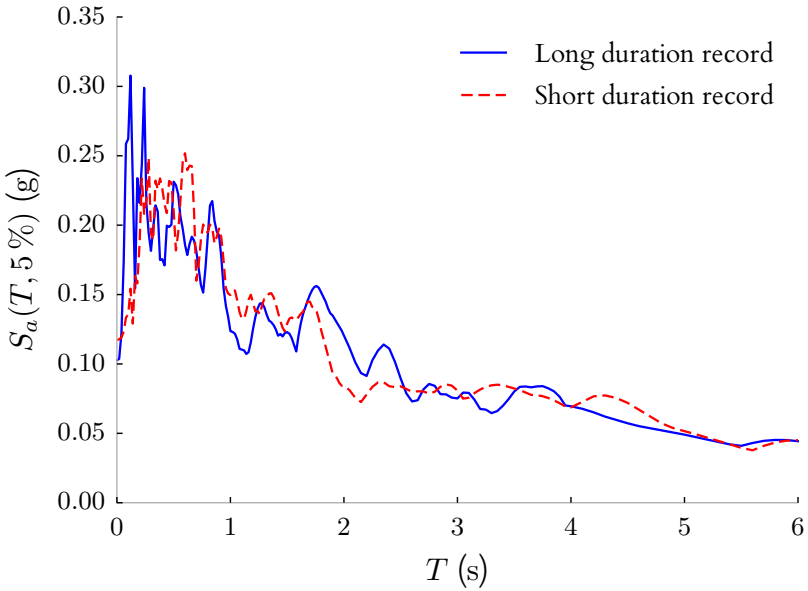
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Shihoro	HKD0940309260450_H1.th	–	21
1979 Imperial Valley-06	Holtville Post Office	IMPVALL.H/H-HVP315.AT2	0.53	5

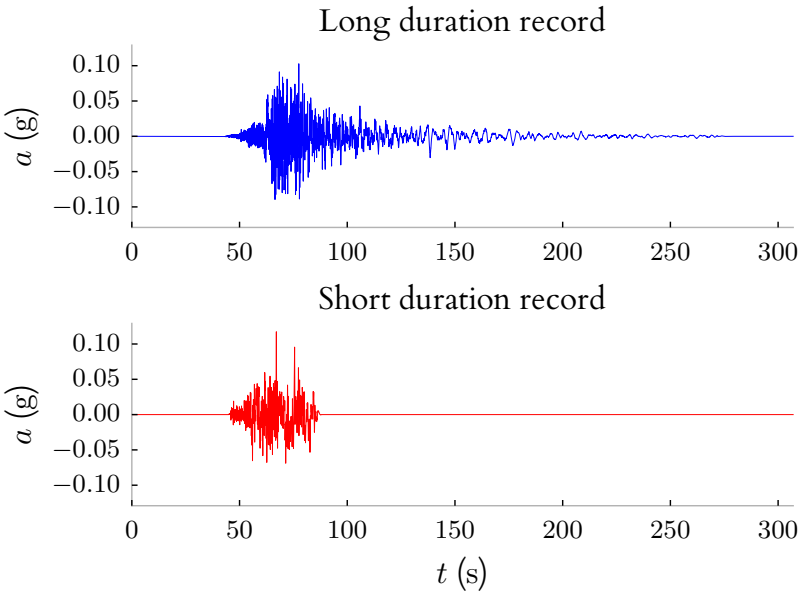




Spectrally equivalent record pair #32

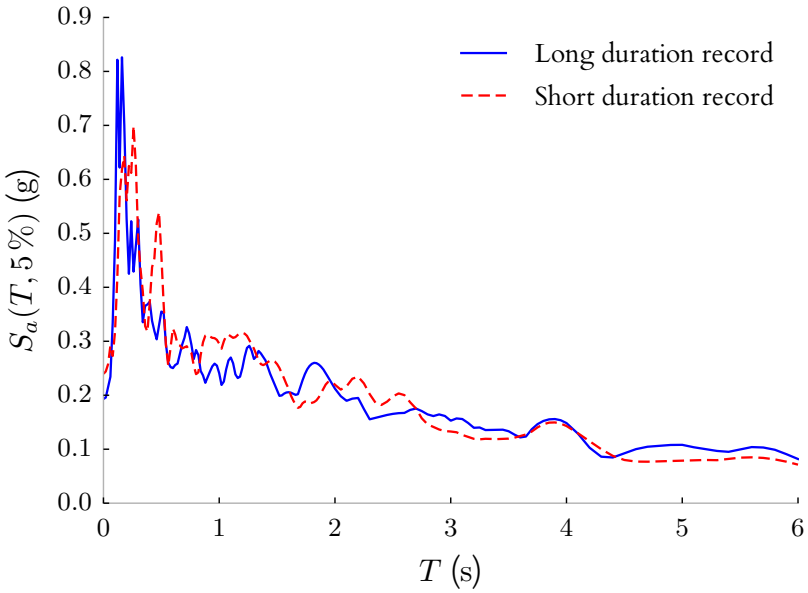
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Shihoro	HKD0940309260450_H2.th	–	27
1992 Landers	LA - S Grand Ave	LANDERS/GR2180.AT2	2.51	20

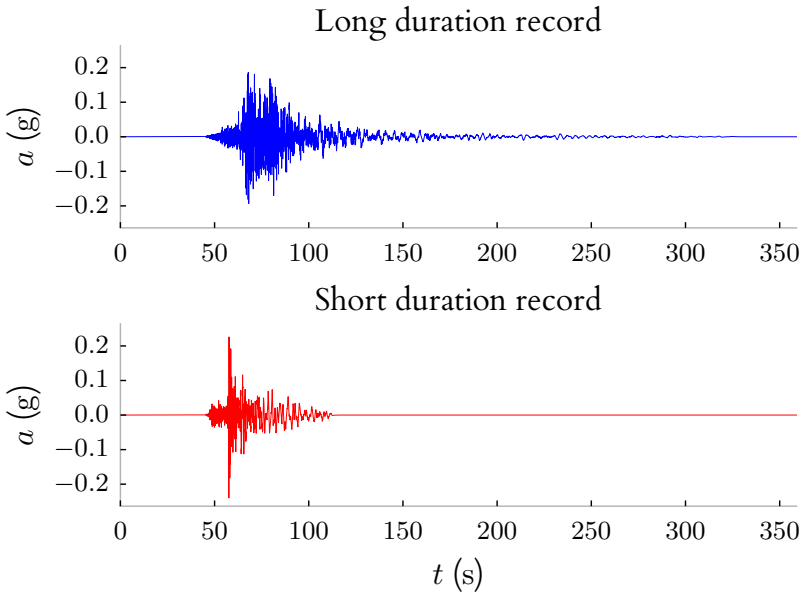




Spectrally equivalent record pair #33

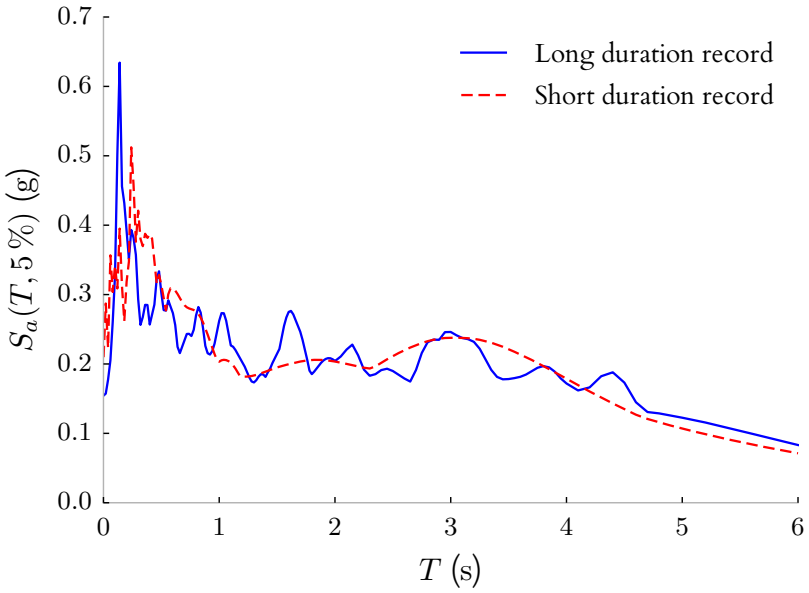
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Obihiro	HKD0950309260450_H1.th	–	20
1999 Chi-Chi, Taiwan-06	CHY032	CHICHI.06/CHY032E.AT2	2.38	21

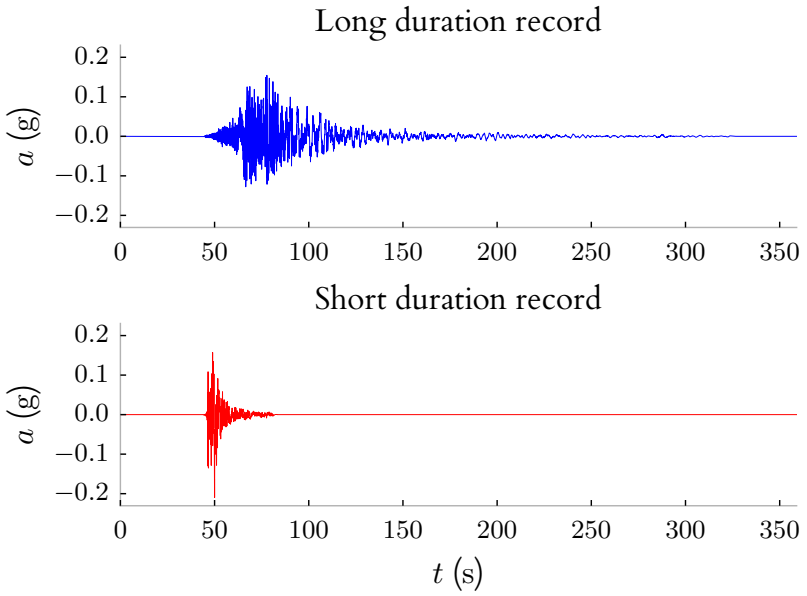




Spectrally equivalent record pair #34

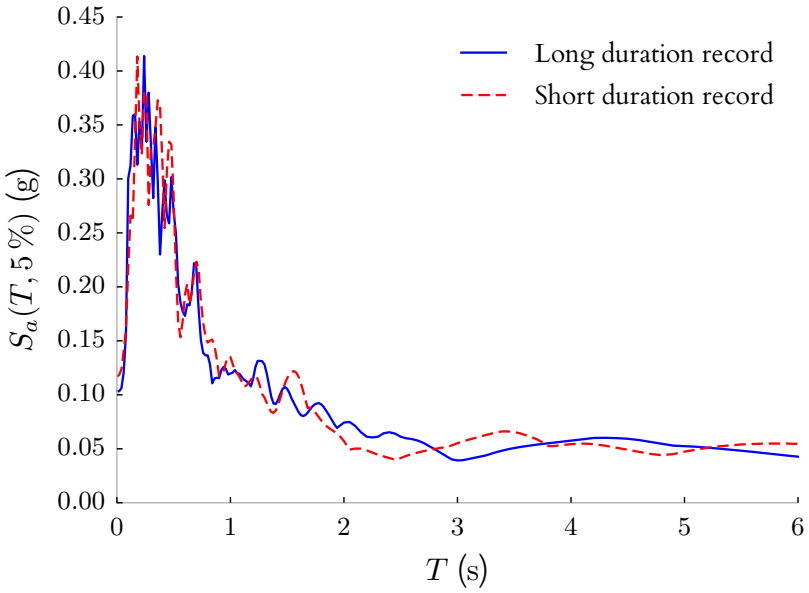
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Obihiro	HKD0950309260450_H2.th	–	28
1979 Imperial Valley-06	El Centro Array #6	IMPVALL.H/H-E06230.AT2	0.47	4

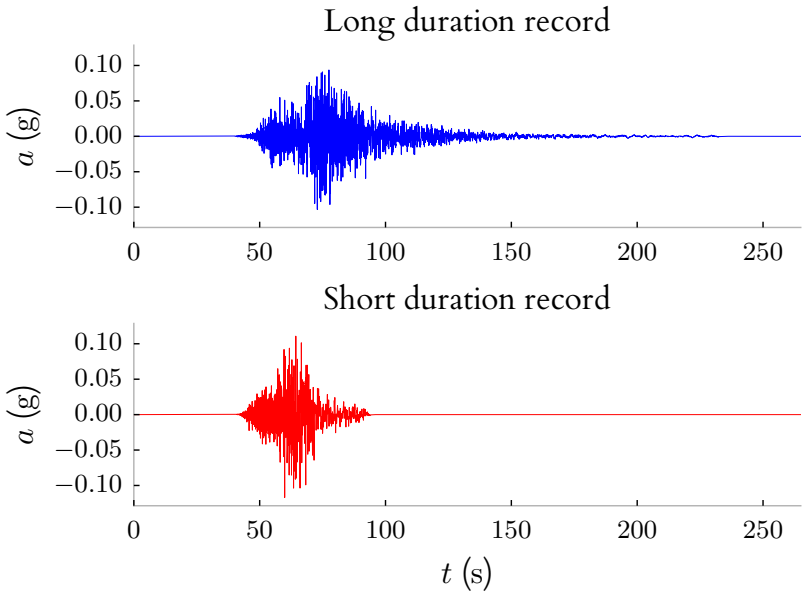




Spectrally equivalent record pair #35

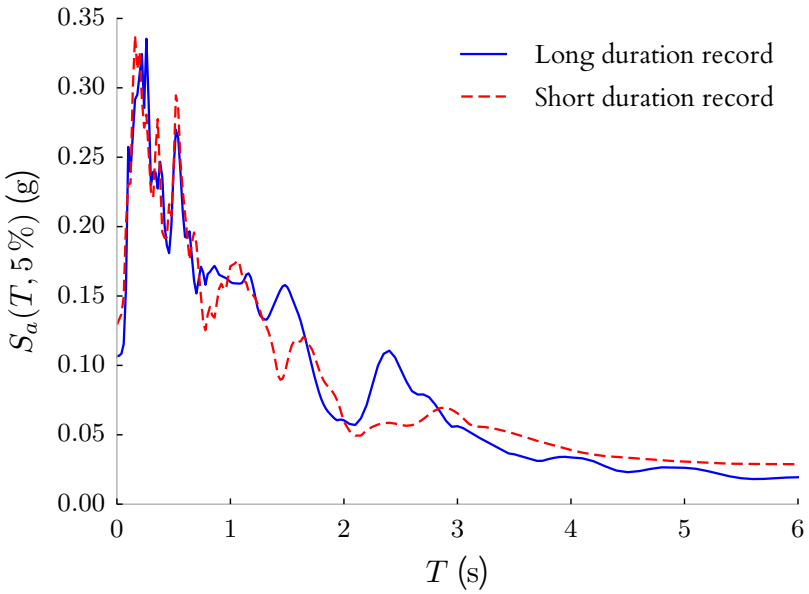
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Oiwake	HKD1270309260450_H1.th	–	24
1999 Hector Mine	Mill Creek Ranger Station	HECTOR/MCR270.AT2	2.46	15

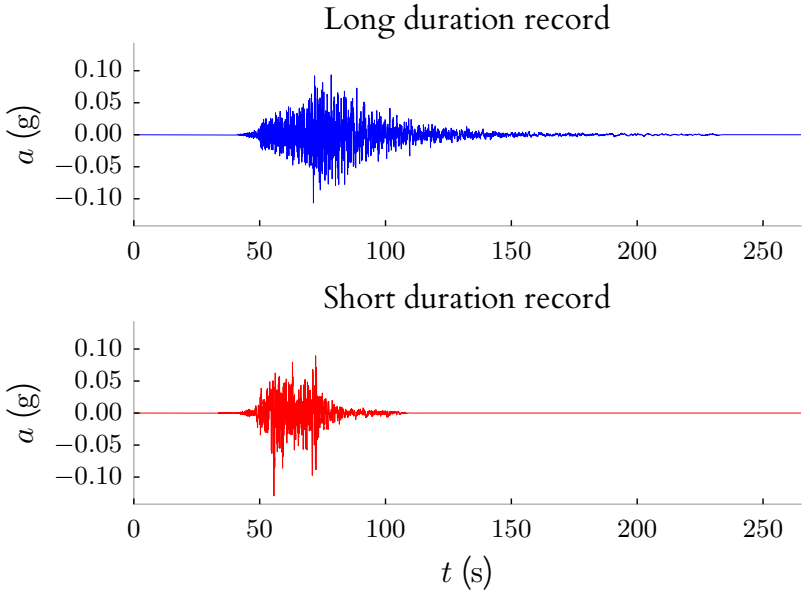




Spectrally equivalent record pair #36

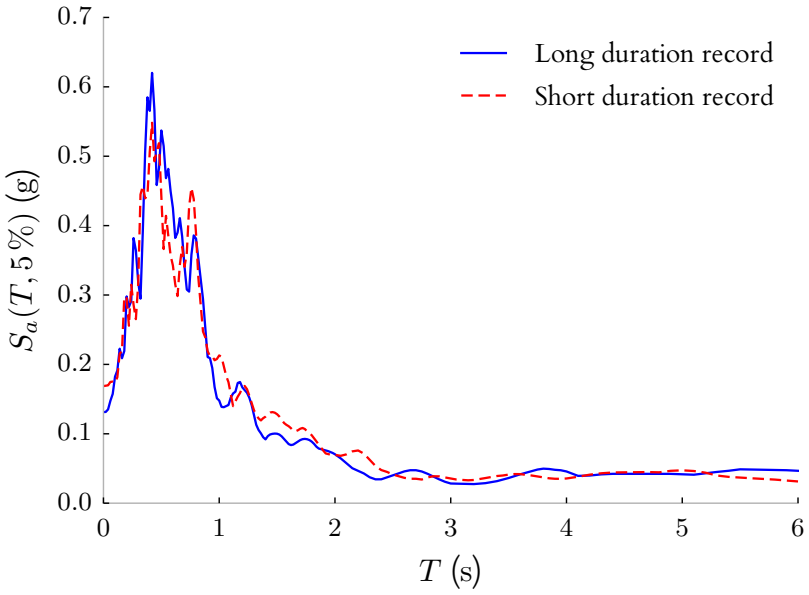
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Oiwake	HKD1270309260450_H2.th	–	26
1999 Chi-Chi, Taiwan	TCU049	CHICHI/TCU049-E.AT2	0.46	18

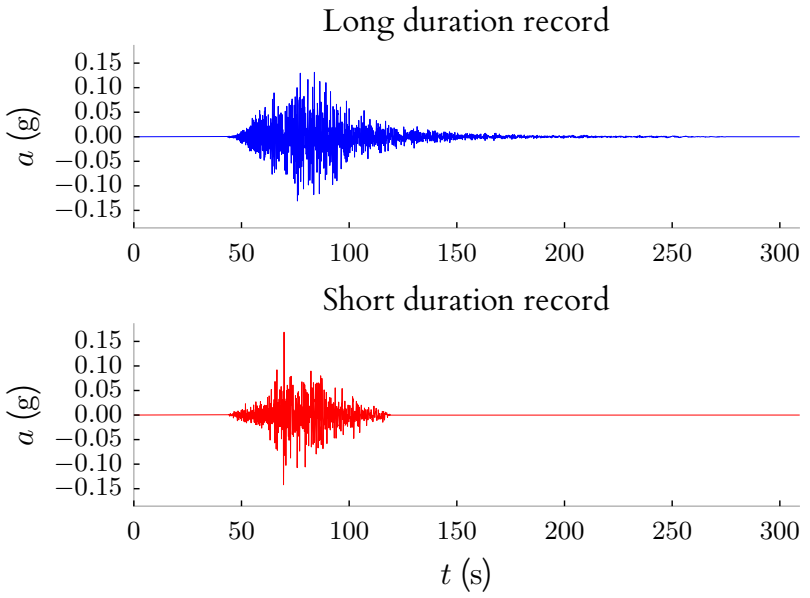




Spectrally equivalent record pair #37

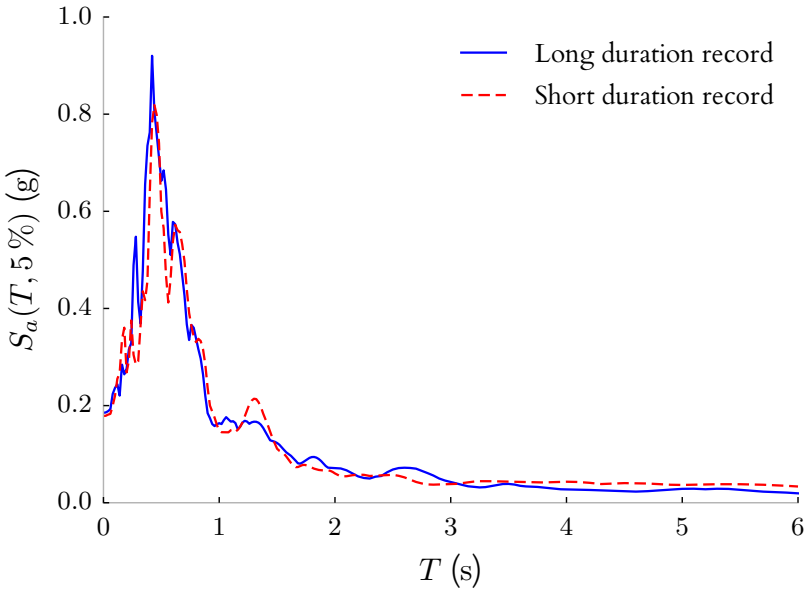
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Hayakita	HKD1280309260450_H1.th	–	28
1999 Chi-Chi, Taiwan	TTN026	CHICHI/TTN026-N.AT2	4.32	21

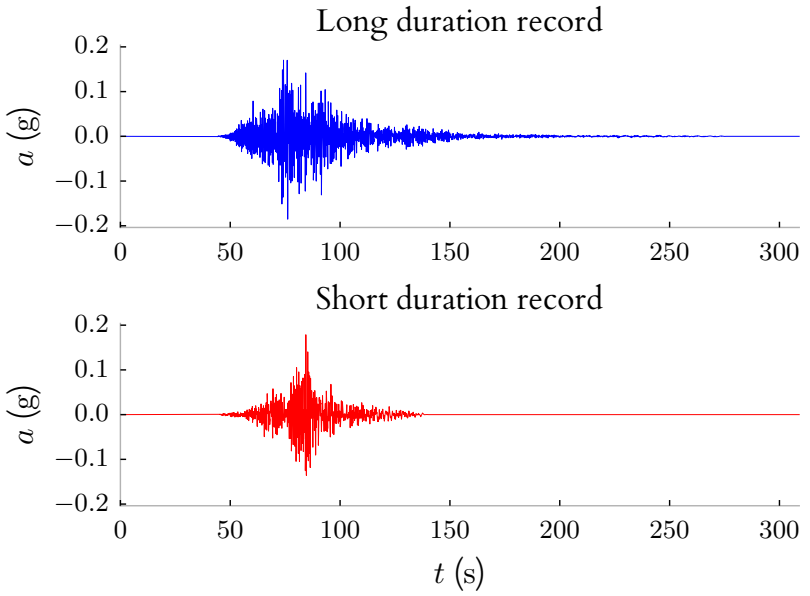




Spectrally equivalent record pair #38

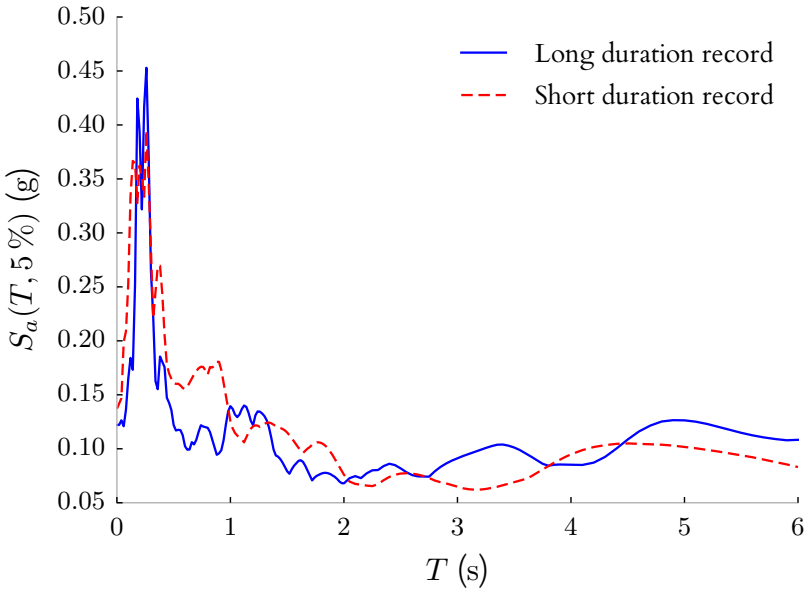
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Hayakita	HKD1280309260450_H2.th	–	25
2010 El Mayor-Cucapah	San Diego - 45th & Orange	SIERRA.MEX/03154-90.AT2	4.70	17

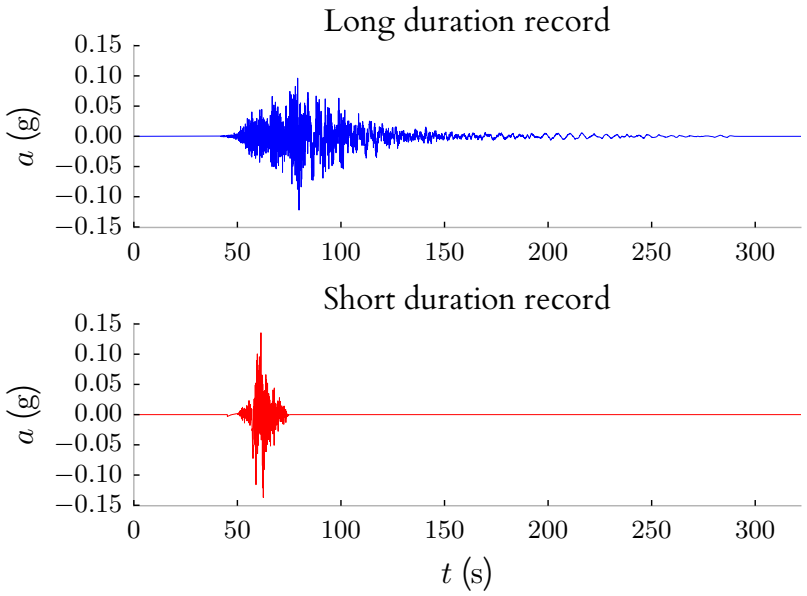




Spectrally equivalent record pair #39

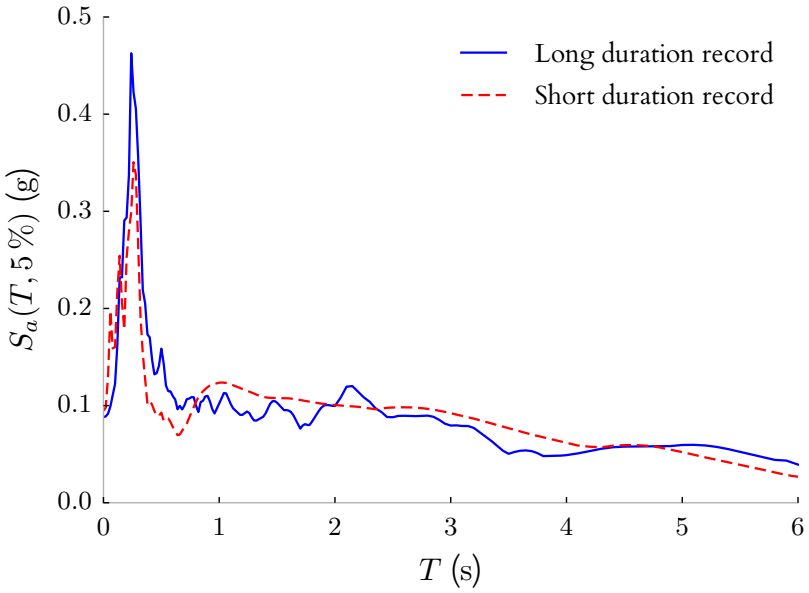
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Chitose	HKD1840309260450_H1.th	–	32
1999 Kocaeli, Turkey	Arcelik	KOCAELI/ARE090.AT2	1.02	5

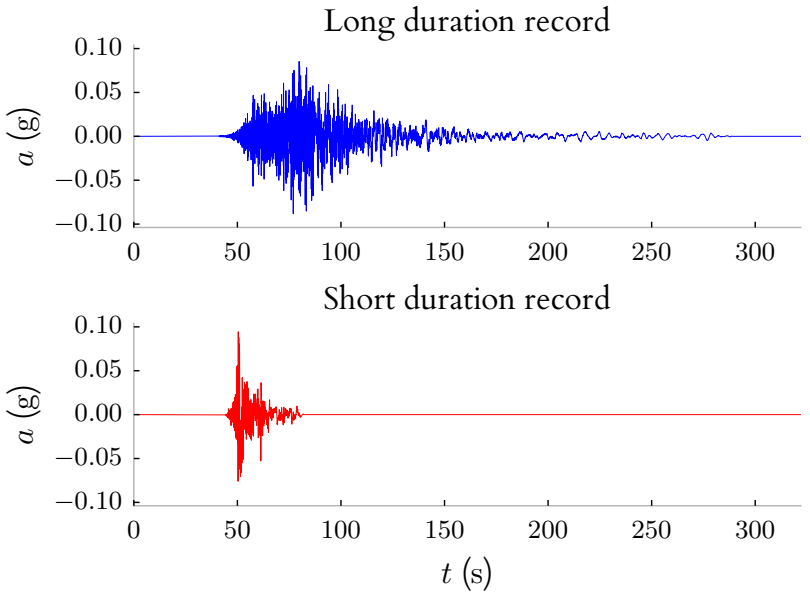




Spectrally equivalent record pair #40

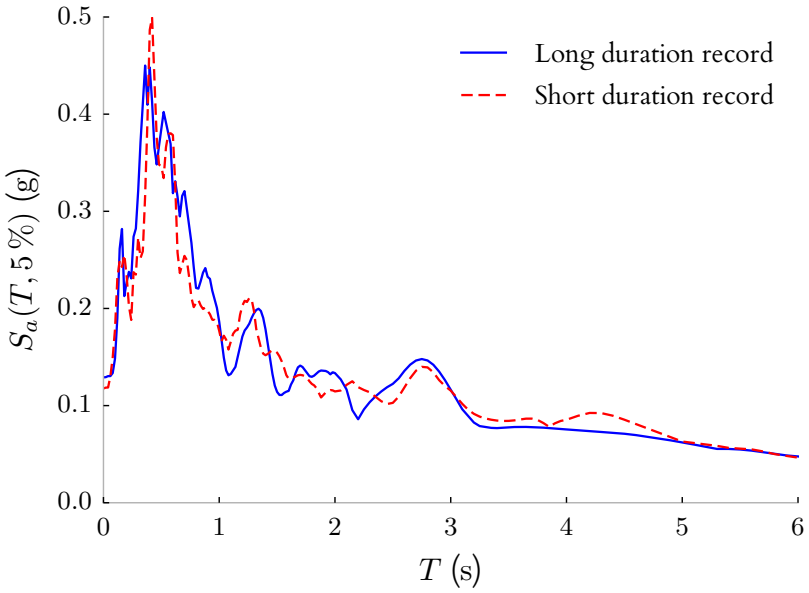
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Chitose	HKD1840309260450_H2.th	–	35
1979 Imperial Valley-06	Brawley Airport	IMPVALL.H/H-BRA225.AT2	0.58	5

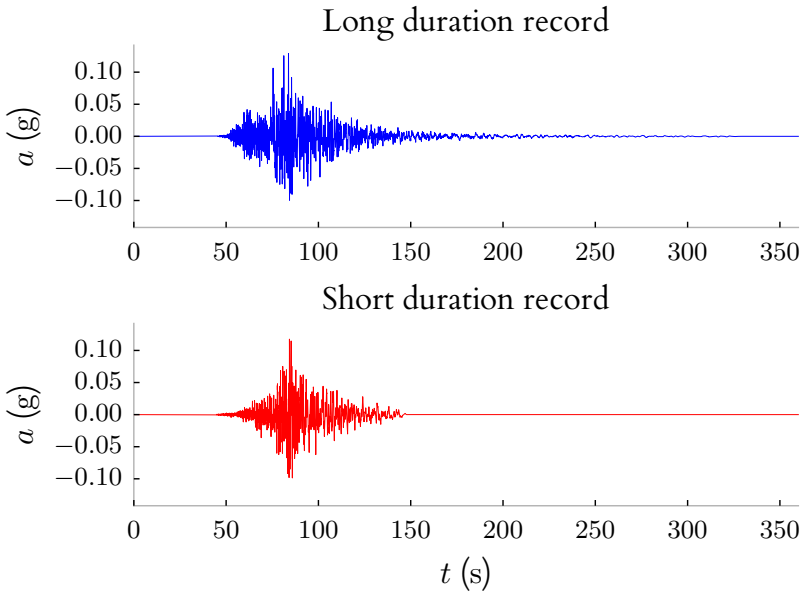




Spectrally equivalent record pair #41

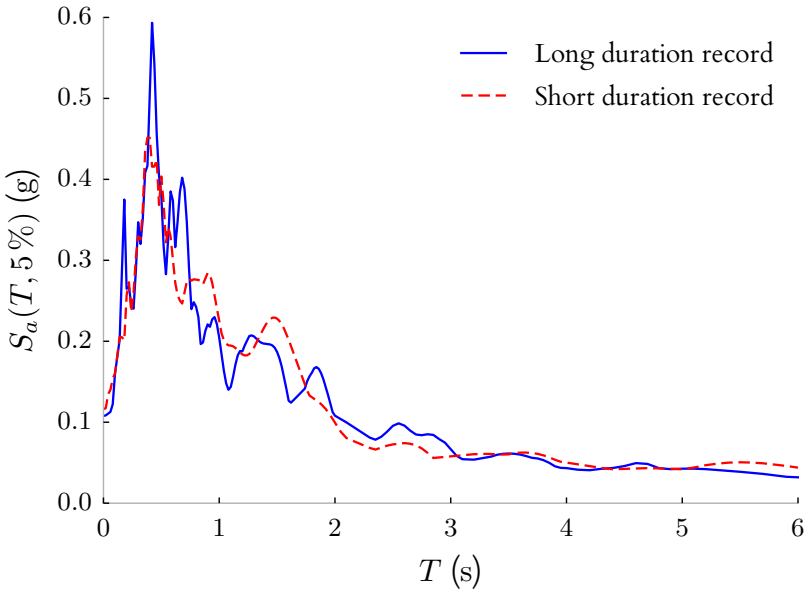
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Kuriyama	SRCH090309260450_H1.th	–	29
2010 El Mayor-Cucapah	San Diego - I5 & Laurel	SIERRA.MEX/03146324.AT2	3.50	21

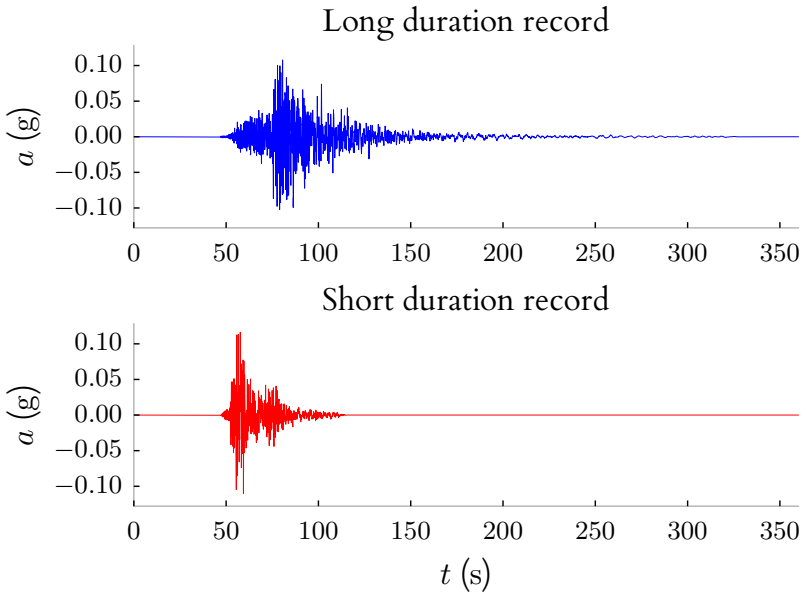




Spectrally equivalent record pair #42

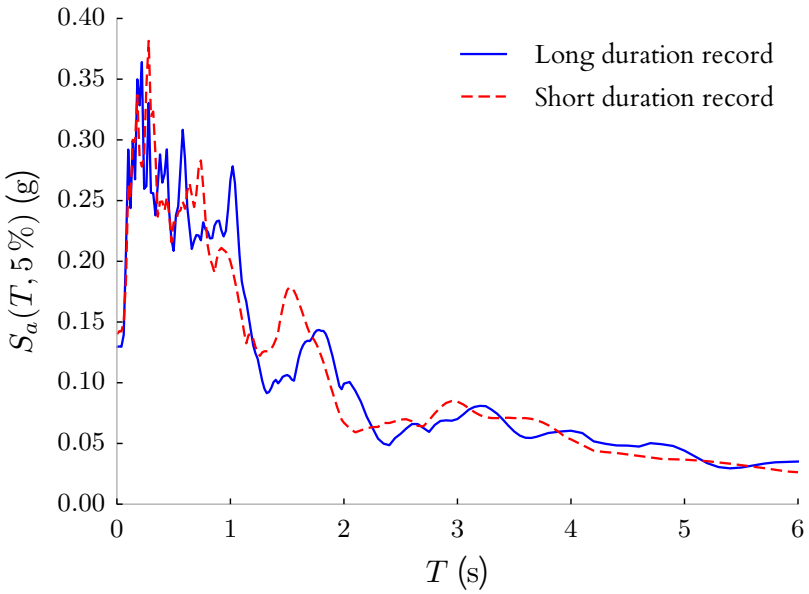
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2003 Hokkaido, Japan	Kuriyama	SRCH090309260450_H2.th	–	21
1999 Chi-Chi, Taiwan	TCU067	CHICHI/TCU067-N.AT2	0.36	8

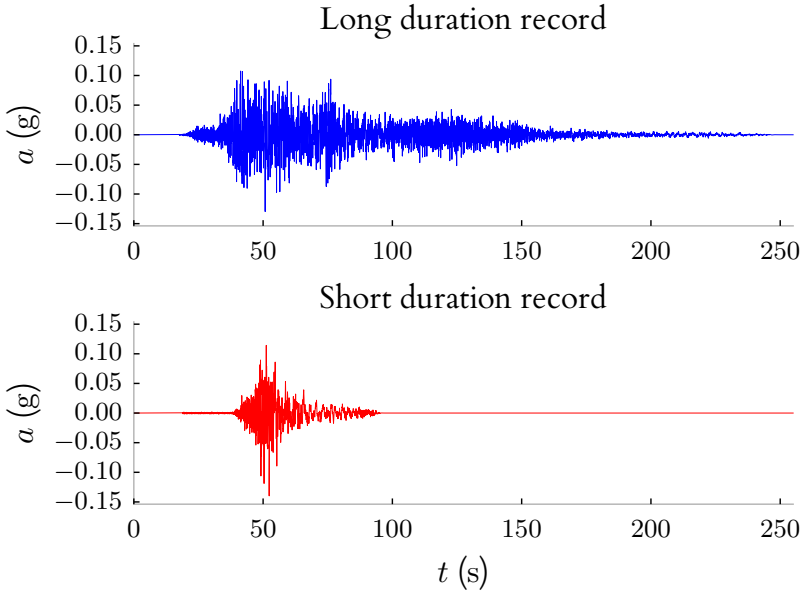




Spectrally equivalent record pair #43

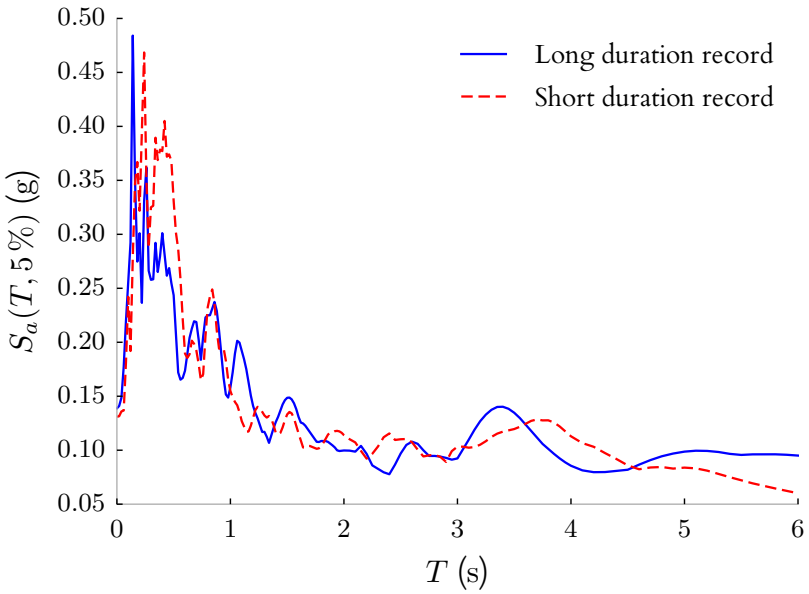
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Deyangbaima	WENCHUAN/UA0775.AT2	–	38
1999 Chi-Chi, Taiwan-04	CHY088	CHICHI.04/CHY088E.AT2	2.13	8

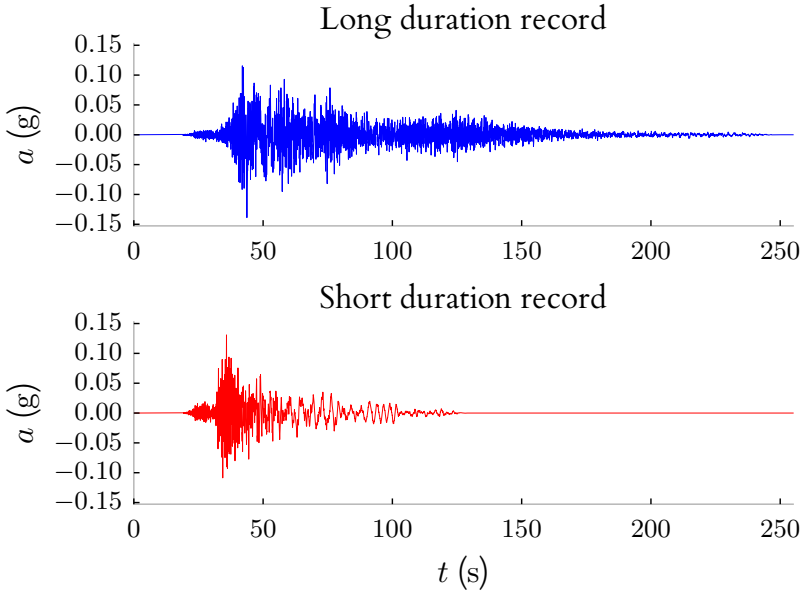




Spectrally equivalent record pair #44

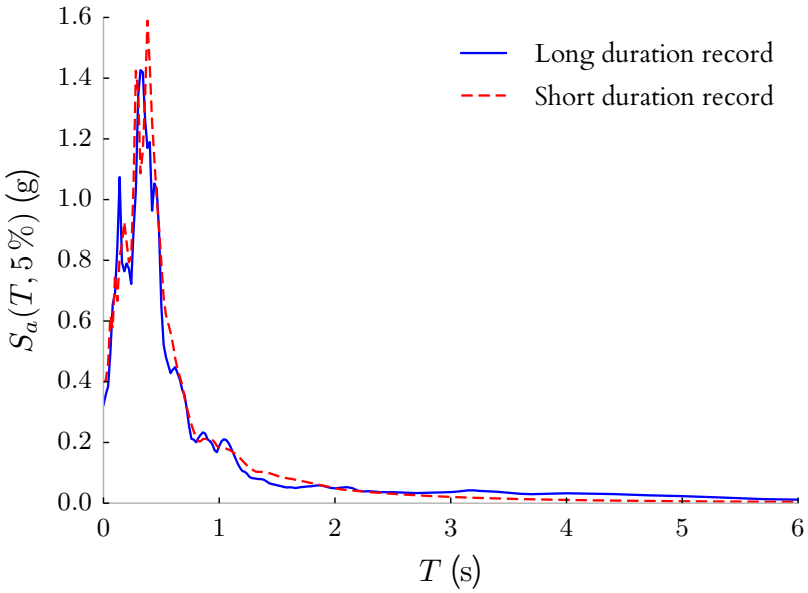
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Deyangbaima	WENCHUAN/UA0777.AT2	–	36
1999 Chi-Chi, Taiwan-04	CHY016	CHICHI.04/CHY016W.AT2	3.48	23

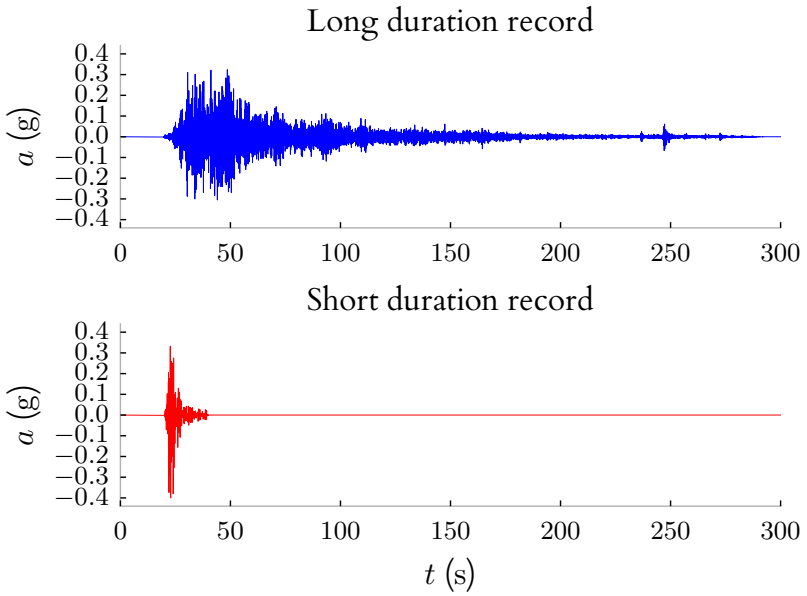




Spectrally equivalent record pair #45

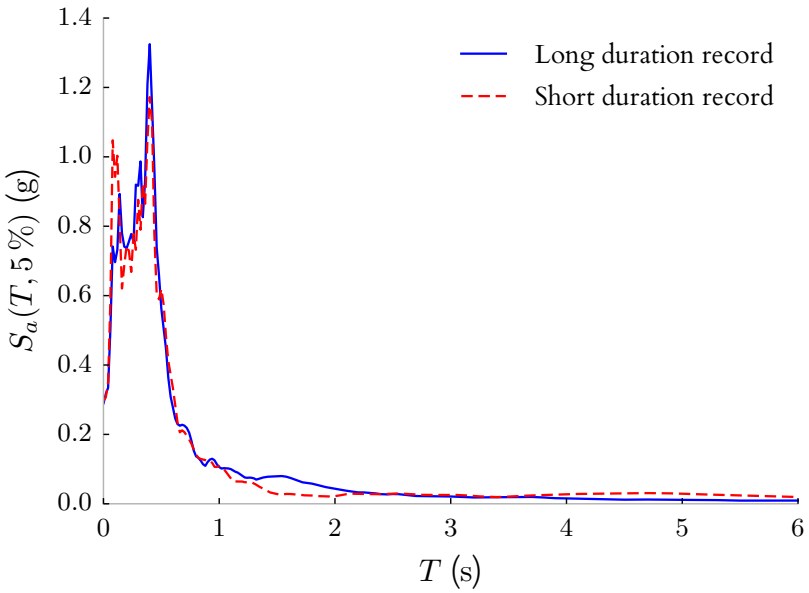
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Lixianmuka	WENCHUAN/UA0835.AT2	–	25
1983 Coalinga-04	Transmitter Hill	COALINGA/C-TSM270.AT2	2.09	2

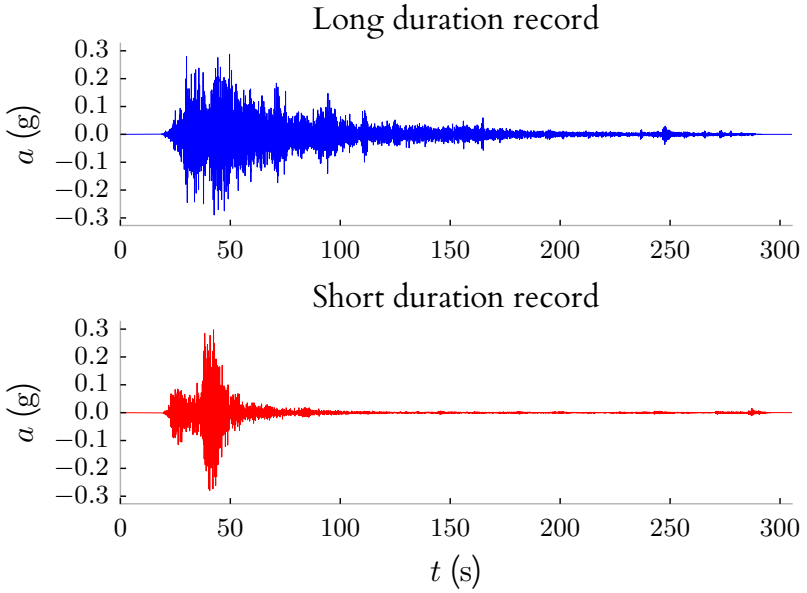




Spectrally equivalent record pair #46

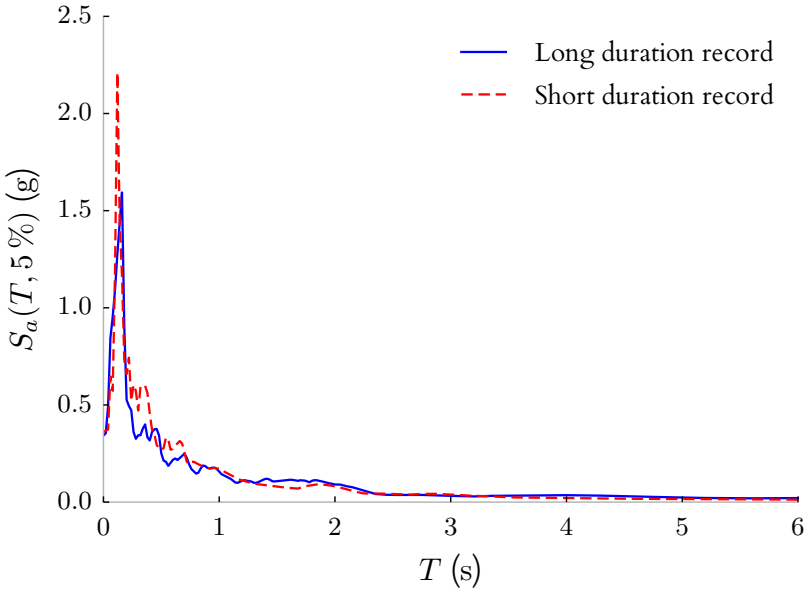
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Lixianmuka	WENCHUAN/UA0836.AT2	–	34
2000 Tottori, Japan	HRSH07	TOTTORI.1/HRSH07NS.AT2	3.99	16

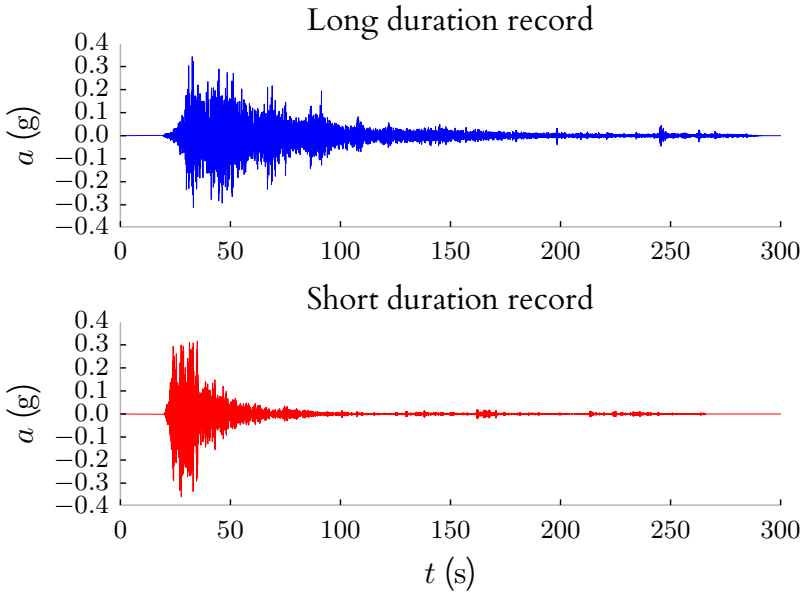




Spectrally equivalent record pair #47

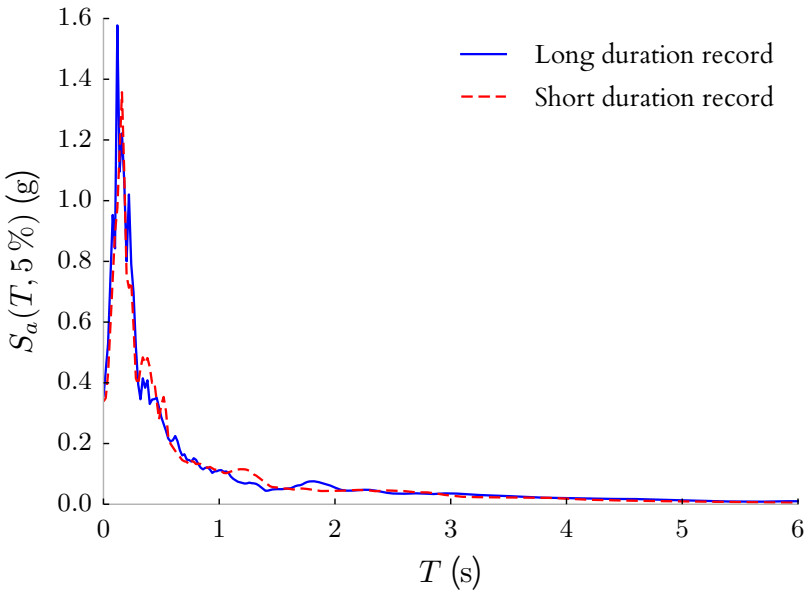
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Lixiantaoping	WENCHUAN/UA0841.AT2	–	34
2000 Tottori, Japan	OKYH09	TOTTORI/OKYH09NS.AT2	1	11

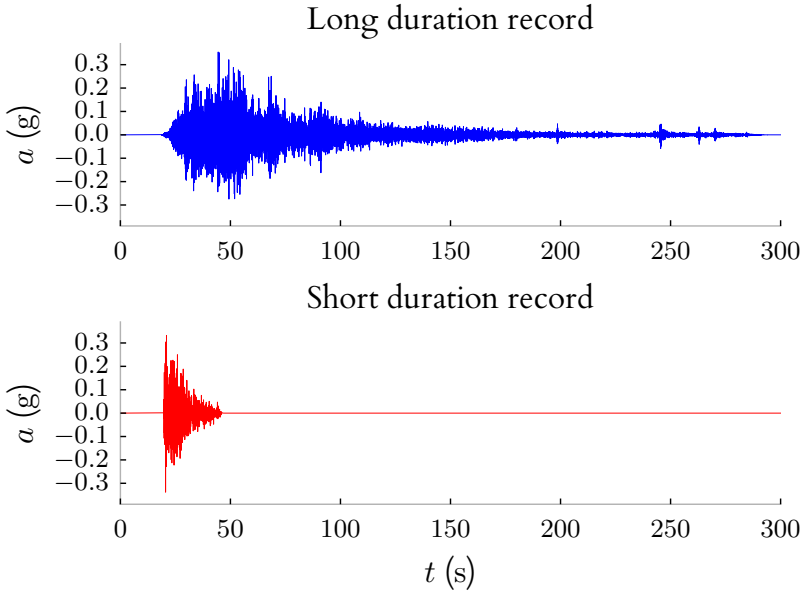




Spectrally equivalent record pair #48

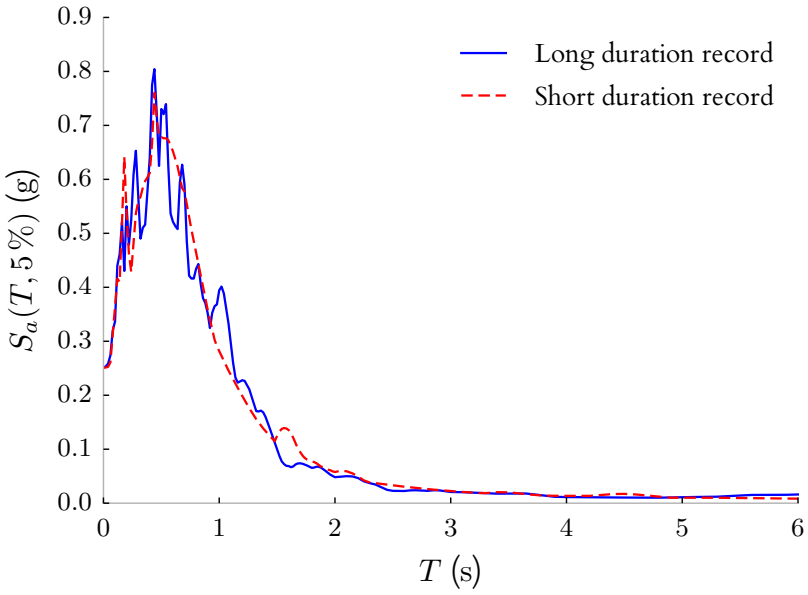
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Lixiantaoping	WENCHUAN/UA0842.AT2	–	36
1971 San Fernando	Pearblossom Pump	SFERN/PPP270.AT2	2.46	7

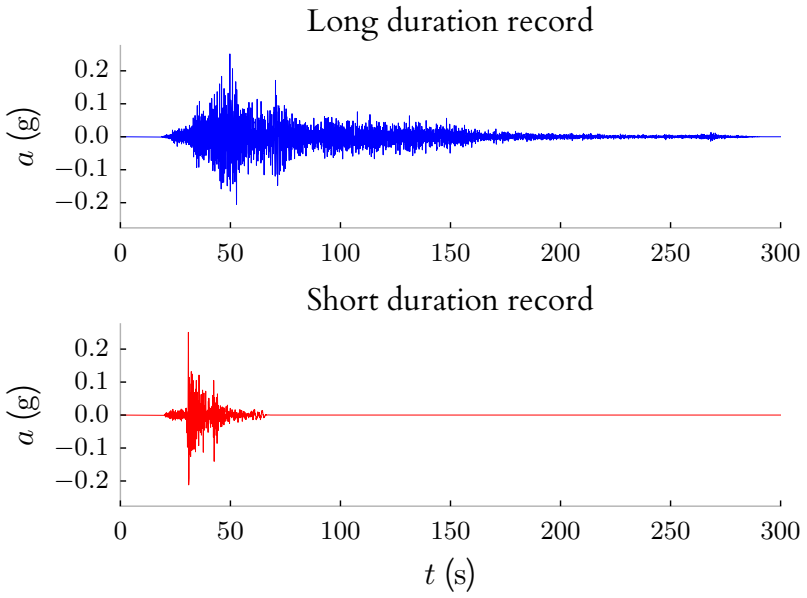




Spectrally equivalent record pair #49

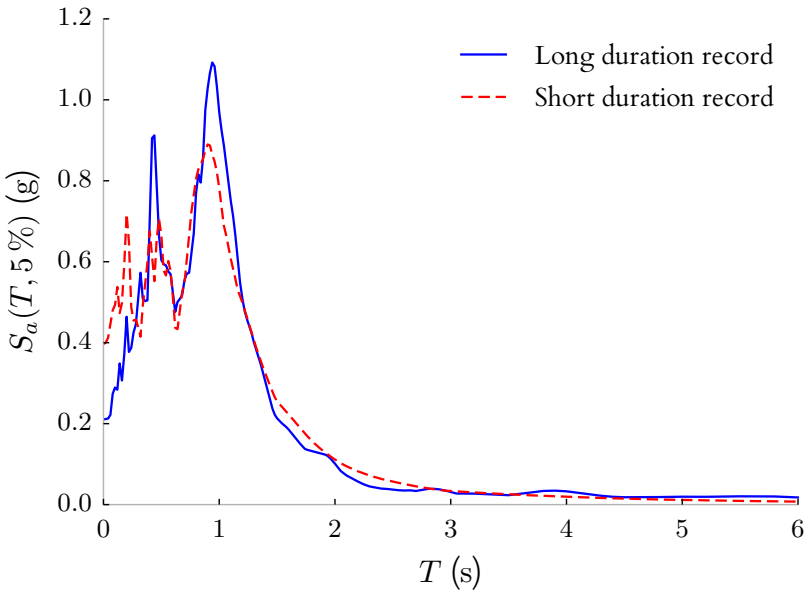
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Maoxiandiexi	WENCHUAN/UA0853.AT2	–	36
2008 Iwate	Wakabayashi-ku Sendai Tomizuka	IWATE/54081EW.AT2	1.25	7

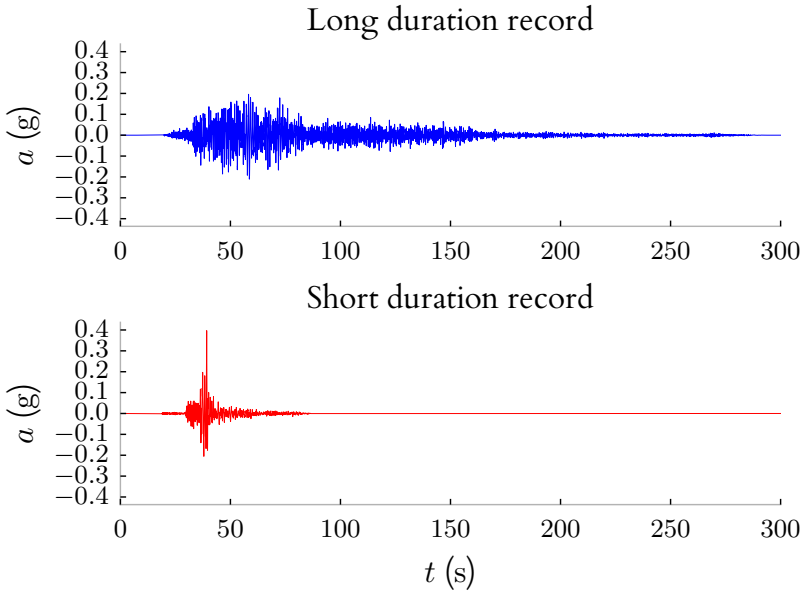




Spectrally equivalent record pair #50

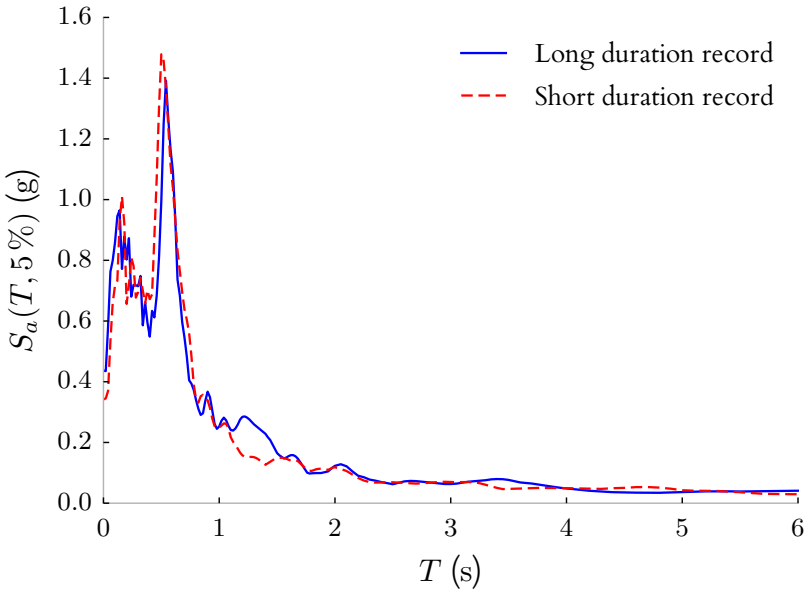
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Maoxiandiexi	WENCHUAN/UA0854.AT2	–	35
1999 Chi-Chi, Taiwan-02	TCU065	CHICHI.02/TCU065E.AT2	2.04	6

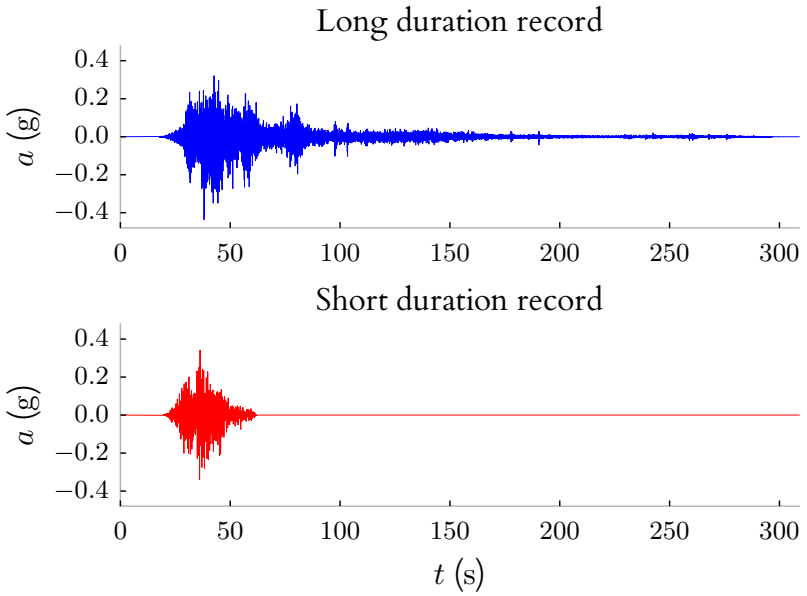




Spectrally equivalent record pair #51

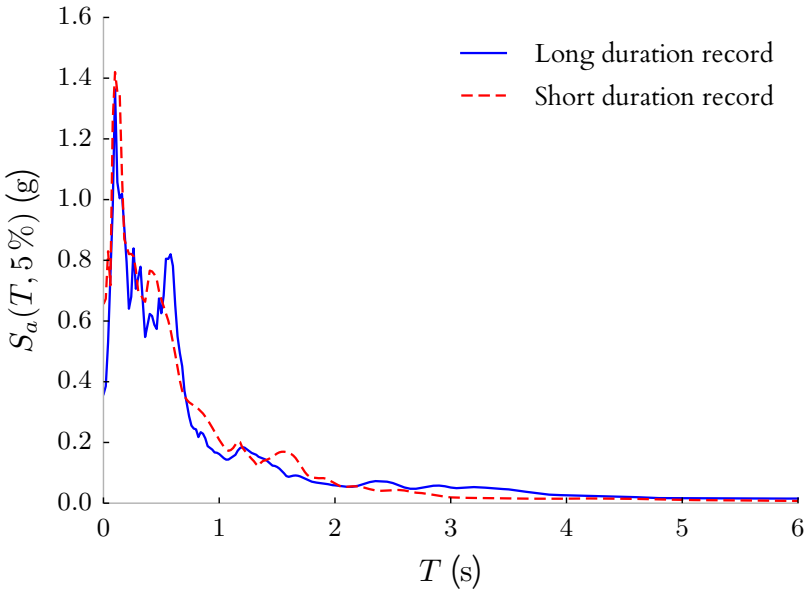
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Maoxiannanxin	WENCHUAN/UA0856.AT2	–	25
1999 Hector Mine	Fun Valley	HECTOR/FVR360.AT2	3.89	12

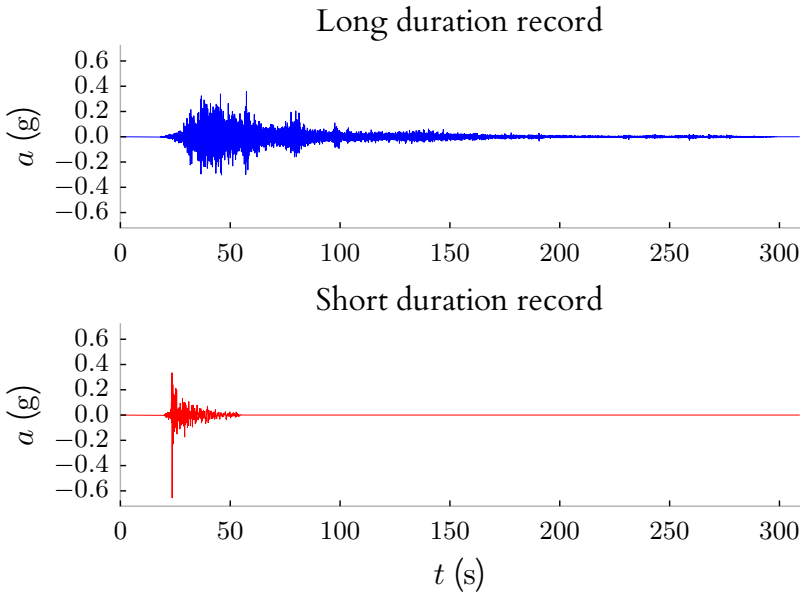




Spectrally equivalent record pair #52

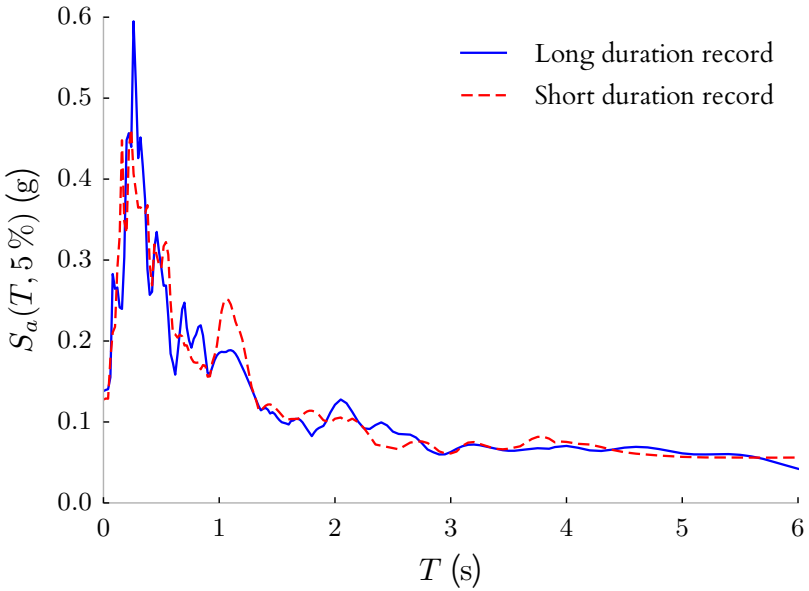
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Maoxiannanxin	WENCHUAN/UA0857.AT2	–	26
2004 Parkfield-02, CA	Shandon-1-story High School Bldg	PARK2004/36535270.AT2	4.03	6

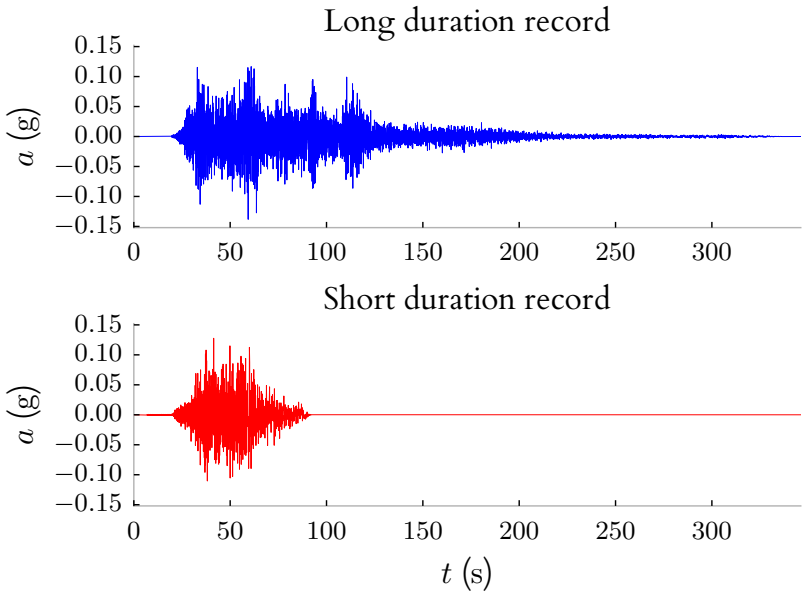




Spectrally equivalent record pair #53

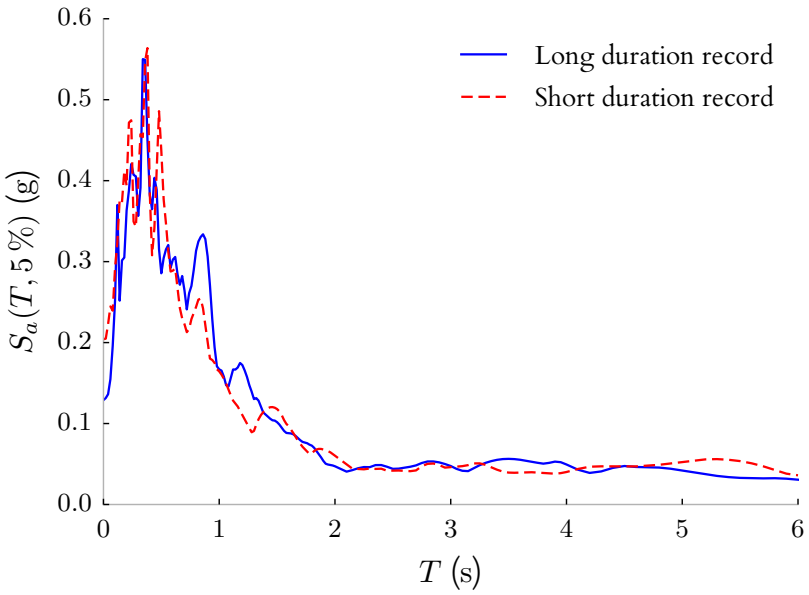
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Dayiyinping	WENCHUAN/UA0920.AT2	–	60
1999 Chi-Chi, Taiwan	TTN051	CHICHI/TTN051-E.AT2	4.41	24

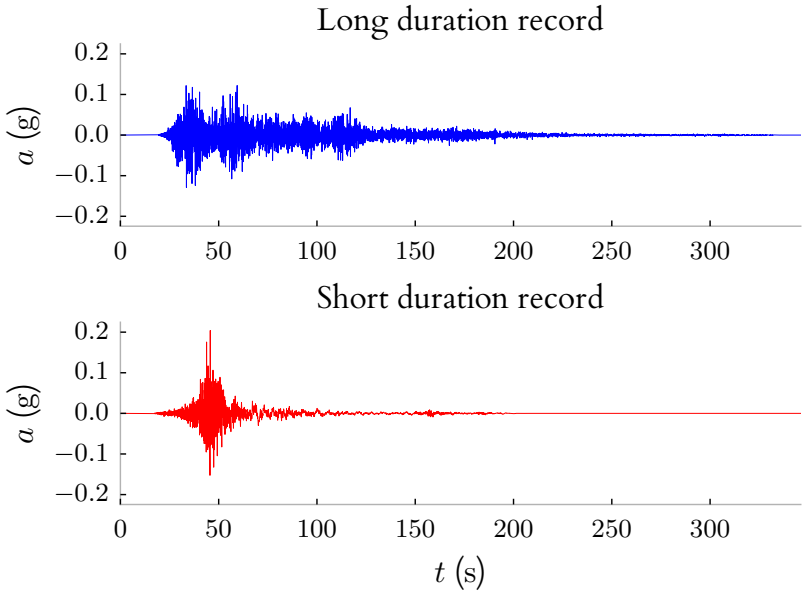




Spectrally equivalent record pair #54

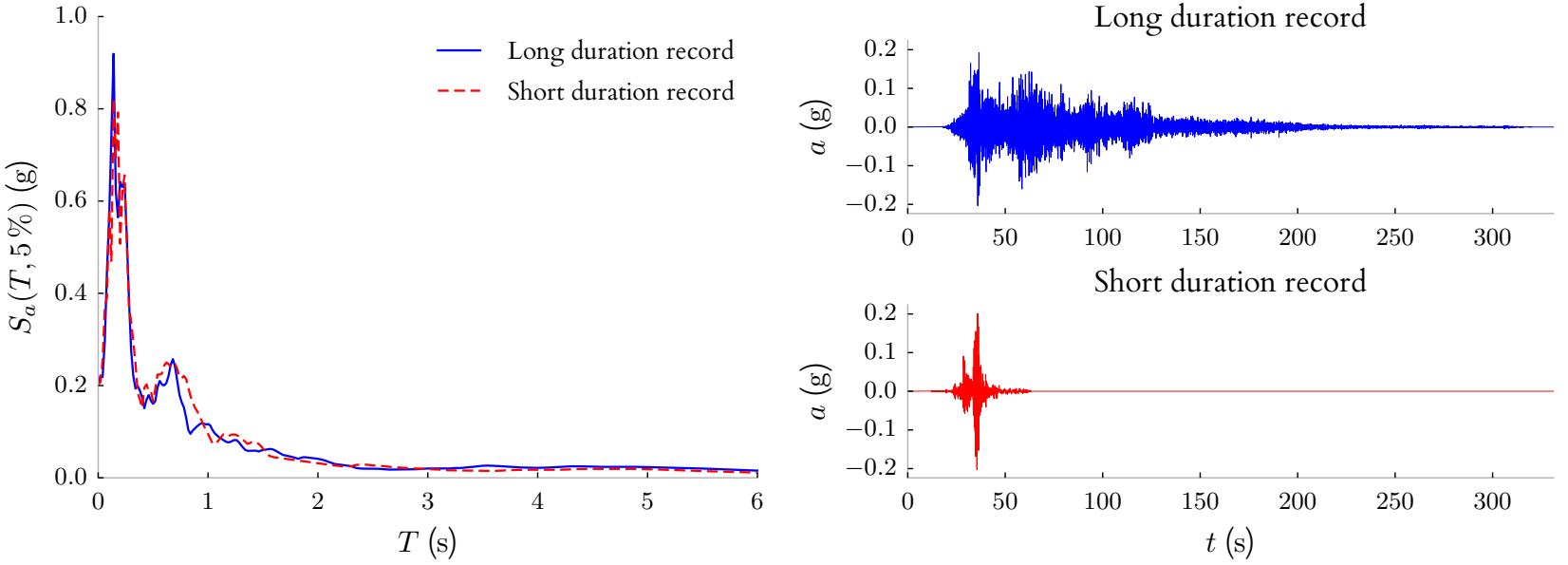
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Dayiyinping	WENCHUAN/UA0921.AT2	–	47
2010 El Mayor-Cucapah	Sam W. Stewart	SIERRA.MEX/CISWSHNE.AT2	2.21	10





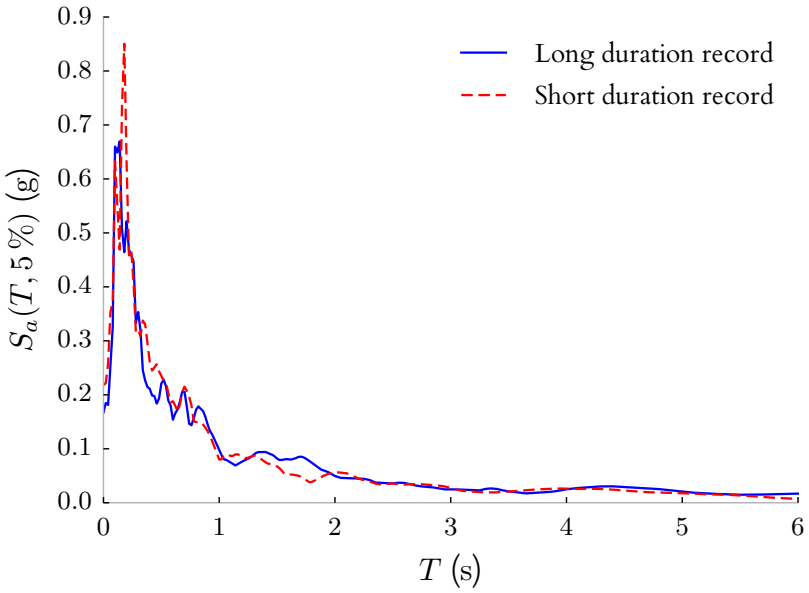
Spectrally equivalent record pair #55

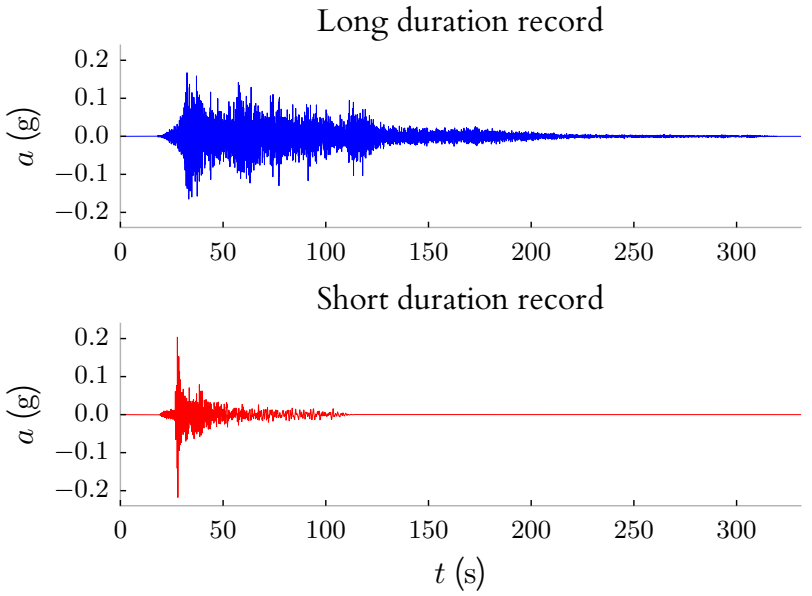
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Qionglaiyouzha	WENCHUAN/UA0923.AT2	–	47
1999 Chi-Chi, Taiwan-03	TCU071	CHICHI.03/TCU071E.AT2	1.05	7



Spectrally equivalent record pair #56

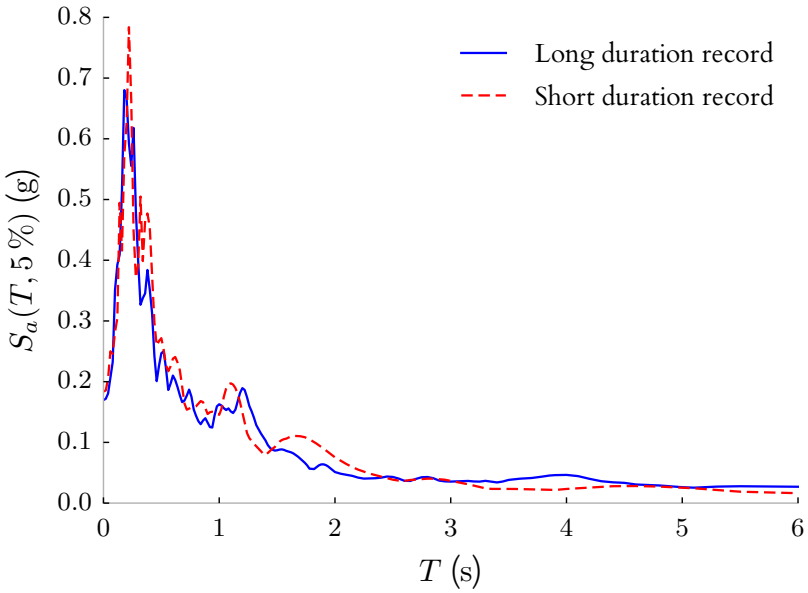
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Qionglaiyouzha	WENCHUAN/UA0924.AT2	–	54
2002 CA/Baja Border Area	El Centro - Meadows Union School	CABAJA/2027B360.AT2	3.61	12

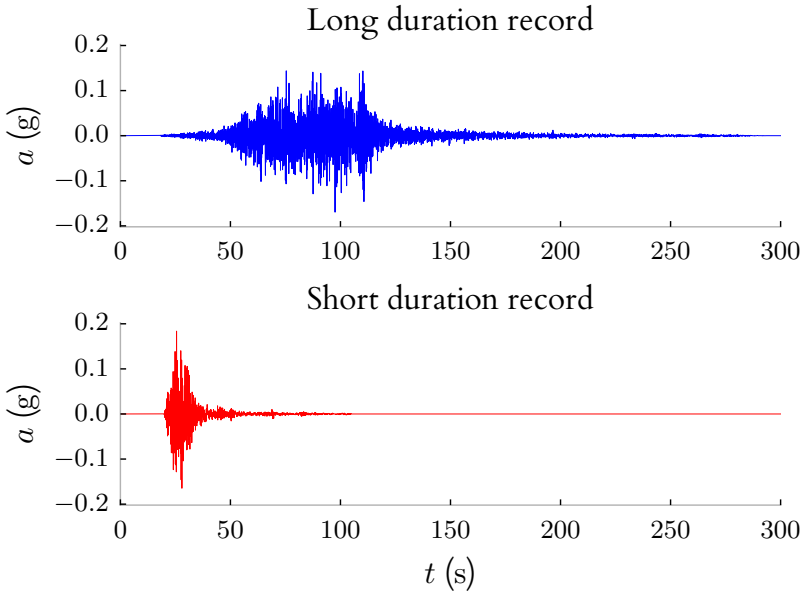




Spectrally equivalent record pair #57

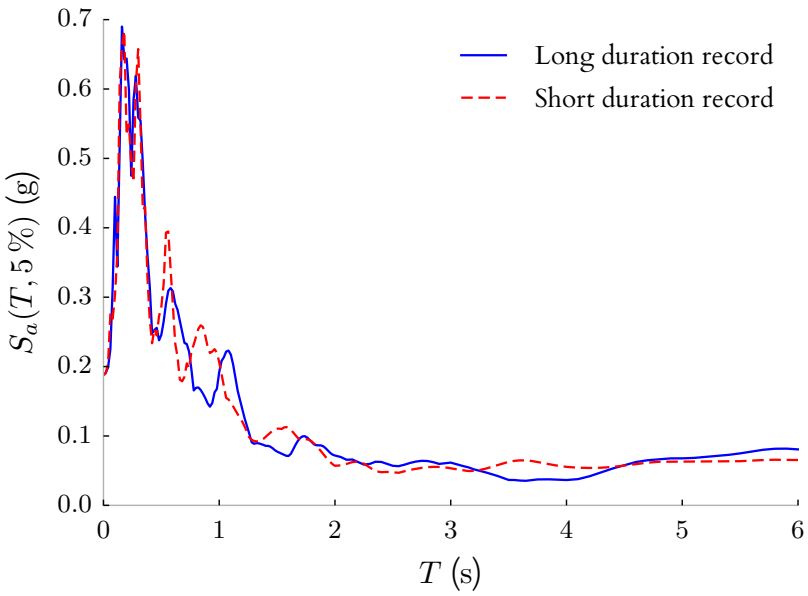
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Cangxiqixiangju	WENCHUAN/UA1030.AT2	–	43
2004 Niigata, Japan	NIG017	NIIGATA/NIG017NS.AT2	0	6

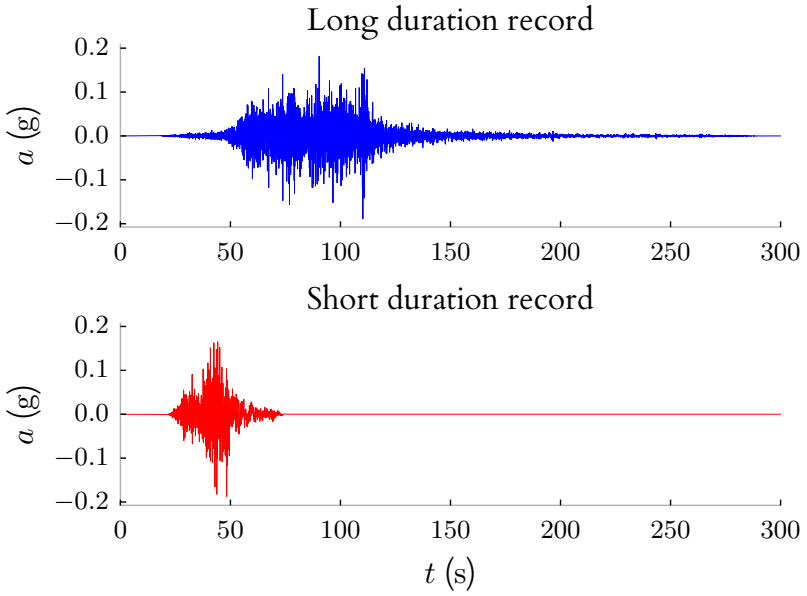




Spectrally equivalent record pair #58

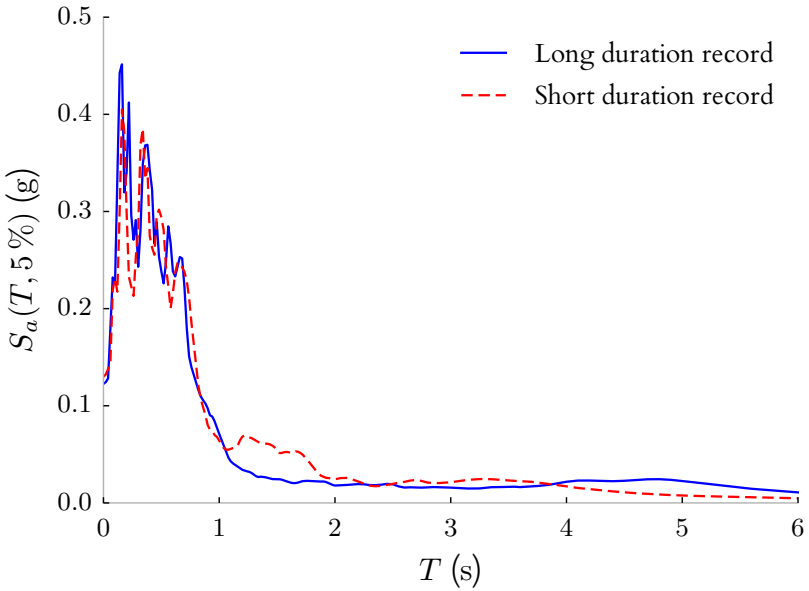
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Cangxiqixiangju	WENCHUAN/UA1031.AT2	–	44
1999 Hector Mine	Mill Creek Ranger Station	HECTOR/MCR180.AT2	3.08	14

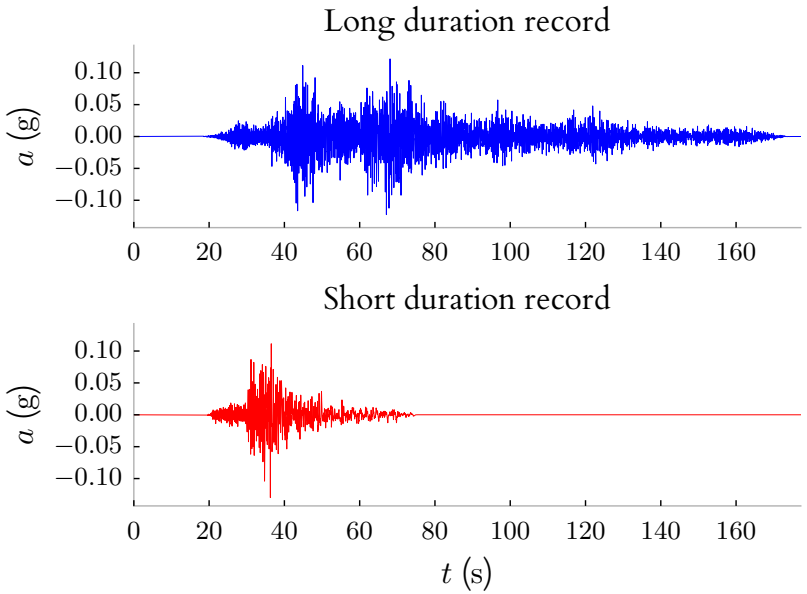




Spectrally equivalent record pair #59

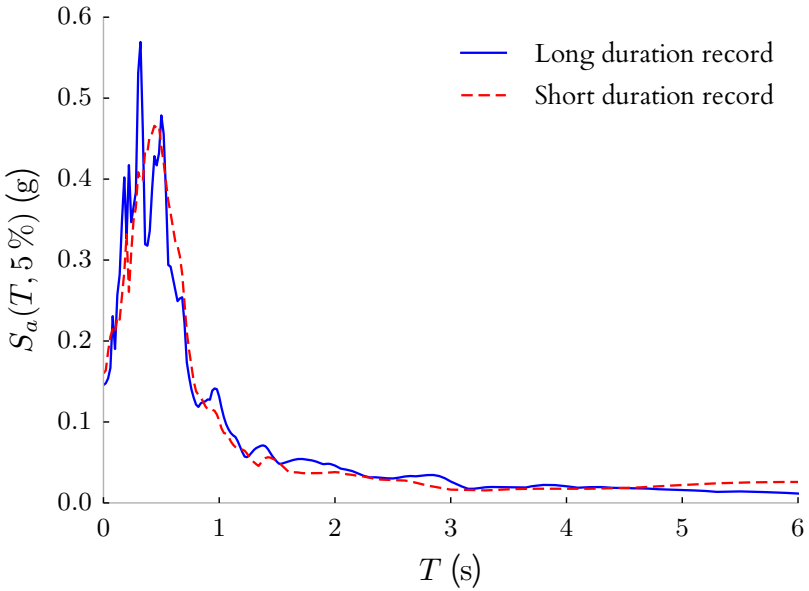
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Hongyatai	WENCHUAN/UA1039.AT2	–	36
1999 Chi-Chi, Taiwan-05	TCU036	CHICHI.05/TCU036N.AT2	2.28	8

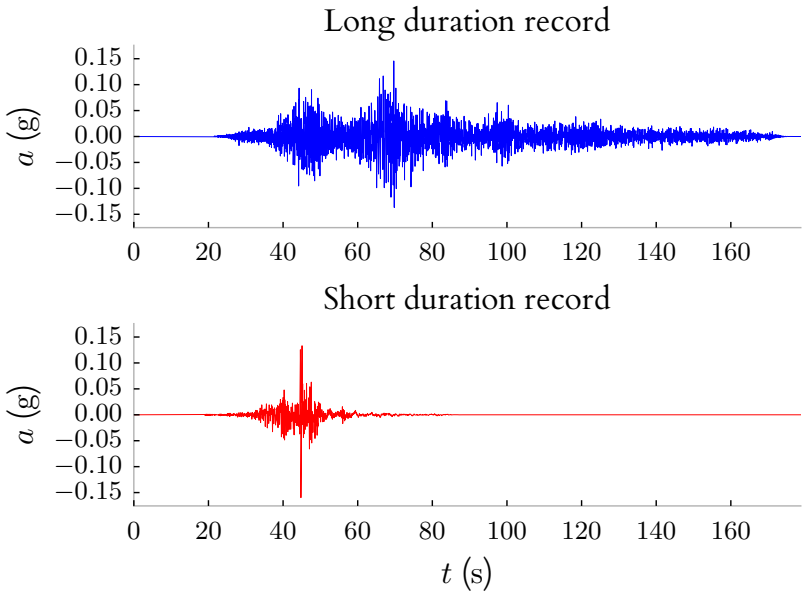




Spectrally equivalent record pair #60

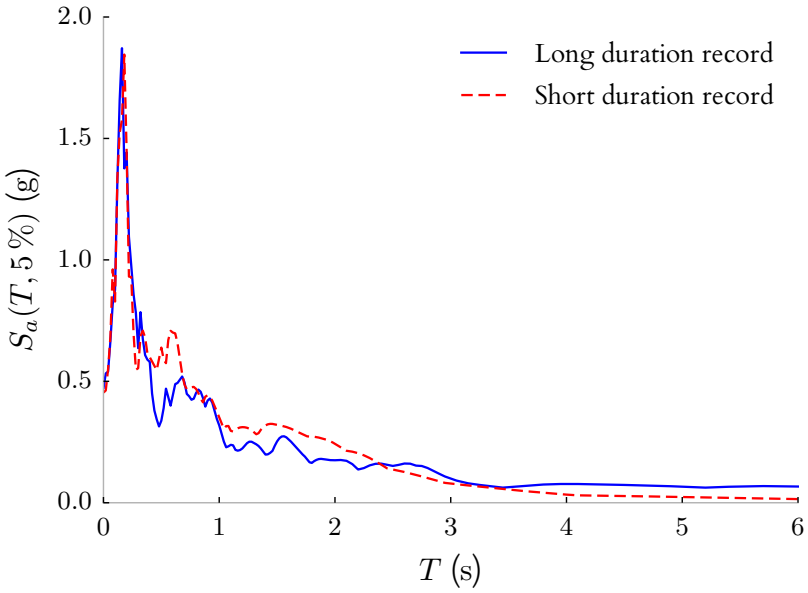
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Hongyatai	WENCHUAN/UA1040.AT2	–	39
1999 Chi-Chi, Taiwan	TCU045	CHICHI/TCU045-E.AT2	0.34	7

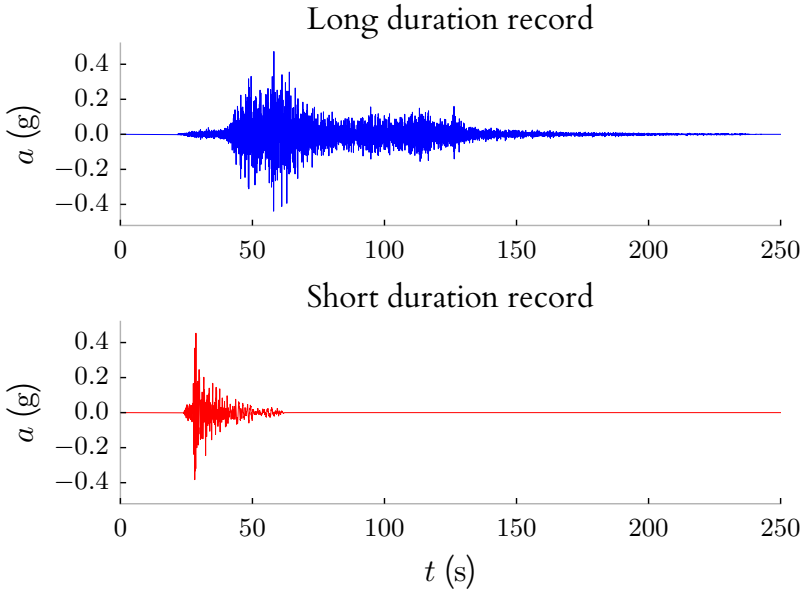




Spectrally equivalent record pair #61

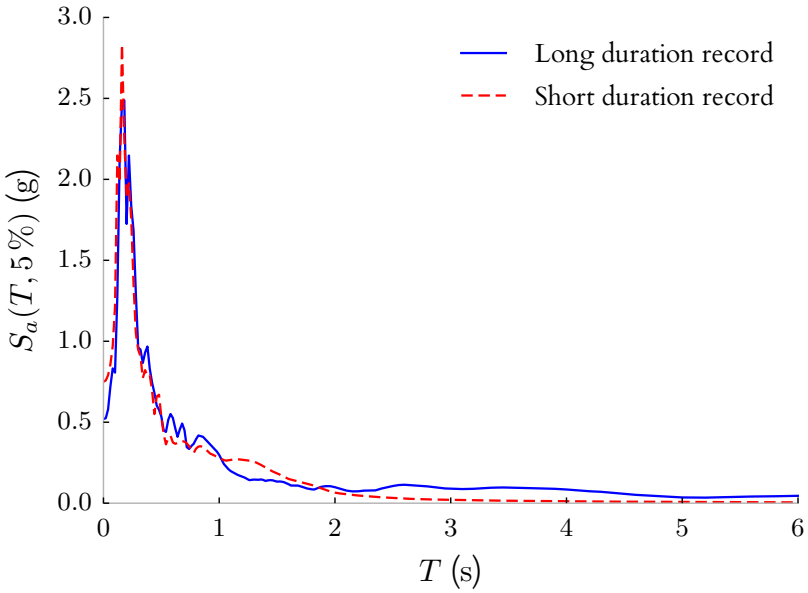
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Jiangyoudizhentai	WENCHUAN/UA1048.AT2	–	29
1986 Chalfant Valley-02	Benton	CHALFANT.A/A-BEN270.AT2	2.17	6

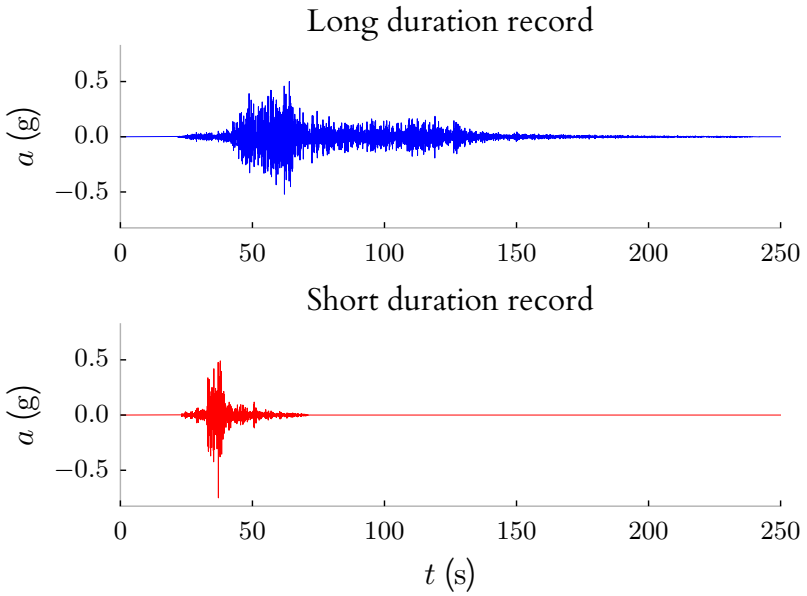




Spectrally equivalent record pair #62

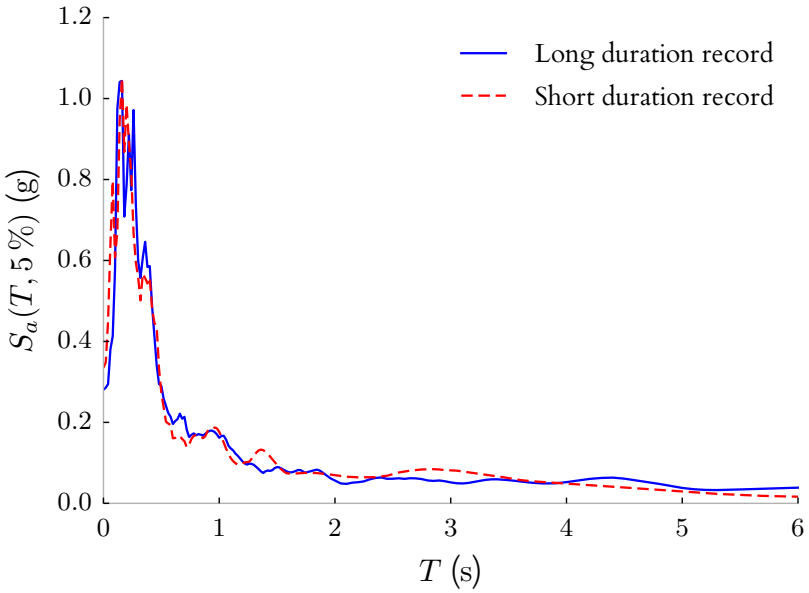
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Jiangyoudizhentai	WENCHUAN/UA1049.AT2	–	25
1999 Chi-Chi, Taiwan-02	TCU129	CHICHI.02/TCU129N.AT2	5.00	5

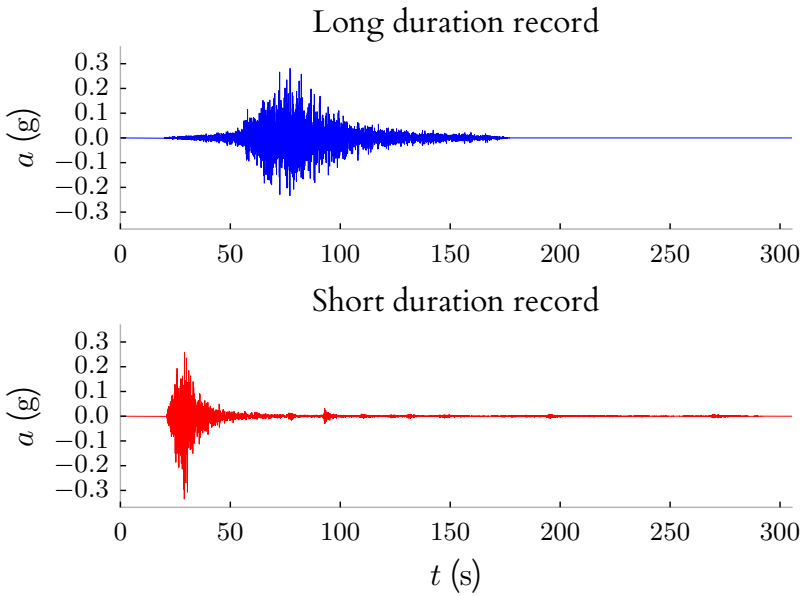




Spectrally equivalent record pair #63

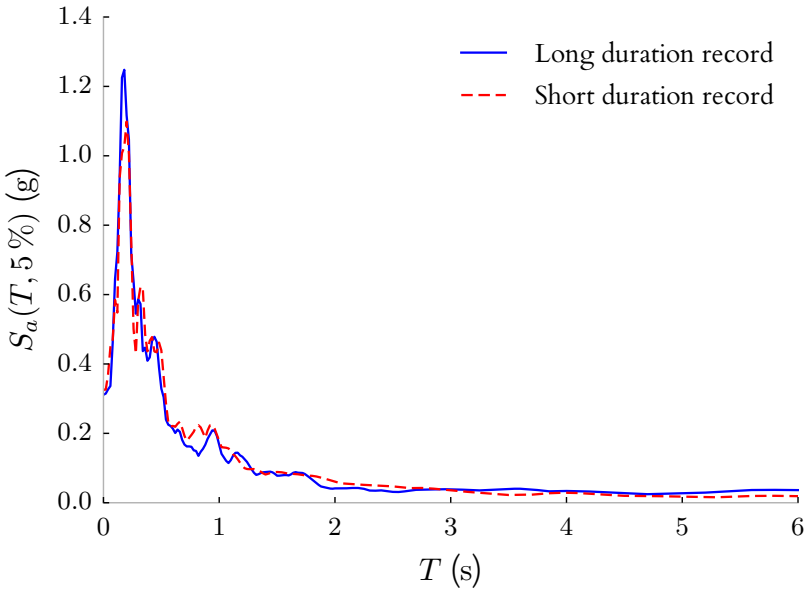
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Guangyuanshijing	WENCHUAN/UA1072.AT2	–	25
2008 Iwate	IWTH26	IWATE/IWTH26NS.AT2	0.37	7

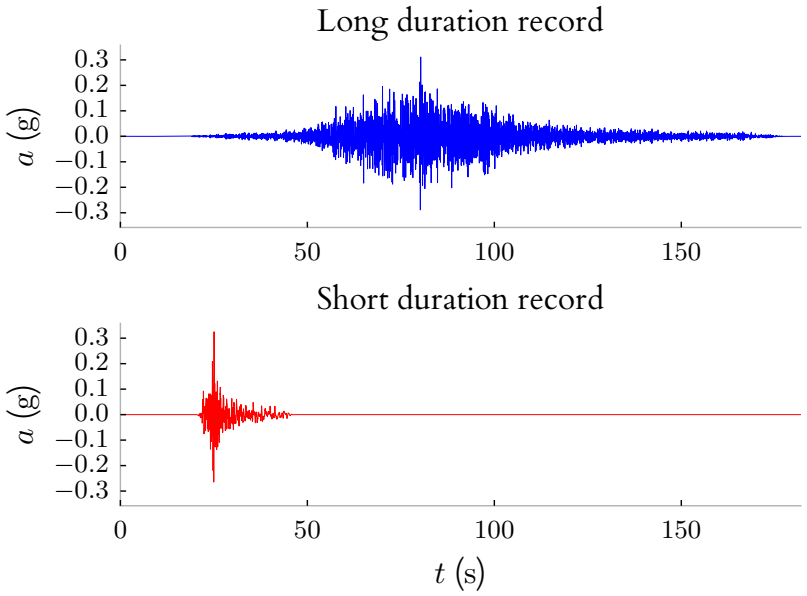




Spectrally equivalent record pair #64

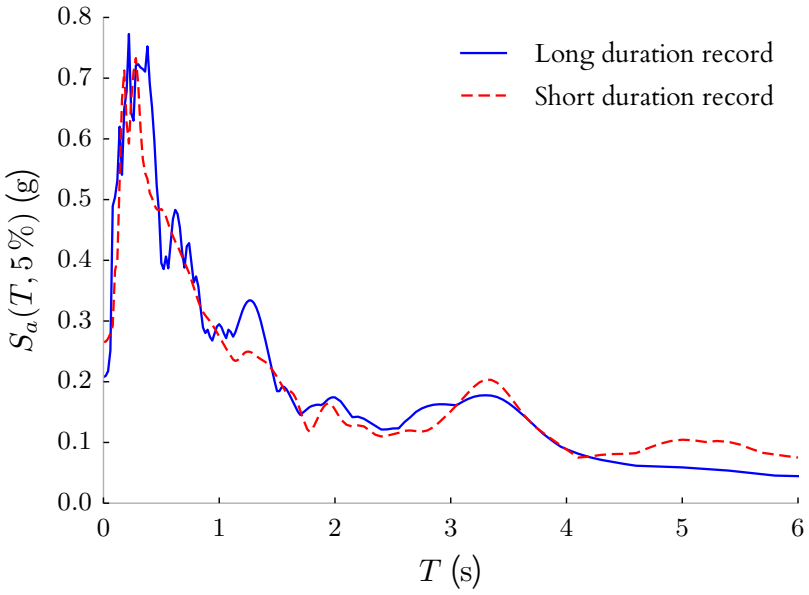
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Guangyuanshijing	WENCHUAN/UA1073.AT2	–	30
1966 Parkfield	Cholame - Shandon Array #8	PARKF/C08320.AT2	1.20	4

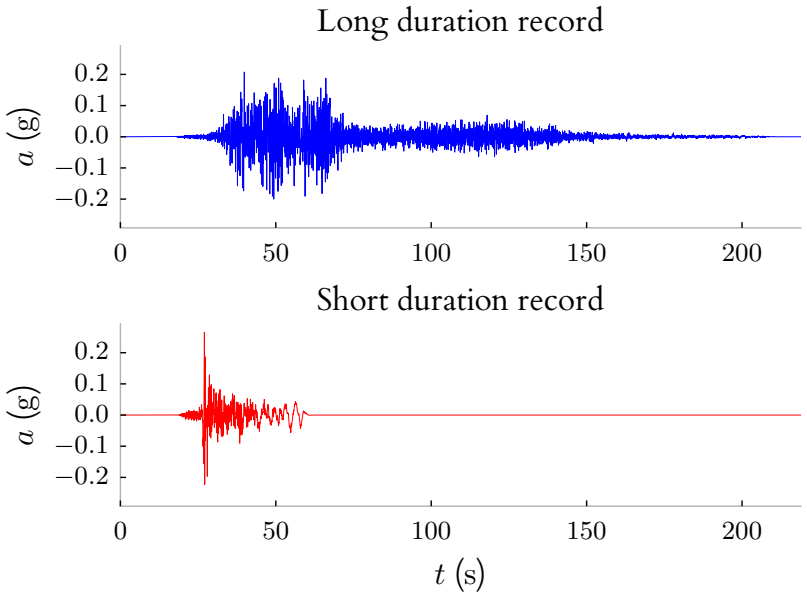




Spectrally equivalent record pair #65

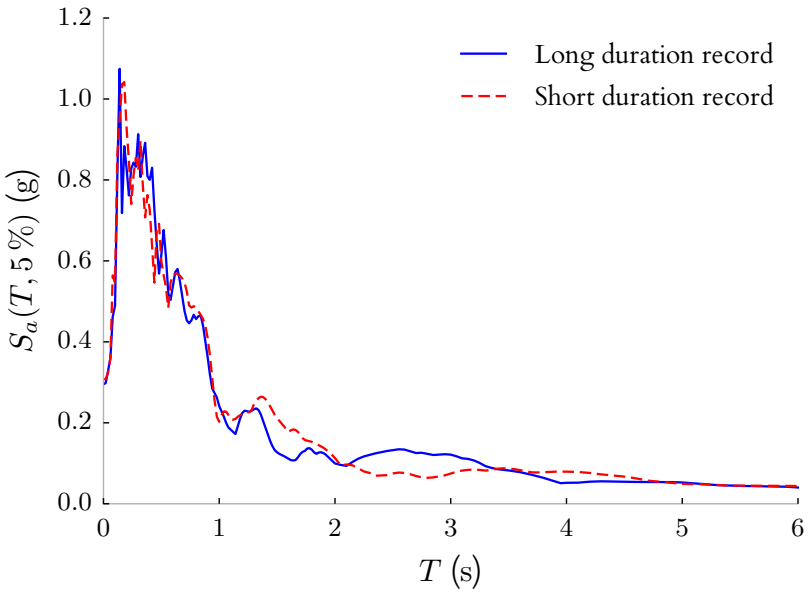
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Anxiantashui	WENCHUAN/UA1081.AT2	–	28
2008 Iwate	Sanbongi Osaki City	IWATE/54013EW.AT2	1.64	12

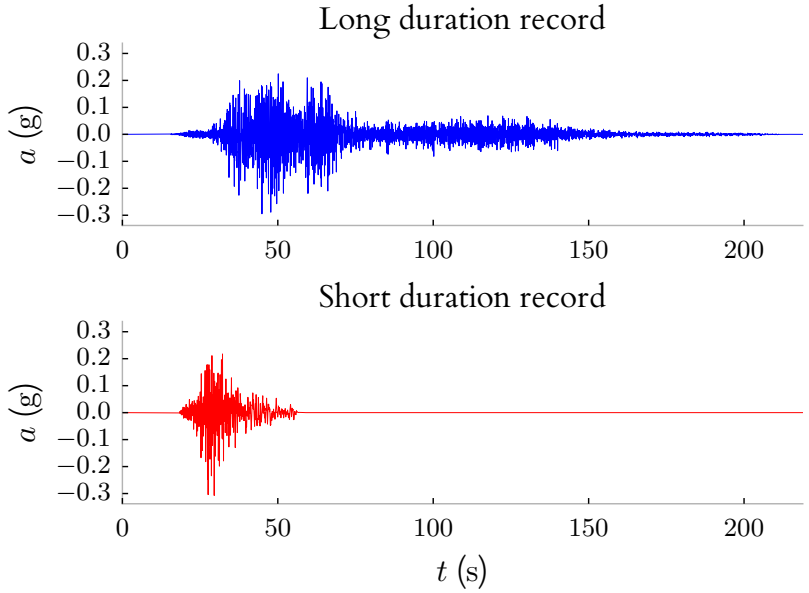




Spectrally equivalent record pair #66

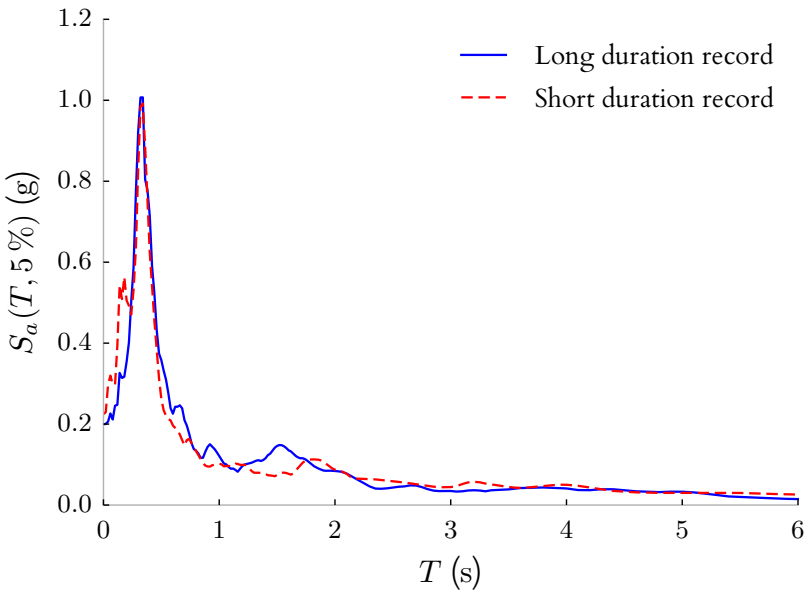
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Anxiantashui	WENCHUAN/UA1082.AT2	–	27
1989 Loma Prieta	Fremont - Emerson Court	LOMAP/FMS180.AT2	2.19	7

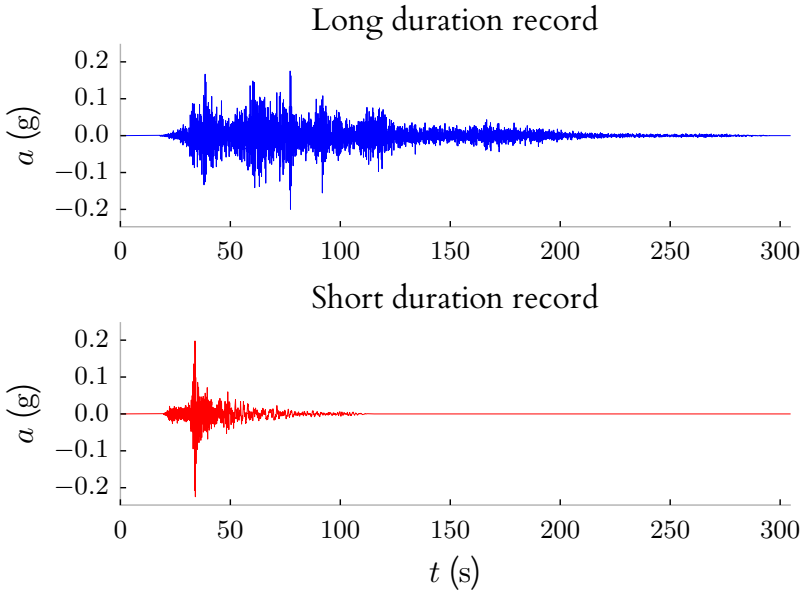




Spectrally equivalent record pair #67

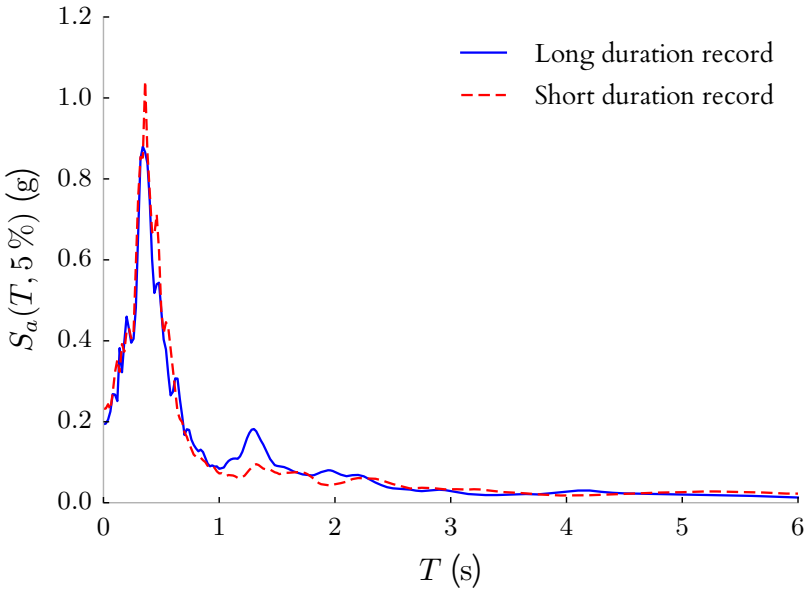
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Pujiangdaxing	WENCHUAN/UA1099.AT2	–	56
1999 Chi-Chi (aftershock 4), Taiwan	CHY008	CHICHI.05/CHY008W.AT2	1.89	6

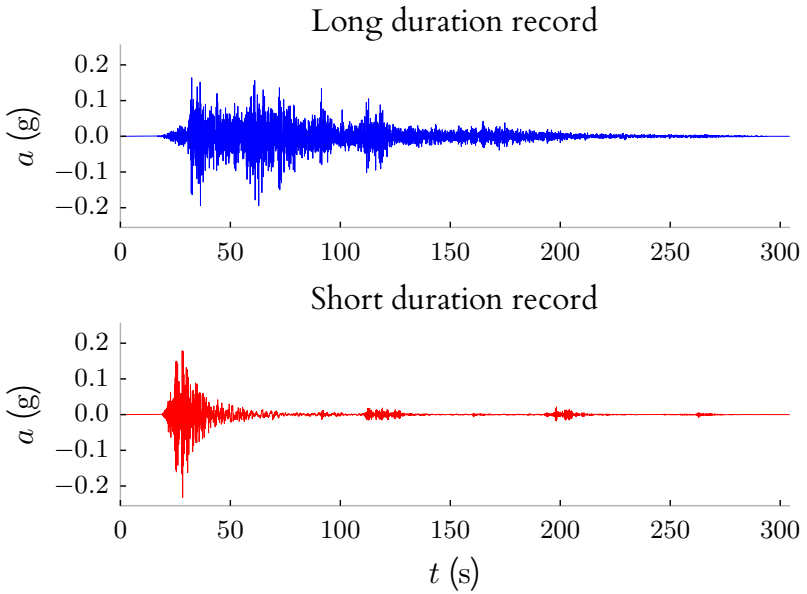




Spectrally equivalent record pair #68

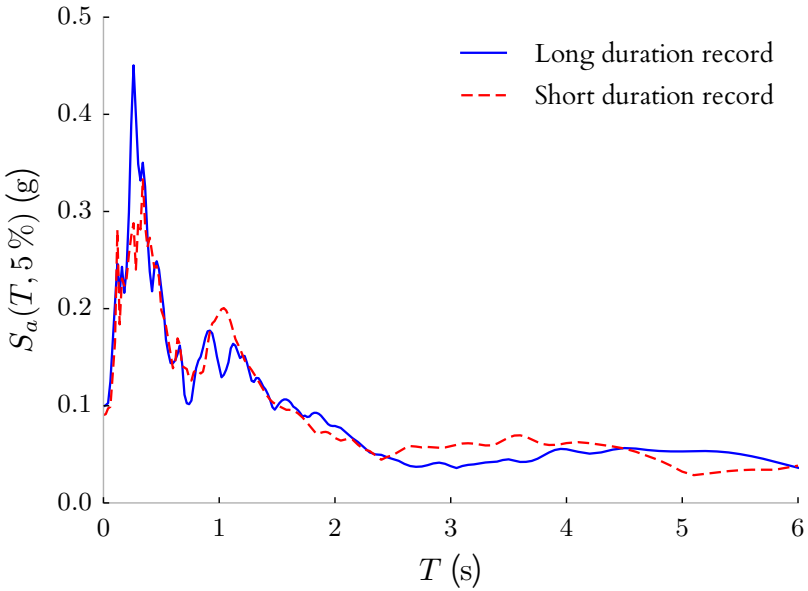
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Pujiangdaxing	WENCHUAN/UA1100.AT2	–	47
2007 Chuetsu-oki	NIG019	CHUETSU/NIG019NS.AT2	0.59	8

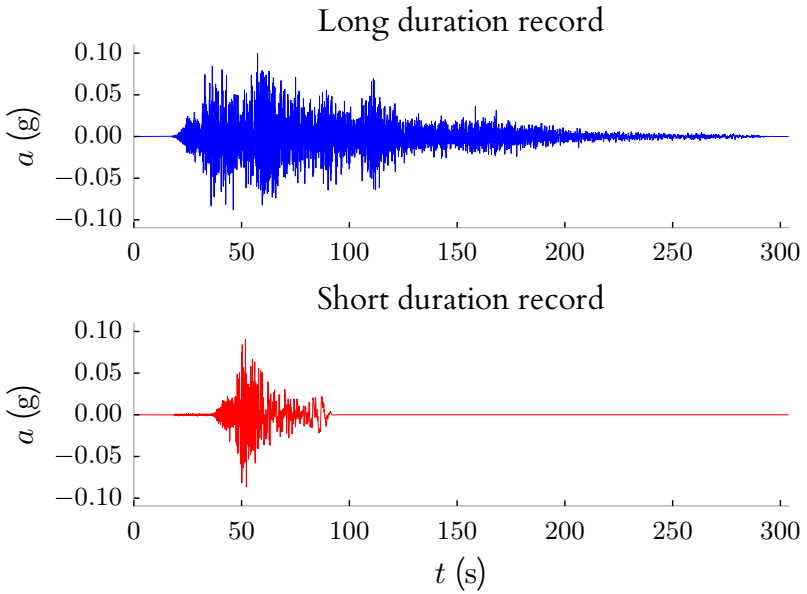




Spectrally equivalent record pair #69

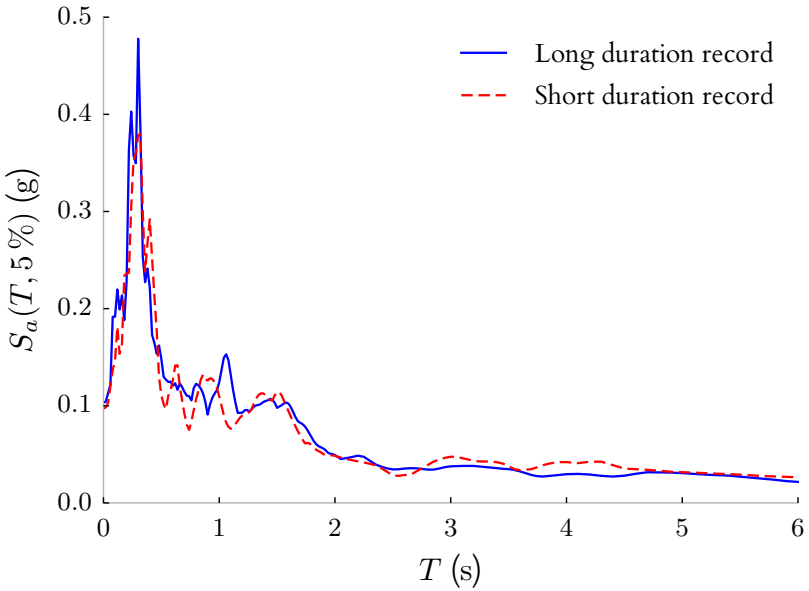
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Pujiangwuxing	WENCHUAN/UA1102.AT2	–	60
1999 Chi-Chi, Taiwan-04	CHY044	CHICHI.04/CHY044E.AT2	3.36	12

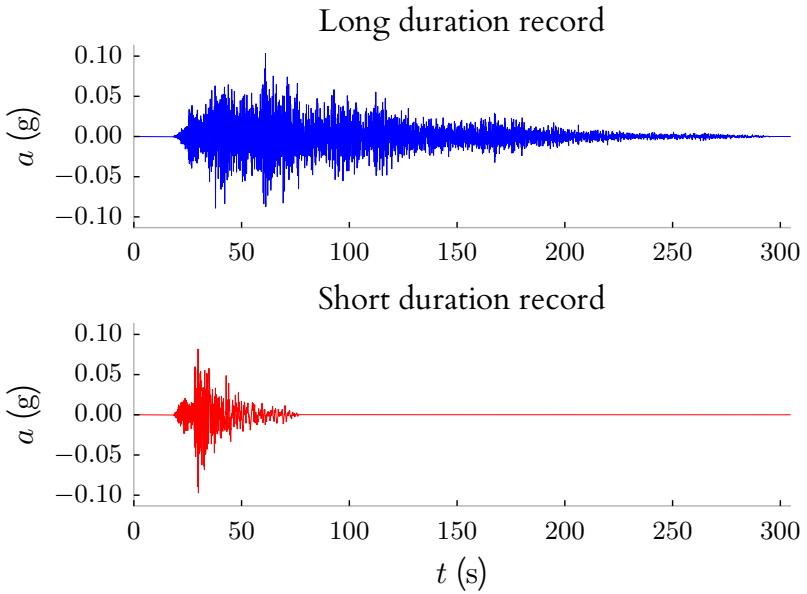




Spectrally equivalent record pair #70

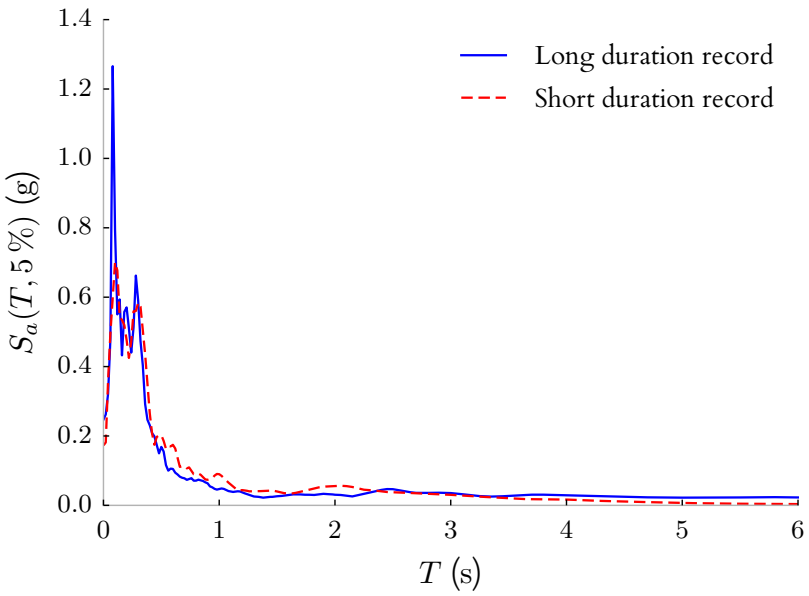
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Pujiangwuxing	WENCHUAN/UA1103.AT2	–	63
1999 Chi-Chi, Taiwan-04	TTN044	CHICHI.04/TTN044W.AT2	3.12	12

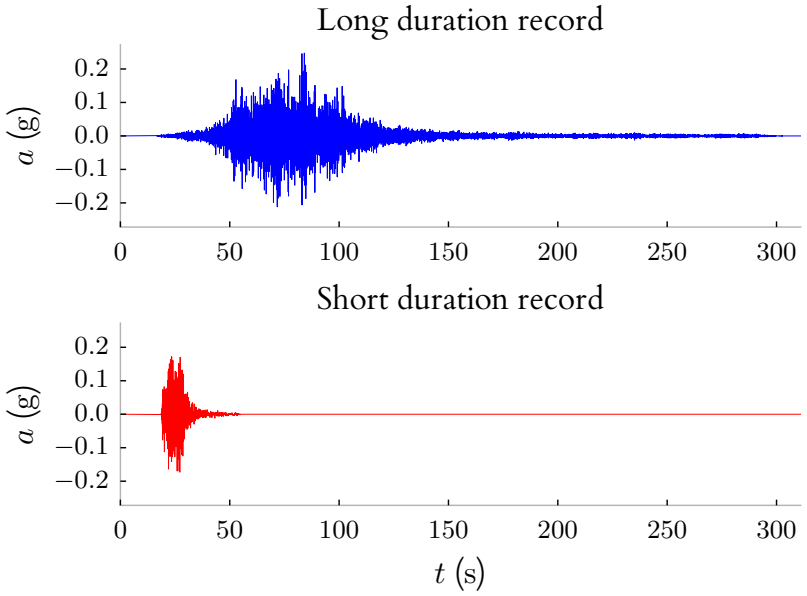




Spectrally equivalent record pair #71

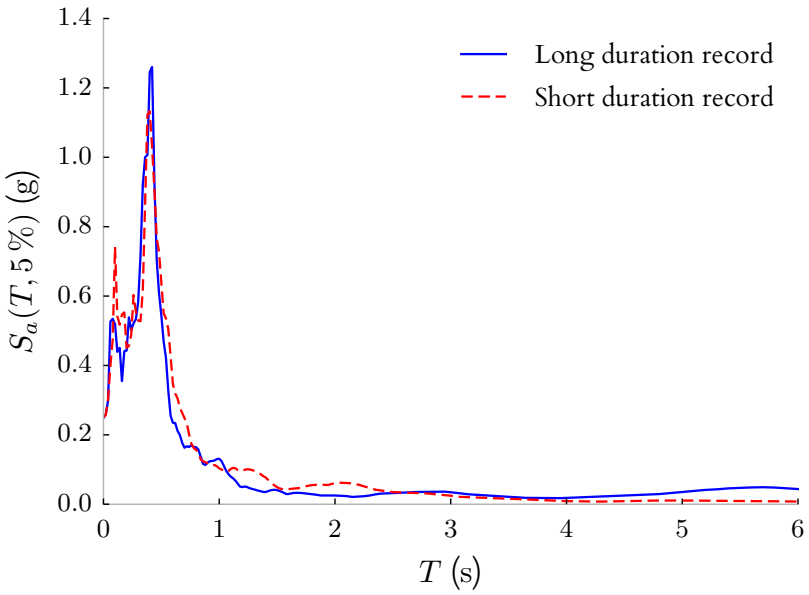
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Pingwumuzuo	WENCHUAN/UA1148.AT2	–	35
2009 L'Aquila, Italy	GRAN SASSO (Assergi)	L-AQUILA/EF021YLN.AT2	1.20	6

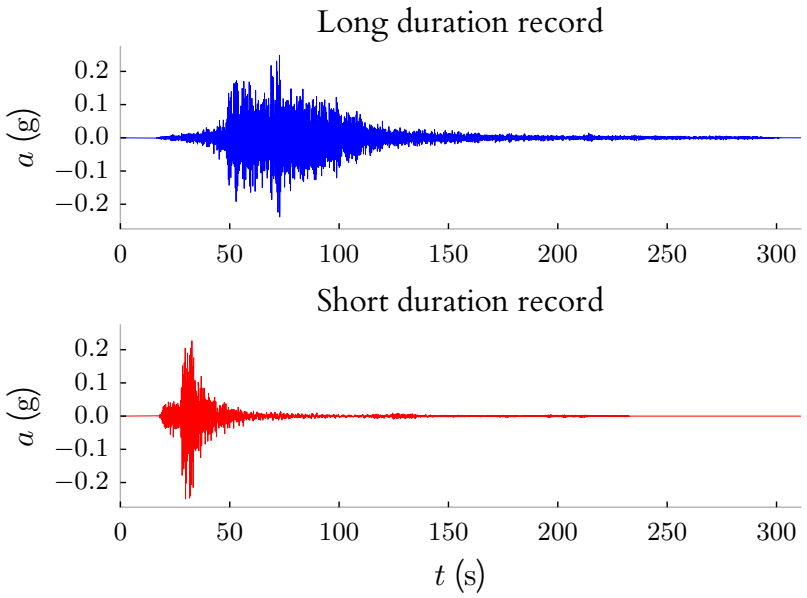




Spectrally equivalent record pair #72

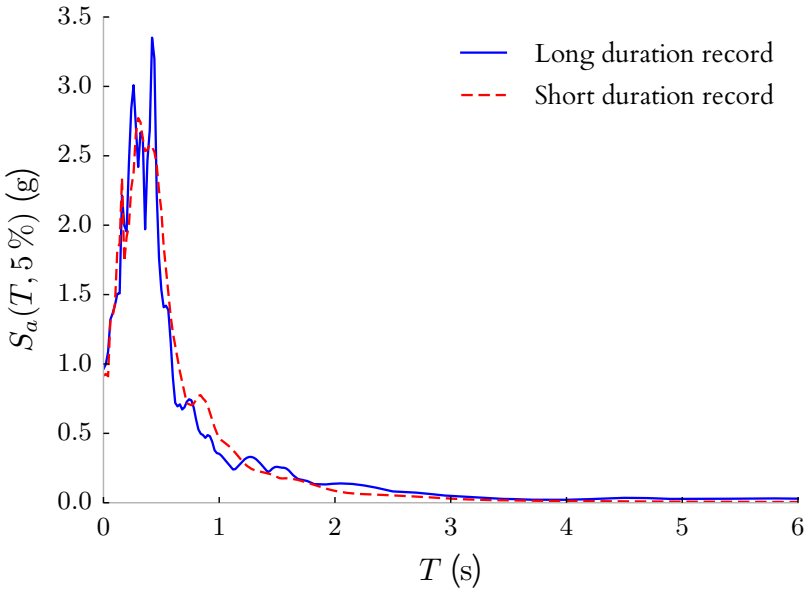
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Pingwumuzuo	WENCHUAN/UA1149.AT2	–	33
2004 Niigata, Japan	FKS022	NIIGATA/FKS022NS.AT2	1	6

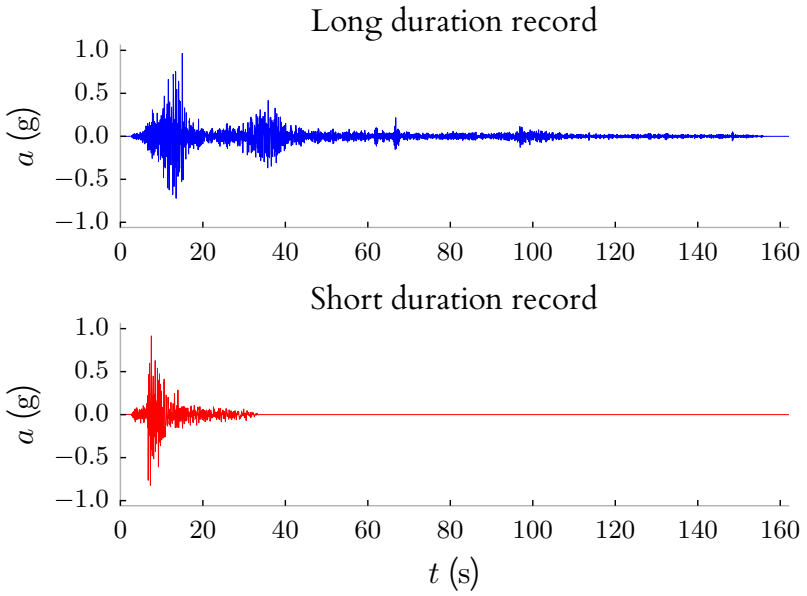




Spectrally equivalent record pair #73

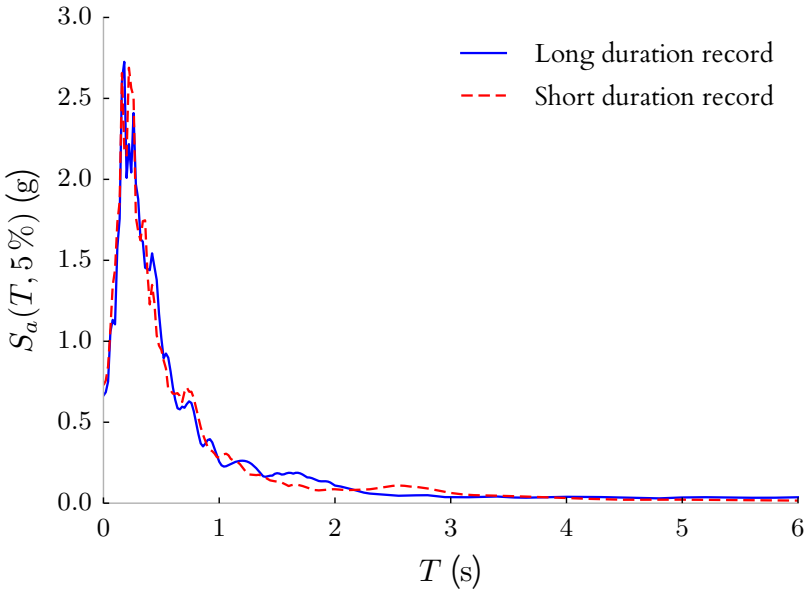
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Wenchuanwolong	WENCHUAN/UA1153.AT2	–	22
1987 Whittier Narrows-01	Studio City - Ventura & Coldwater Cyn Av	WHITTIER.A/A-CO2182.AT2	3.87	3

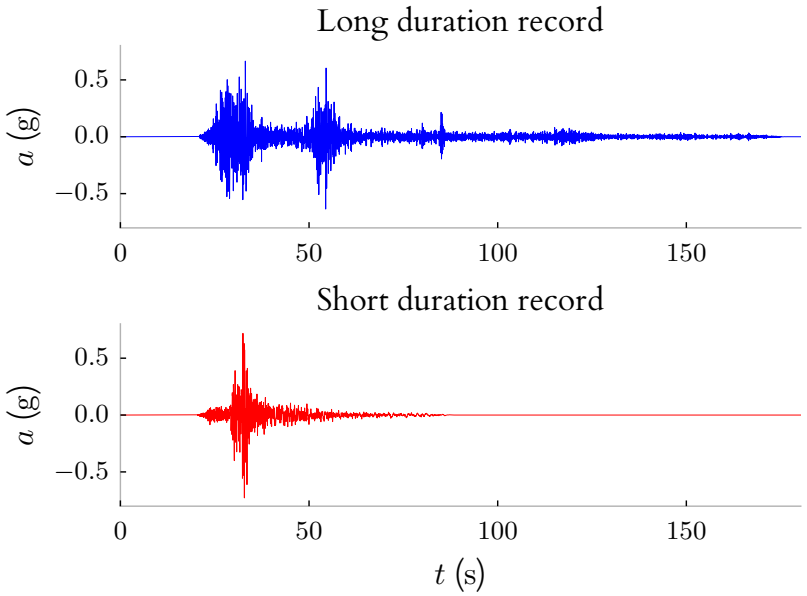




Spectrally equivalent record pair #74

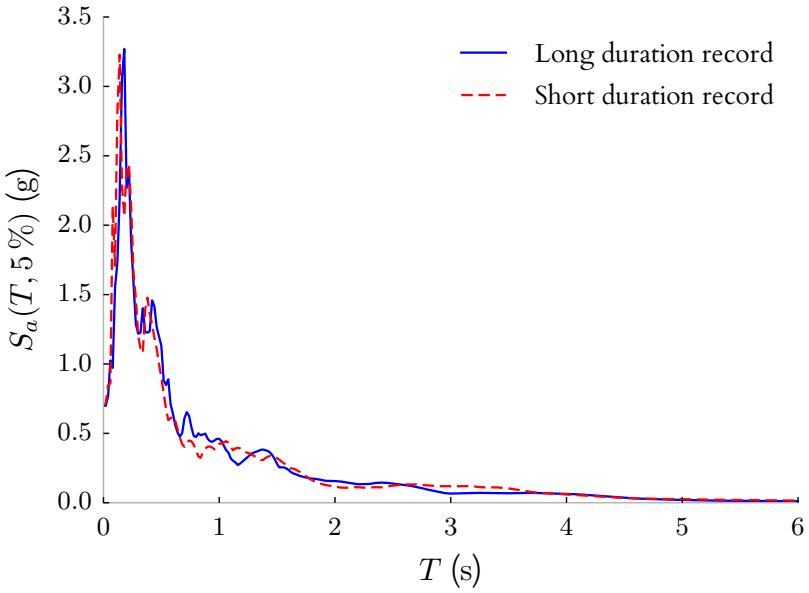
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2008 Wenchuan, China	Wenchuanwolong	WENCHUAN/UA1154.AT2	–	27
1999 Chi-Chi, Taiwan-05	TCU061	CHICHI.05/TCU061E.AT2	3.74	4

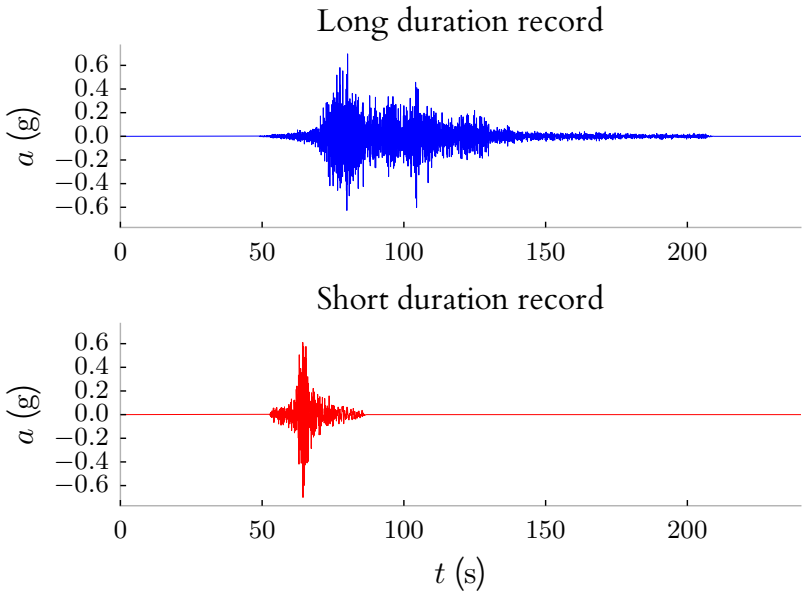




Spectrally equivalent record pair #75

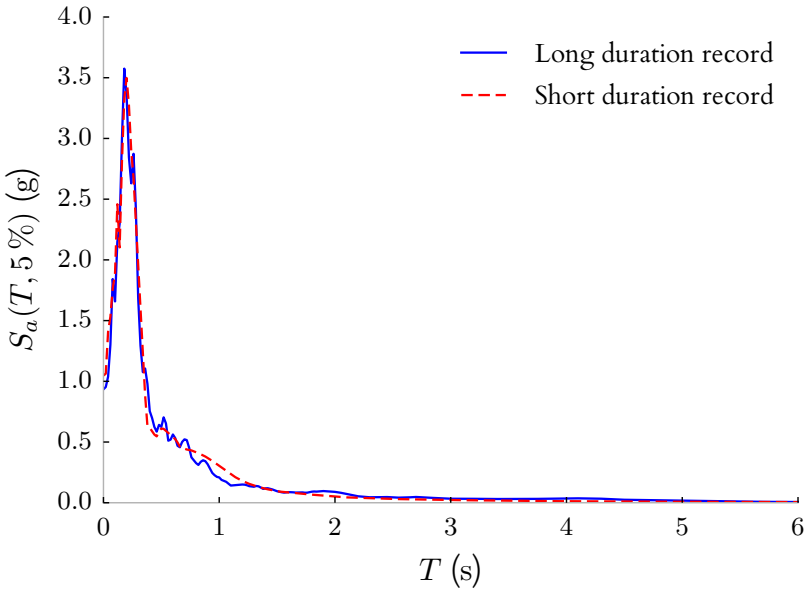
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Angol	ANGOLEW.th	–	30
1980 Irpinia, Italy-01	Brienza	ITALY/A-BRZ000.AT2	3.19	4

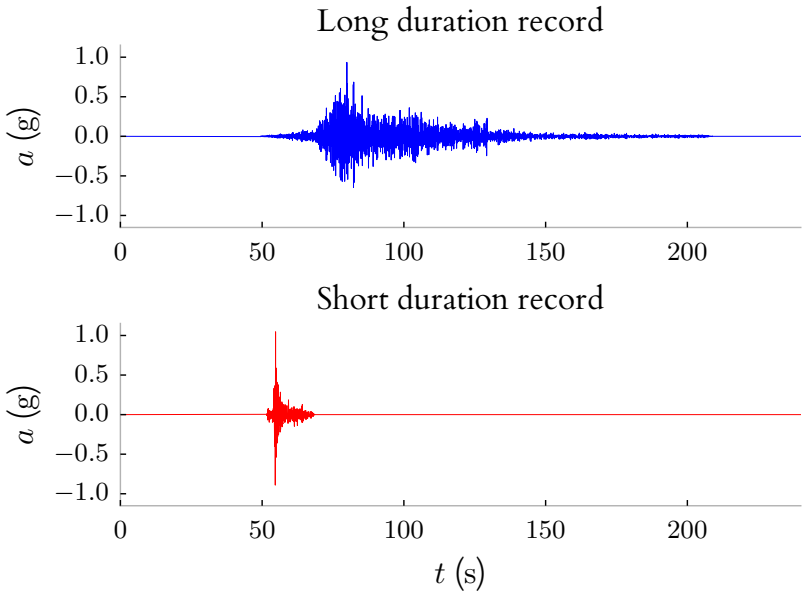




Spectrally equivalent record pair #76

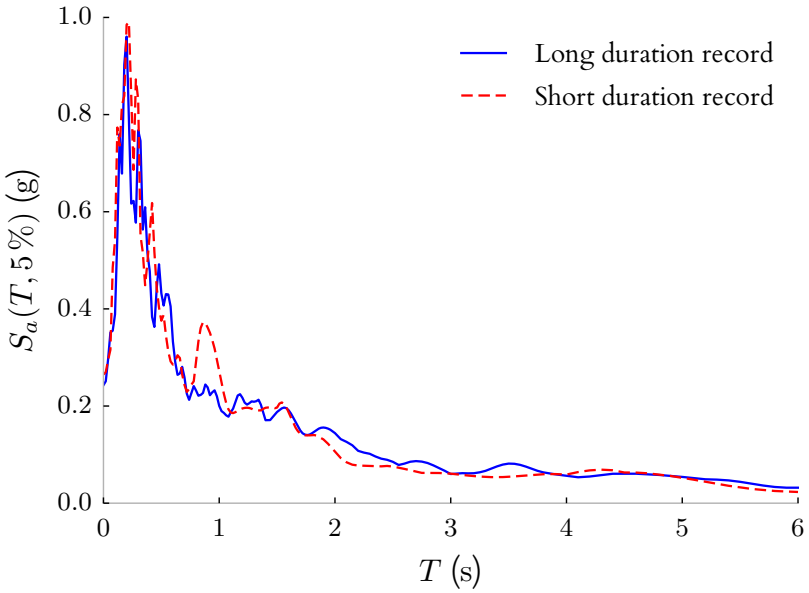
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Angol	ANGOLNS.th	–	23
1987 Whittier Narrows-02	Santa Fe Springs - E.Joslin	WHITTIER.B/B-EJS318.AT2	3.33	1

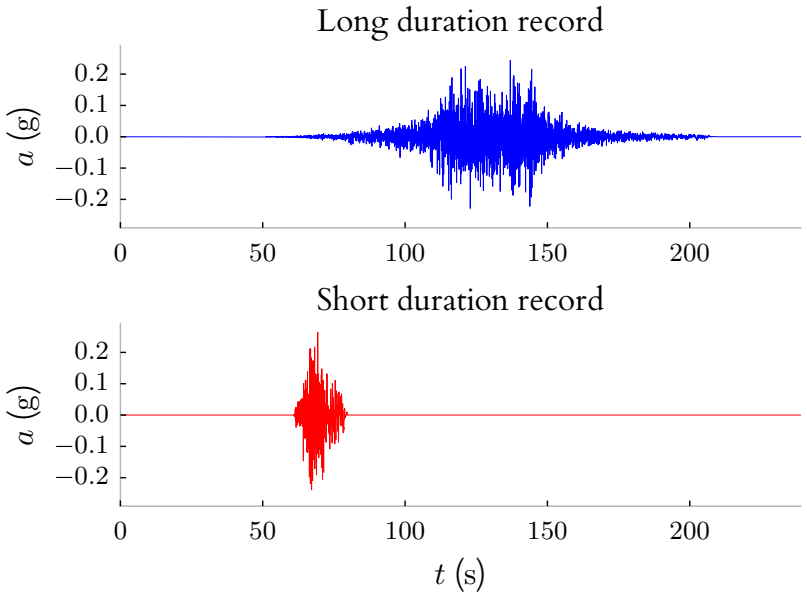




Spectrally equivalent record pair #77

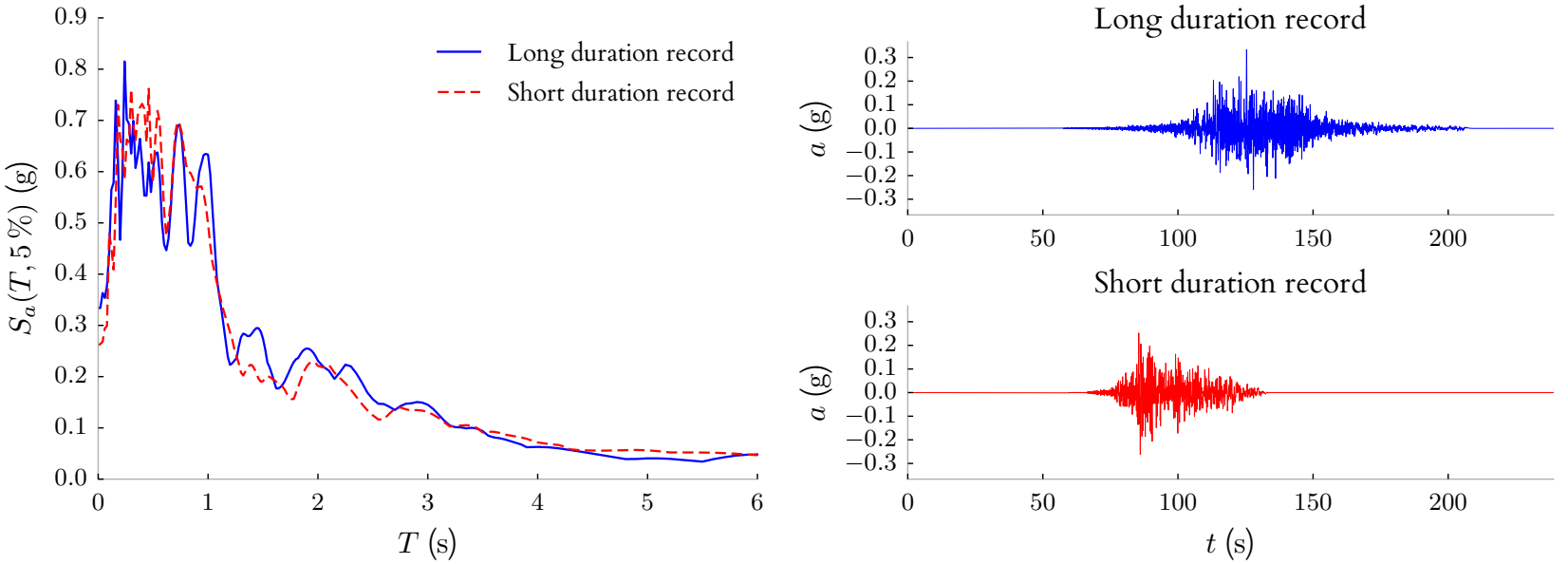
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Cerro Santa Lucia	CERROSANTALUCIA360.th	–	30
1979 Imperial Valley-06	Plaster City	IMPVALL.H/H-PLS135.AT2	4.58	6





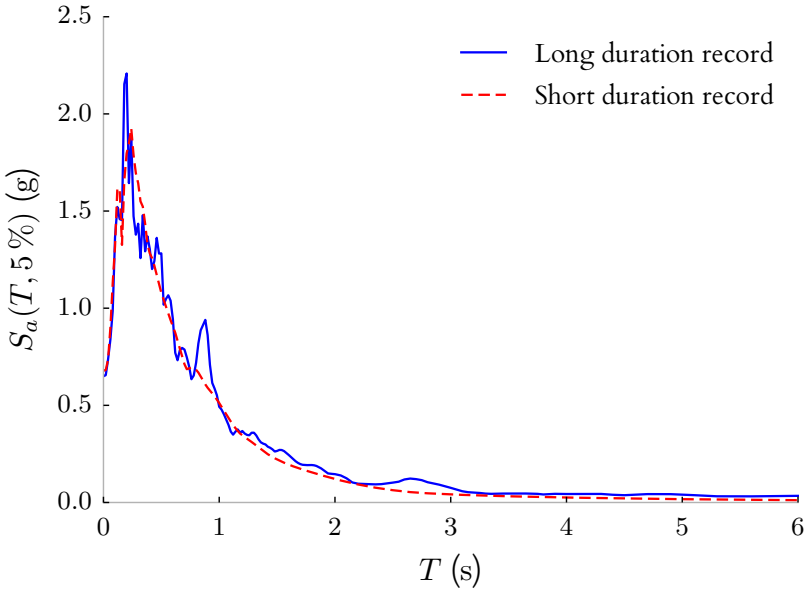
Spectrally equivalent record pair #78

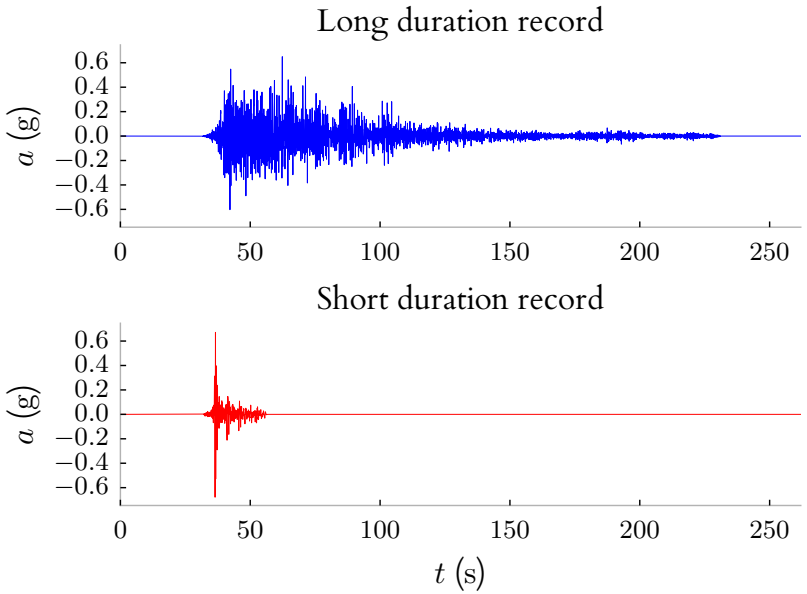
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Cerro Santa Lucia	CERROSANTALUCIA90.th	–	25
1999 Chi-Chi, Taiwan	CHY088	CHICHI/CHY088-E.AT2	1.73	17



Spectrally equivalent record pair #79

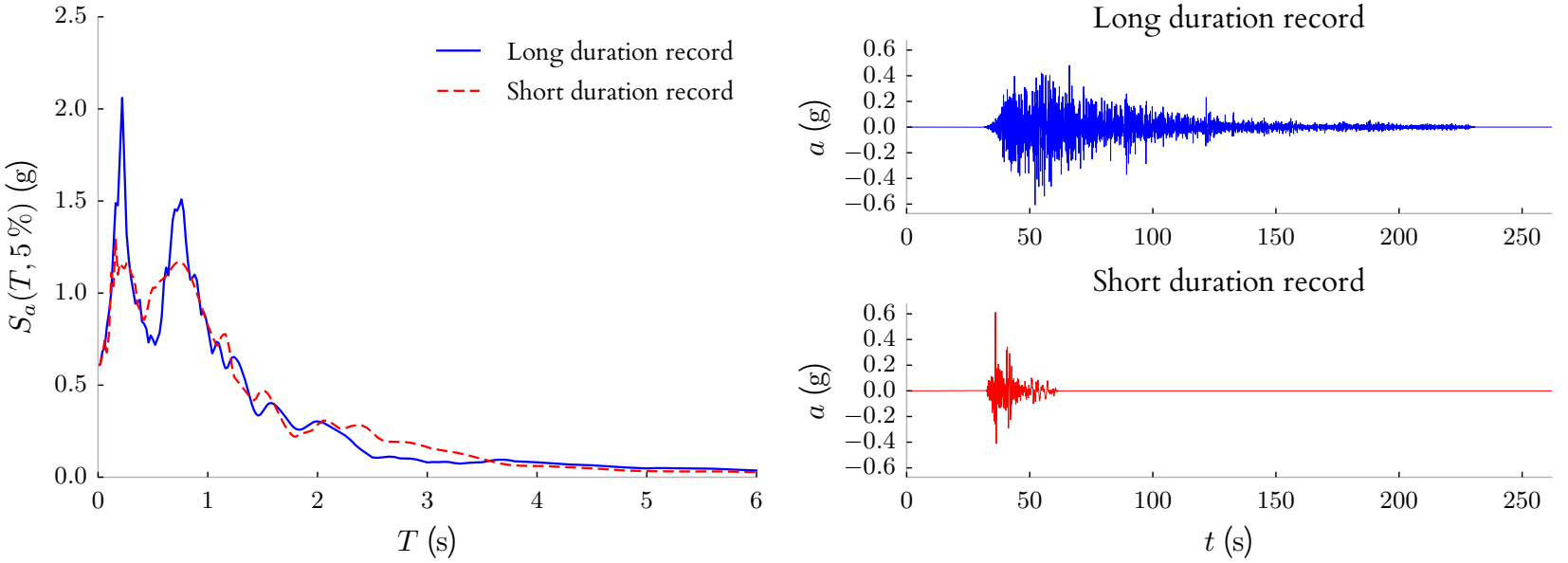
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Concepcion San Pedro	CONCEPCIONSANPEDRO7.th	–	36
1987 Whittier Narrows-02	Buena Park - La Palma	WHITTIER.B/B-BPK090.AT2	5.00	1





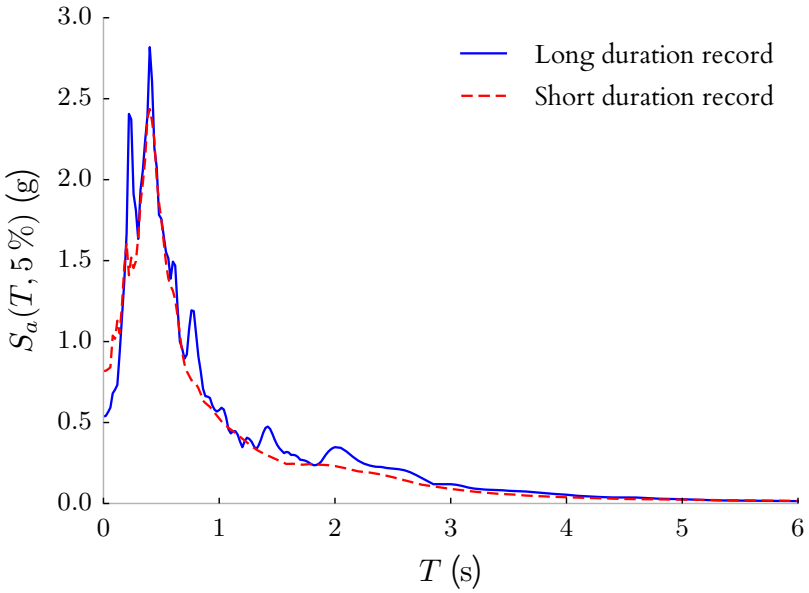
Spectrally equivalent record pair #80

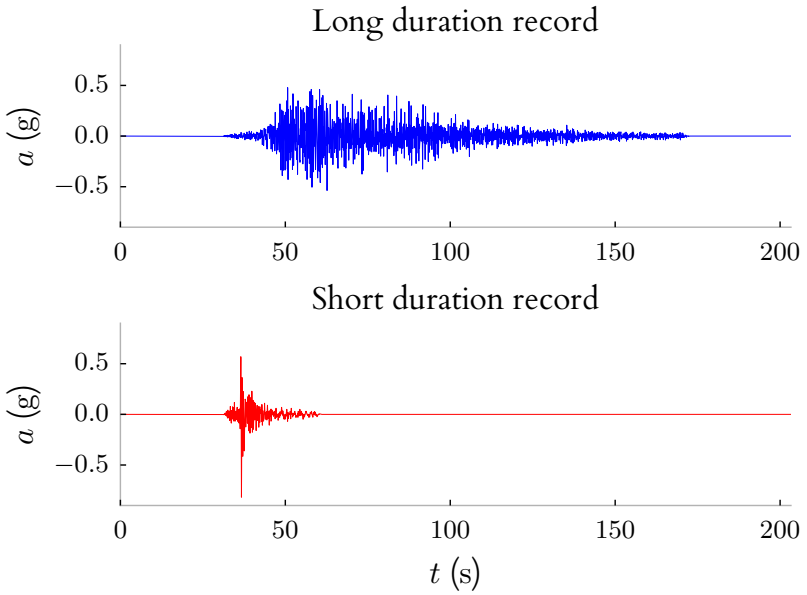
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Concepcion San Pedro	CONCEPCIONSANPEDRO97.th	–	32
1994 Northridge-01	Sun Valley - Roscoe Blvd	NORTHR/RO3090.AT2	1.37	6



Spectrally equivalent record pair #81

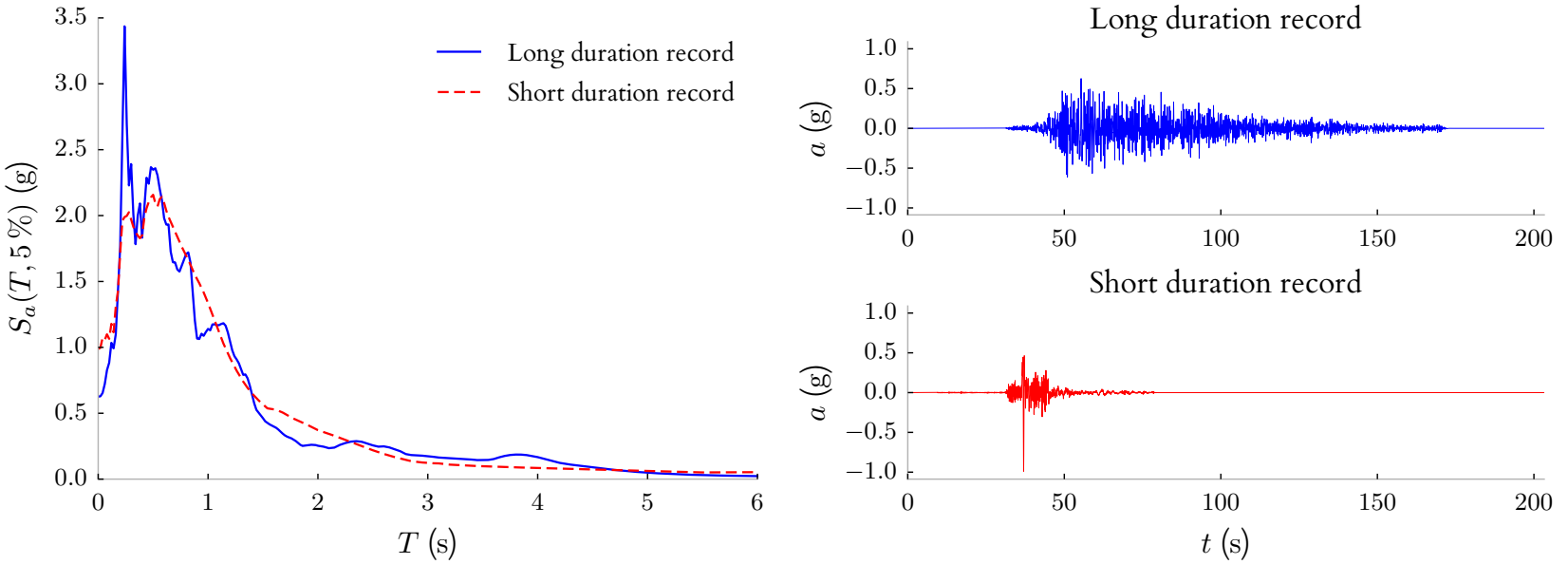
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Constitucion	CONSTITUCIONL.th	–	32
1981 Taiwan SMART1(5)	SMART1 O12	SMART1.05/05O12NS.AT2	5.00	1





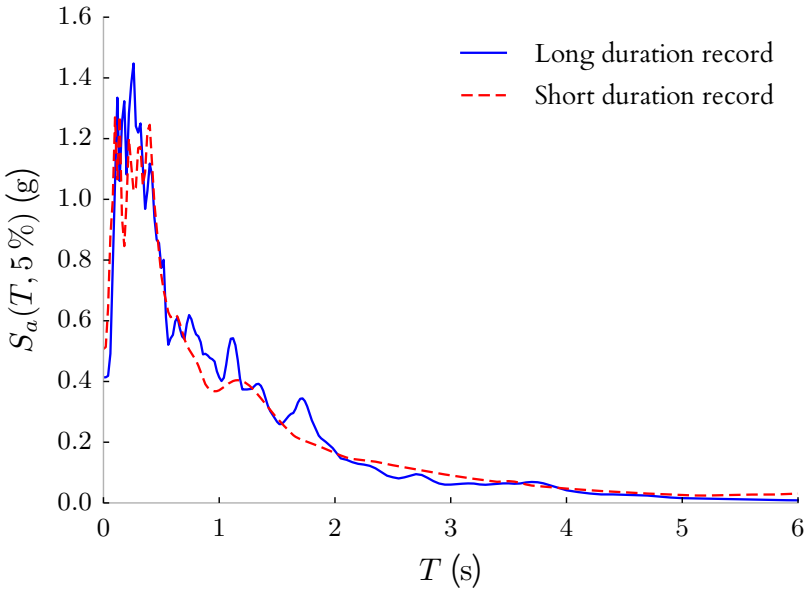
Spectrally equivalent record pair #82

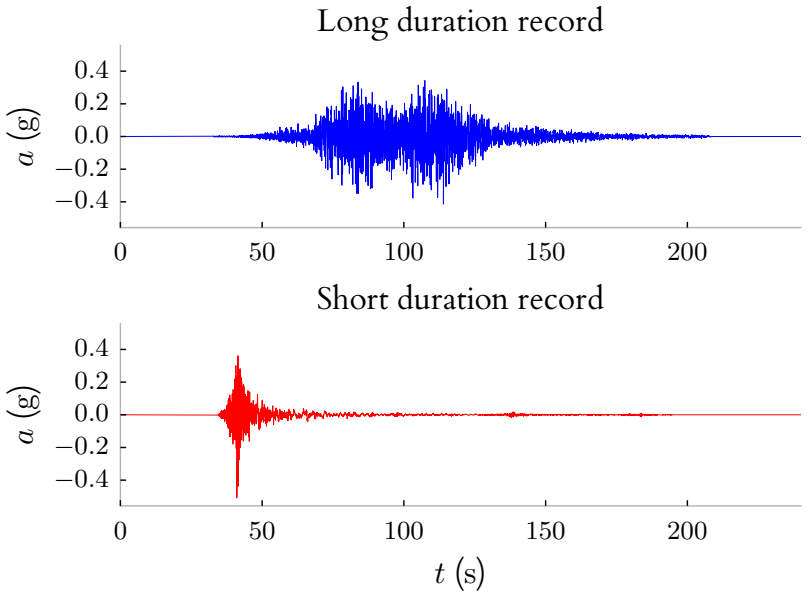
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Constitucion	CONSTITUCIONT.th	–	32
1999 Chi-Chi, Taiwan-03	TCU075	CHICHI.03/TCU075E.AT2	4.44	2



Spectrally equivalent record pair #83

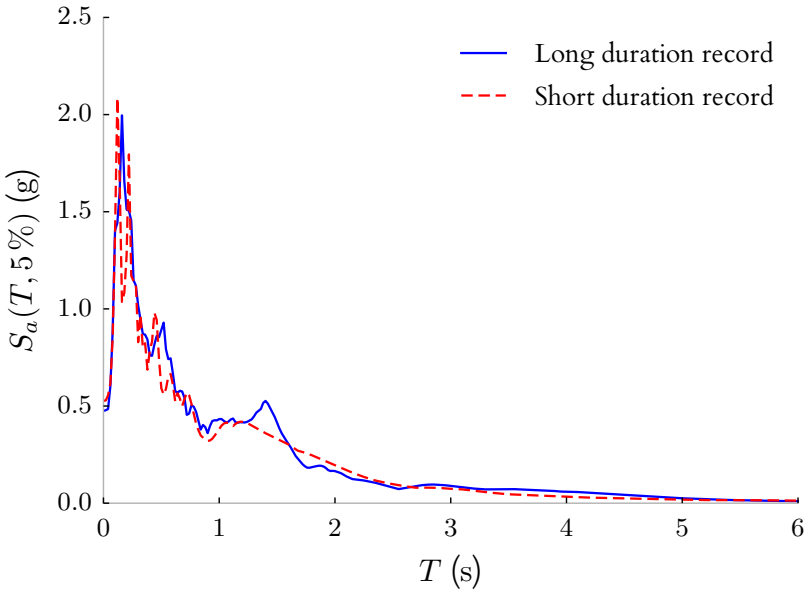
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Curico	CURICOEW.th	–	38
2004 Niigata, Japan	NIGH11	NIIGATA/NIGH11NS.AT2	1.09	4

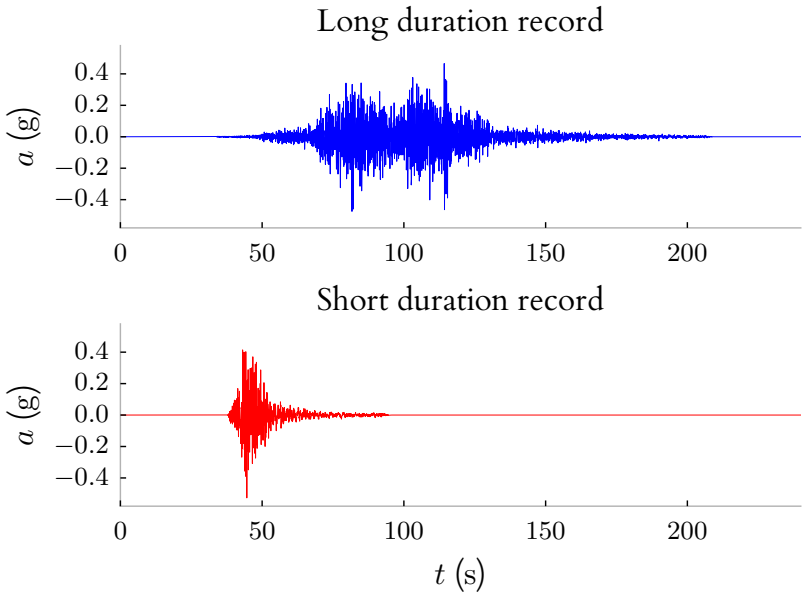




Spectrally equivalent record pair #84

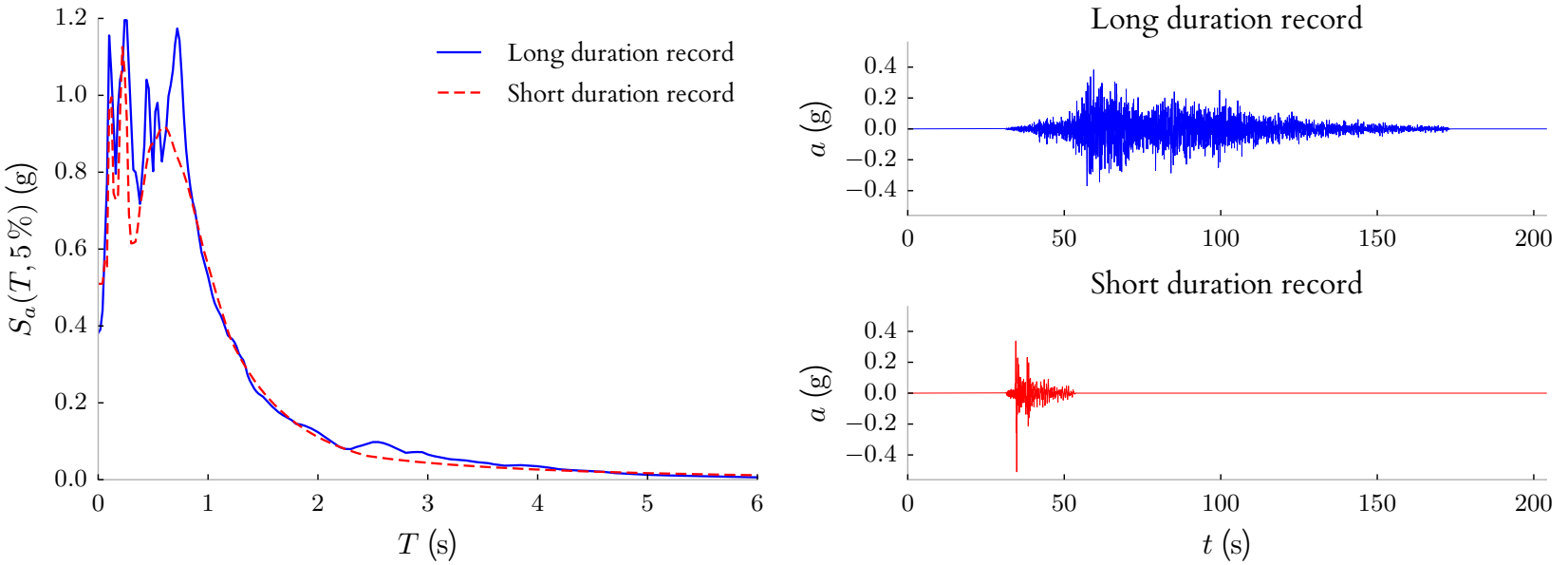
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Curico	CURICONS.th	–	37
1983 Coalinga-01	Parkfield - Stone Corral 3E	COALINGA.H/H-SC3090.AT2	5.00	5





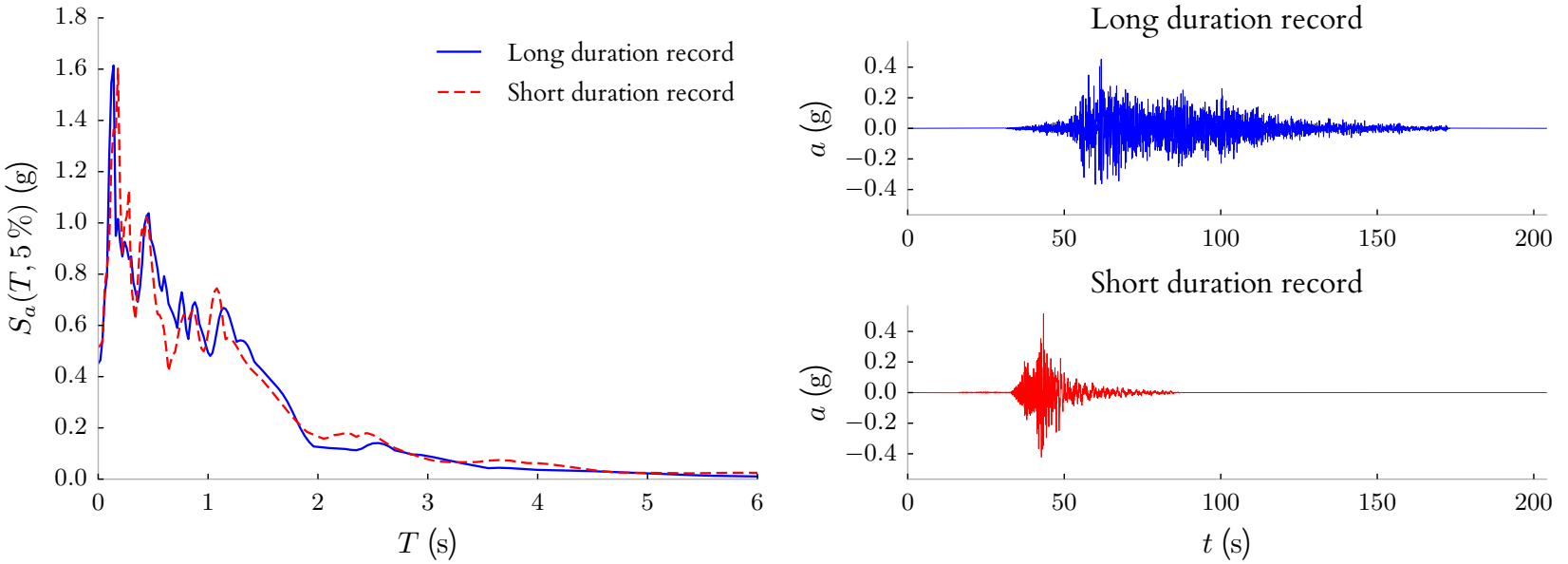
Spectrally equivalent record pair #85

Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Hualane	HUALANEL.th	–	34
1987 Whittier Narrows-02	La Habra - Briarcliff	WHITTIER.B/B-BRC090.AT2	5.00	4



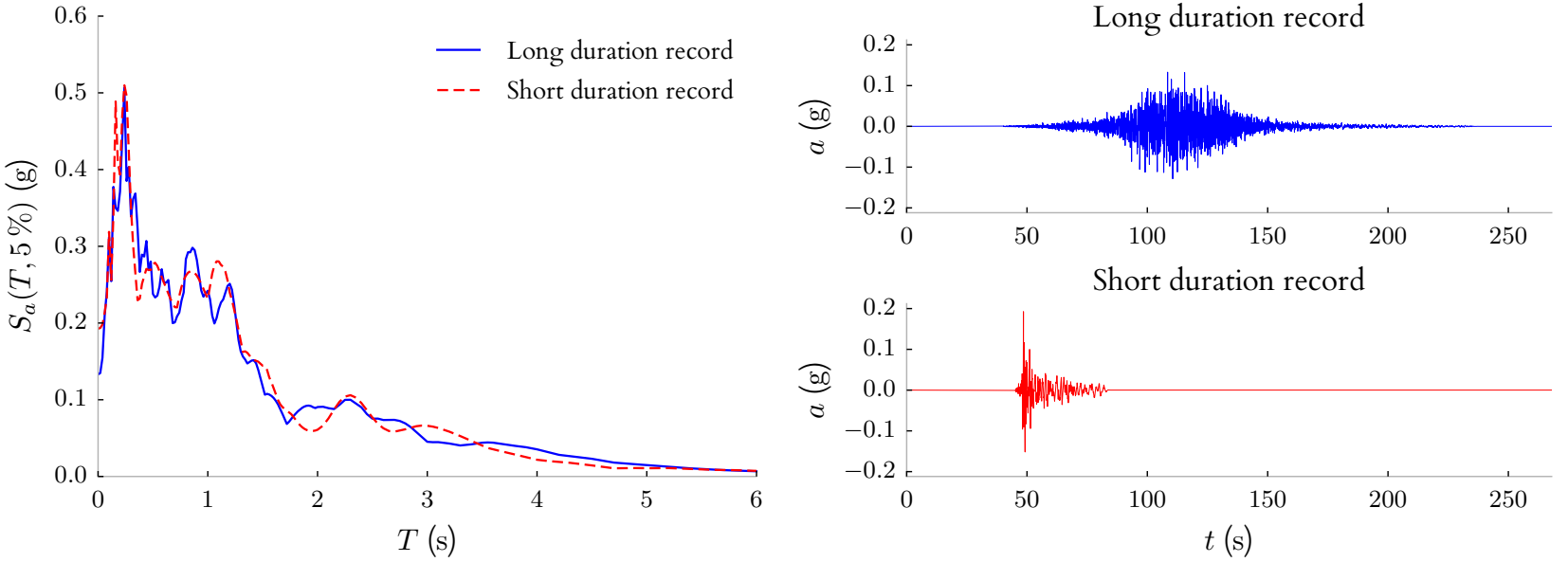
Spectrally equivalent record pair #86

Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Hualane	HUALANET.th	–	34
1999 Chi-Chi, Taiwan-06	TCU122	CHICHI.06/TCU122N.AT2	4.05	8



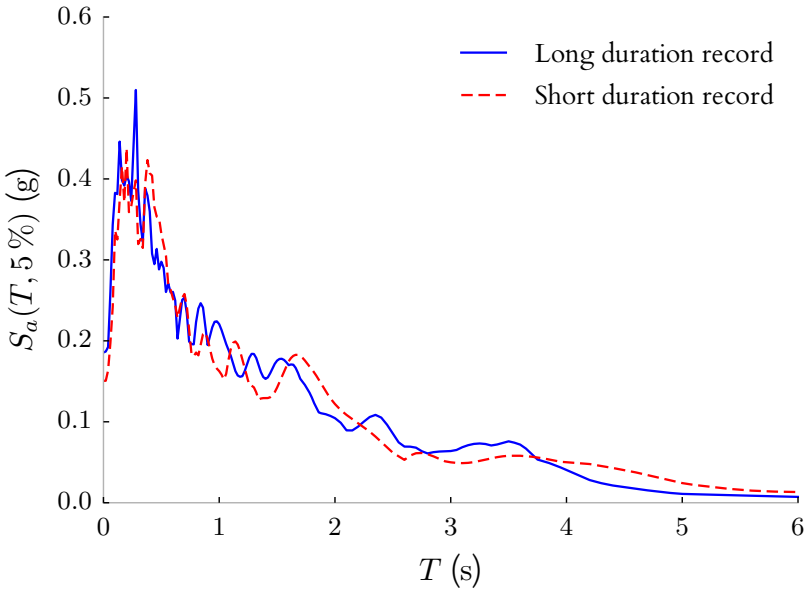
Spectrally equivalent record pair #87

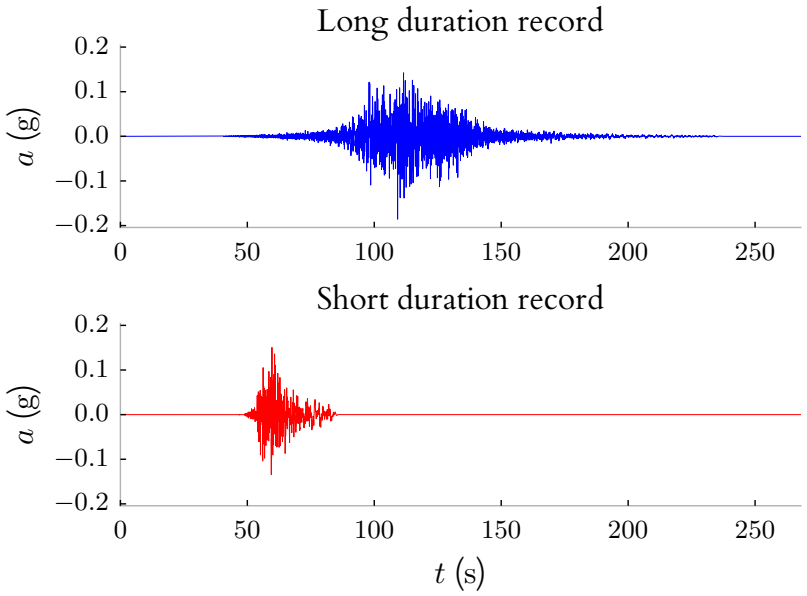
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Santiago La Florida	STGOLAFLORIDAEW.th	–	28
1986 Chalfant Valley-01	Bishop - LADWP South St	CHALFANT.B/B-LAD180.AT2	1.53	8



Spectrally equivalent record pair #88

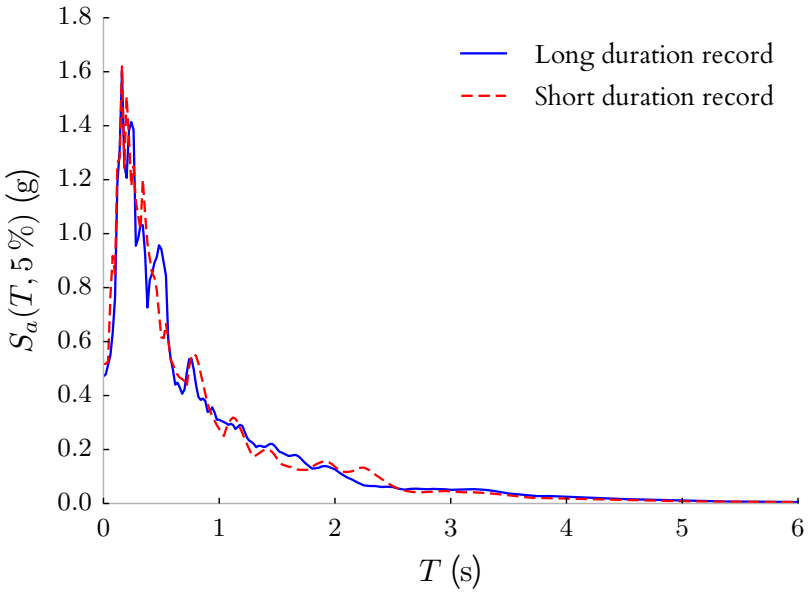
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Santiago La Florida	STGOLAFLORIDANS.th	–	26
1994 Northridge-01	LA - Pico & Sentous	NORTHR/PIC090.AT2	1.46	9

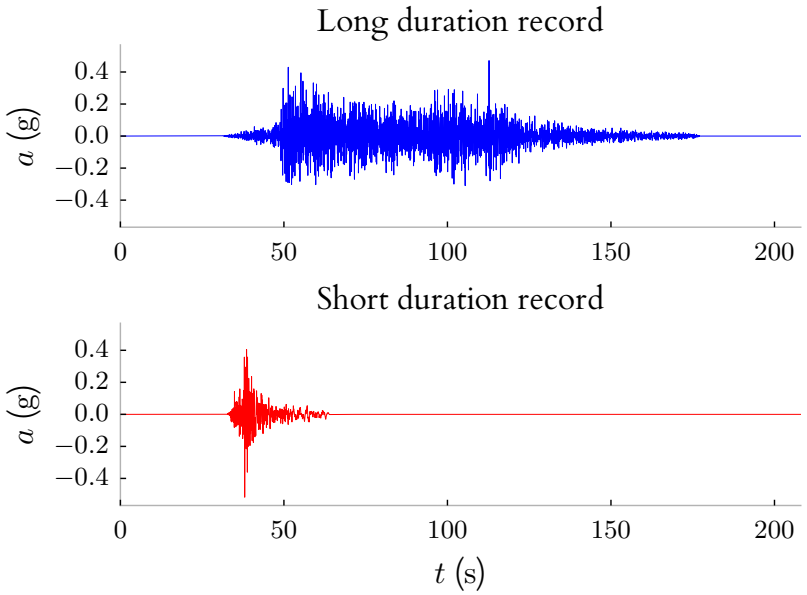




Spectrally equivalent record pair #89

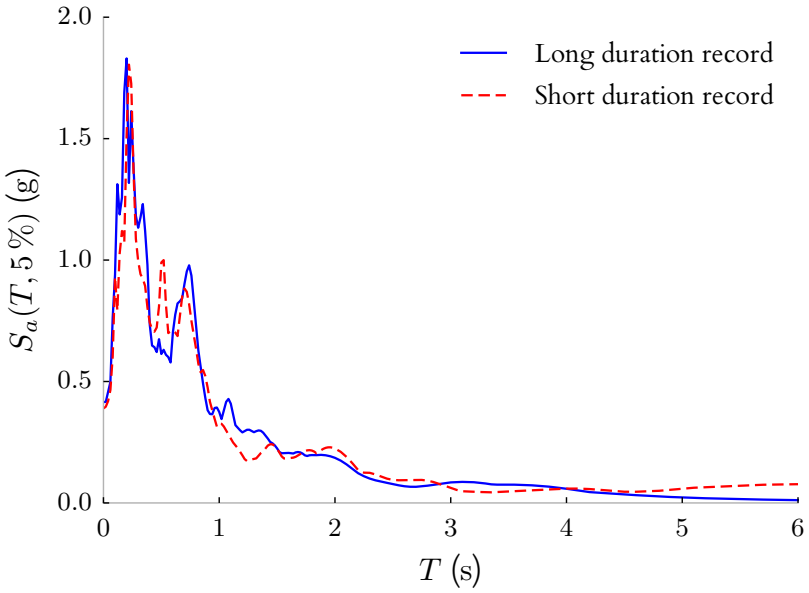
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Talca	TALCAL.th	–	51
1981 Taiwan SMART1(5)	SMART1 M10	SMART1.05/05M10EW.AT2	3.98	4

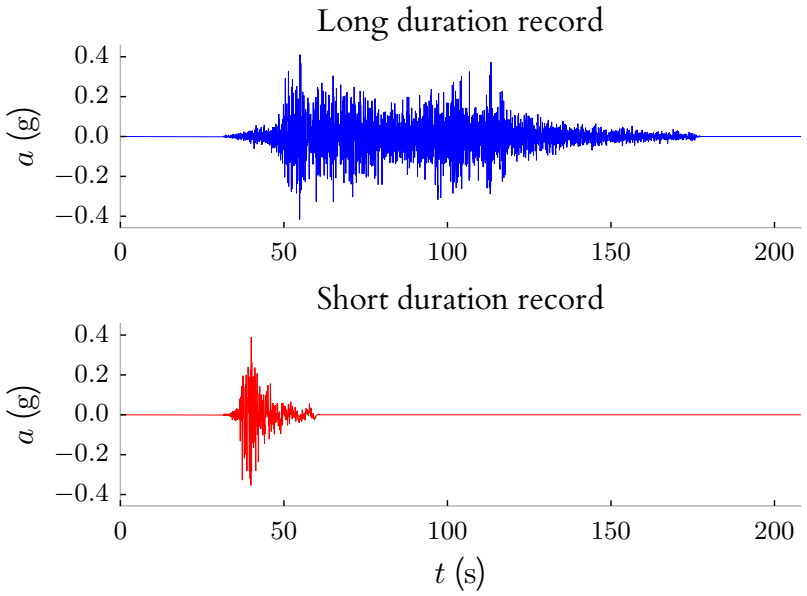




Spectrally equivalent record pair #90

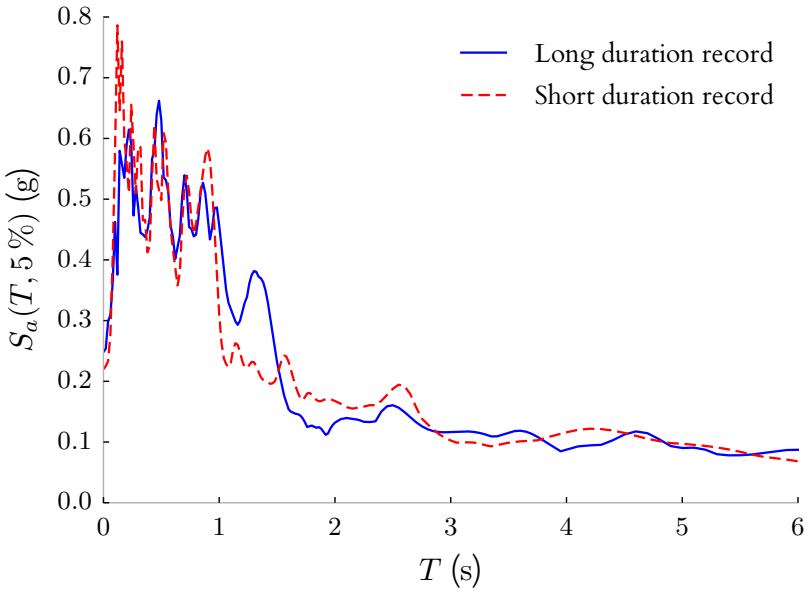
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 Maule, Chile	Talca	TALCAT.th	–	52
2011 Christchurch, New Zealand	Kaiapoi North School	CCHURCH/KPOCS75E.AT2	1.80	5

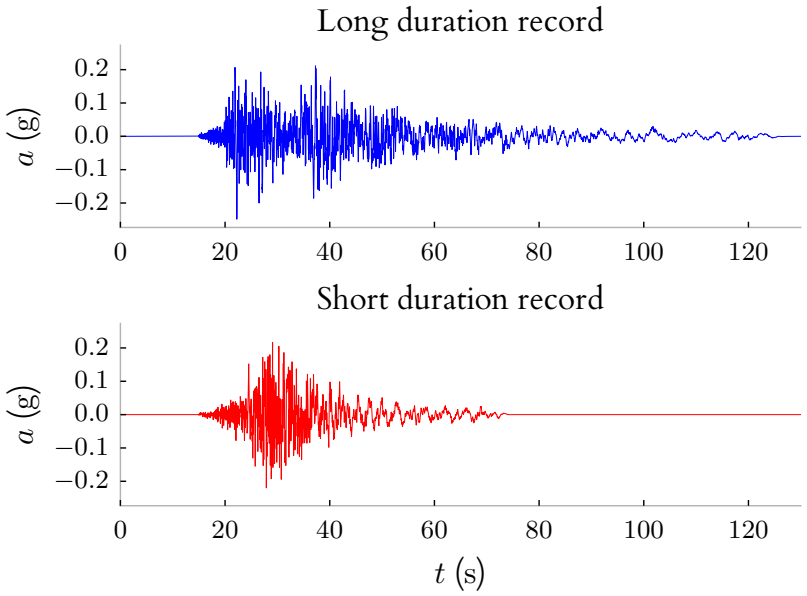




Spectrally equivalent record pair #91

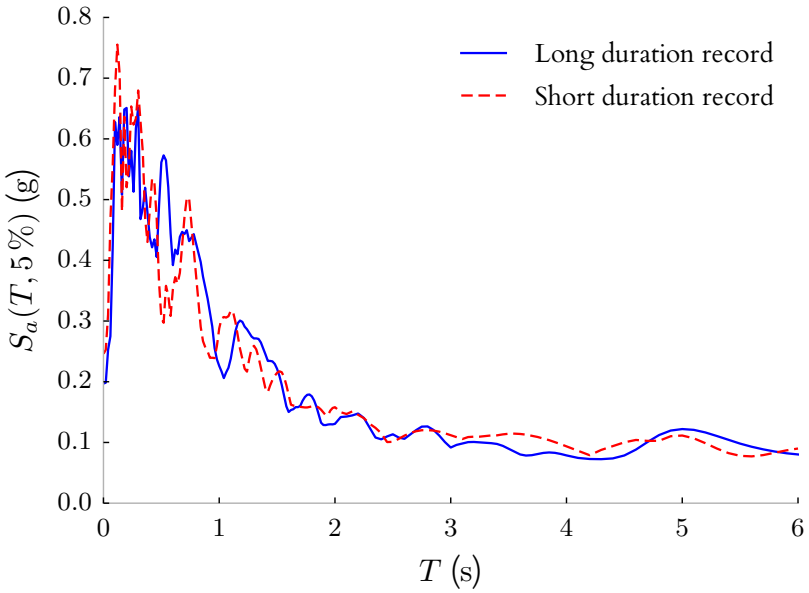
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 El Mayor-Cucapah	Chihuahua	SIERRA.MEX/CHI000.AT2	–	24
1999 Hector Mine	Amboy	HECTOR/ABY360.AT2	1.47	11

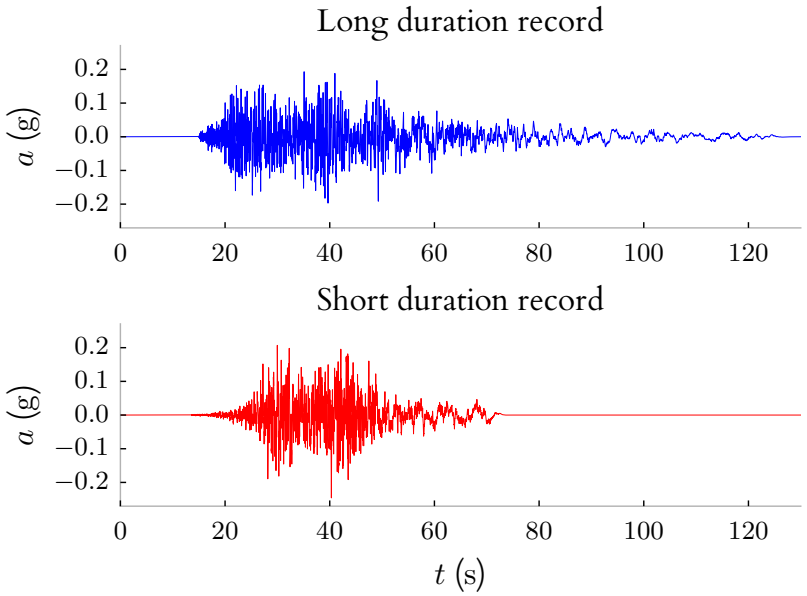




Spectrally equivalent record pair #92

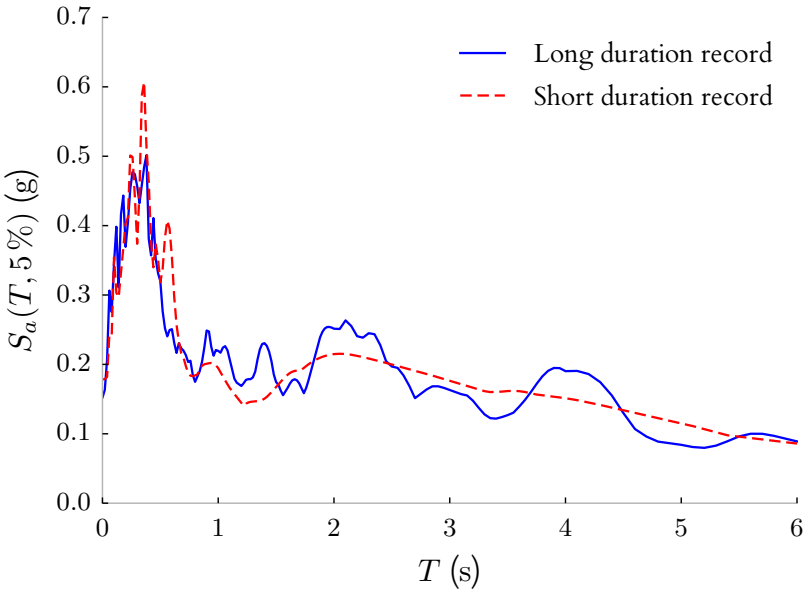
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 El Mayor-Cucapah	Chihuahua	SIERRA.MEX/CHI090.AT2	–	27
2010 Darfield, New Zealand	DORC	DARFIELD/DORCN20W.AT2	2.97	16

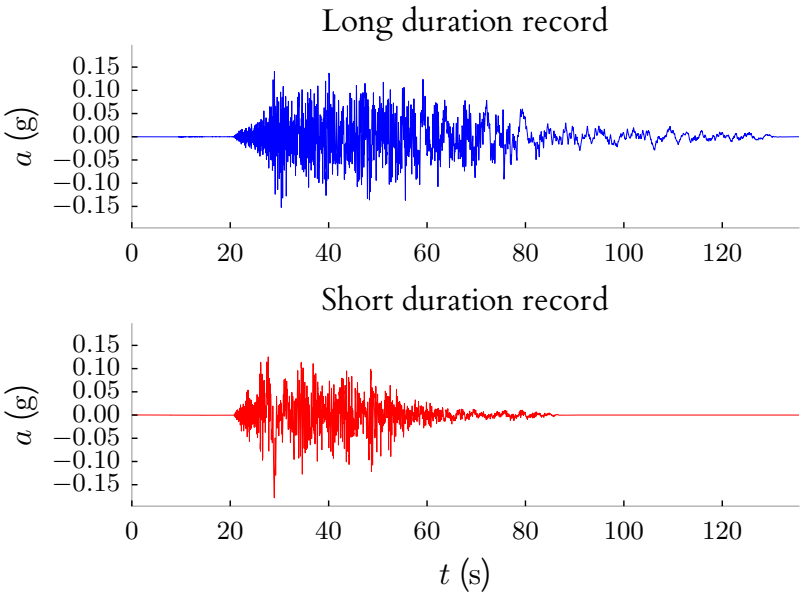




Spectrally equivalent record pair #93

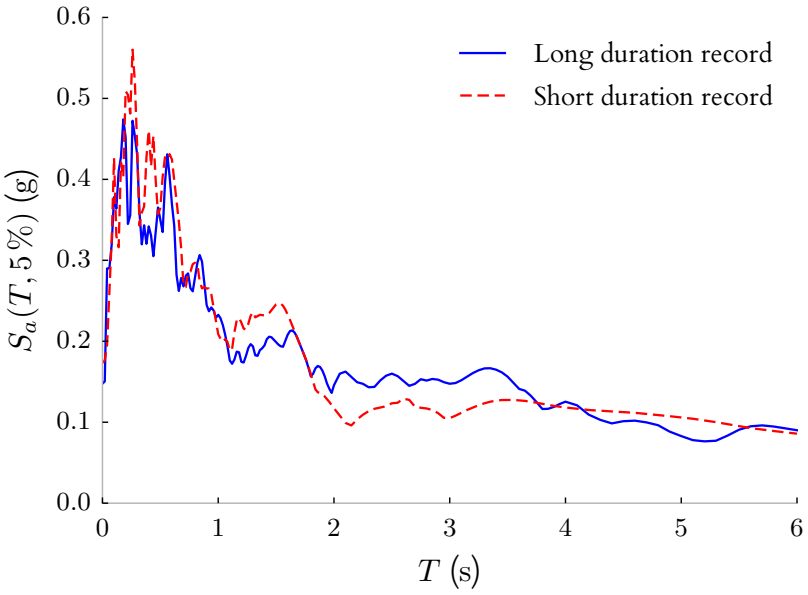
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 El Mayor-Cucapah	Ejido Saltillo	SIERRA.MEX/SAL000.AT2	–	33
1999 Chi-Chi, Taiwan	TCU075	CHICHI/TCU075-E.AT2	0.54	18

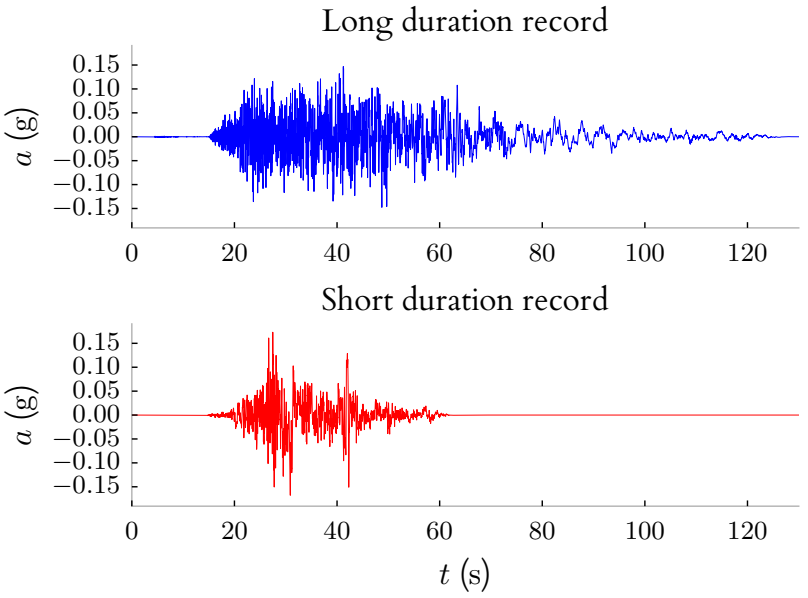




Spectrally equivalent record pair #94

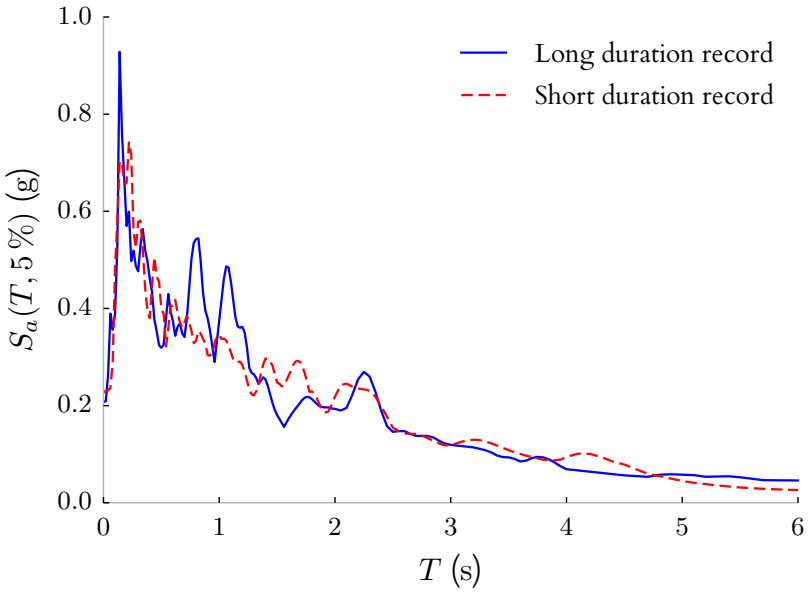
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 El Mayor-Cucapah	Ejido Saltillo	SIERRA.MEX/SAL090.AT2	–	33
1999 Chi-Chi, Taiwan	TCU101	CHICHI/TCU101-E.AT2	0.82	16

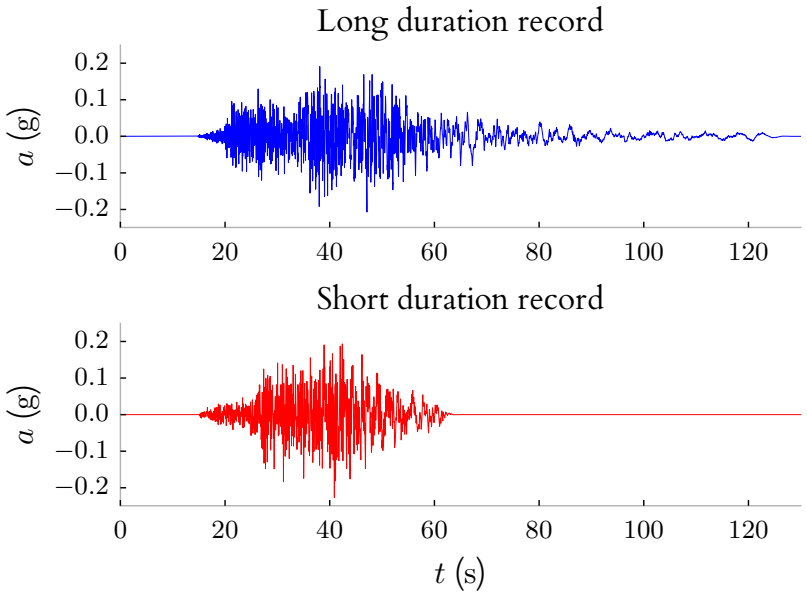




Spectrally equivalent record pair #95

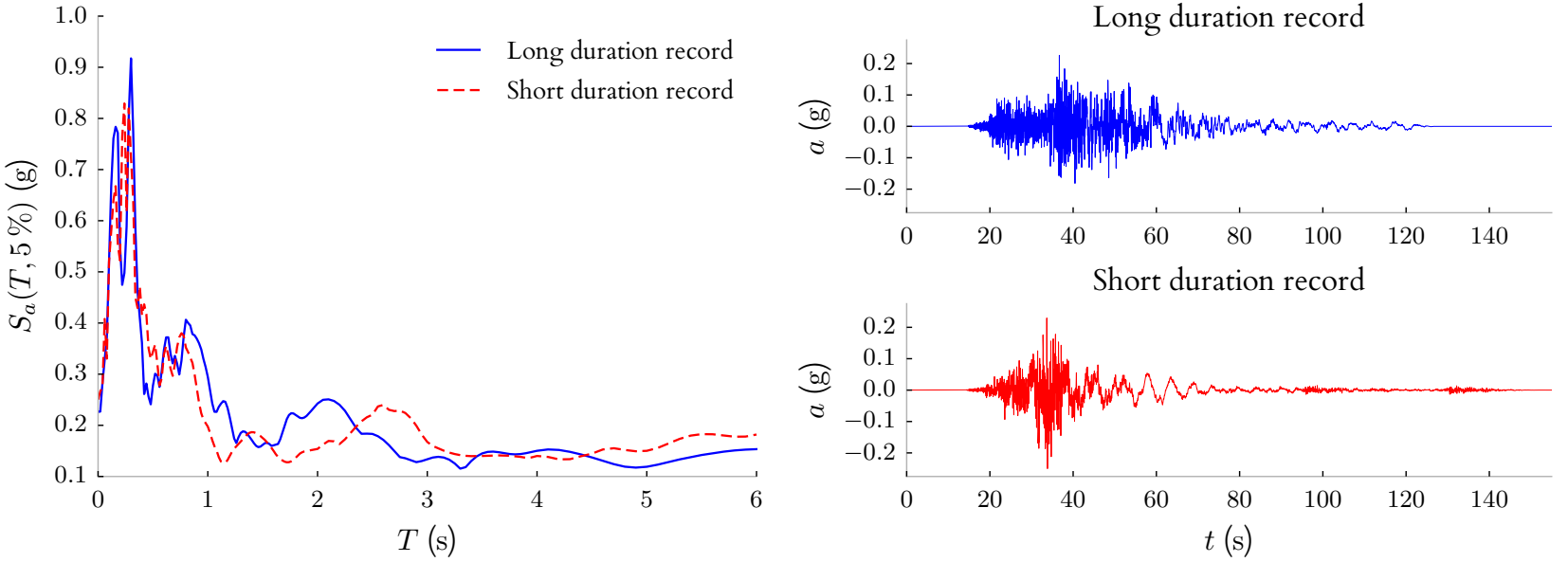
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 El Mayor-Cucapah	Tamaulipas	SIERRA.MEX/TAM000.AT2	–	27
1992 Landers	Amboy	LANDERS/ABY090.AT2	1.55	17





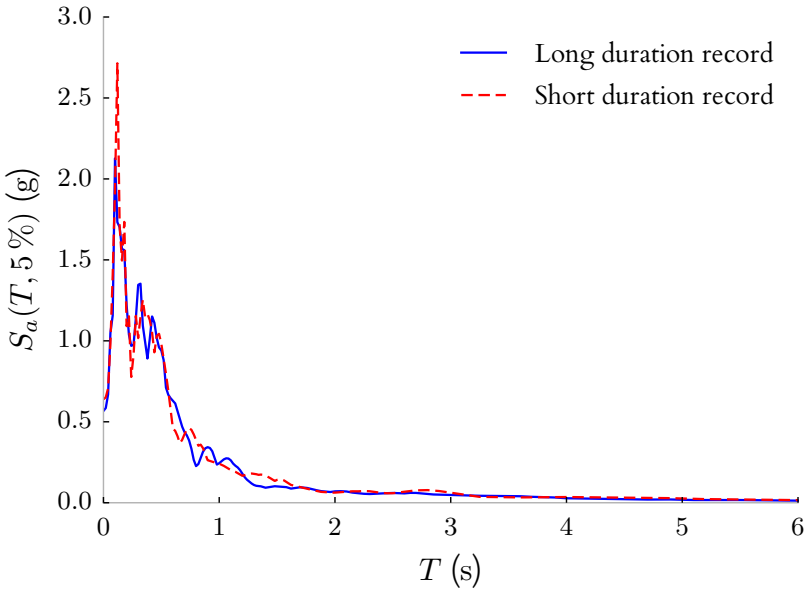
Spectrally equivalent record pair #96

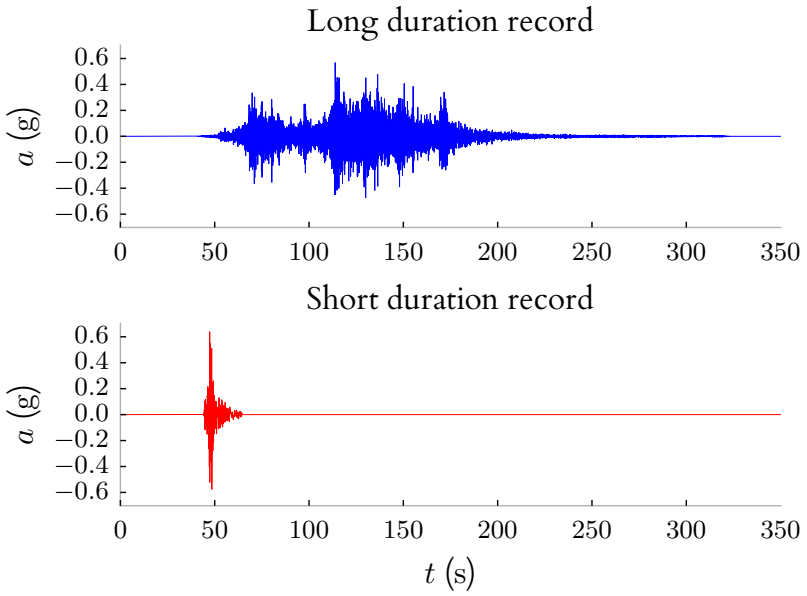
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2010 El Mayor-Cucapah	Tamaulipas	SIERRA.MEX/TAM090.AT2	–	28
2010 Darfield, New Zealand	Canterbury Aero Club	DARFIELD/CACSN50W.AT2	1.26	15



Spectrally equivalent record pair #97

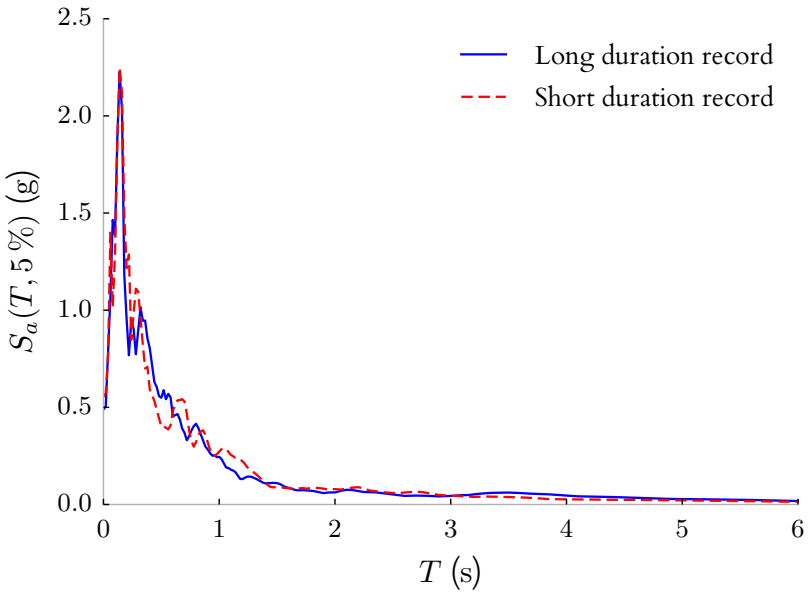
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Yanagawa	FKS0021103111446_H1.th	–	74
1983 Coalinga-05	Palmer Ave	COALINGA/D-PLM270.AT2	2.27	2

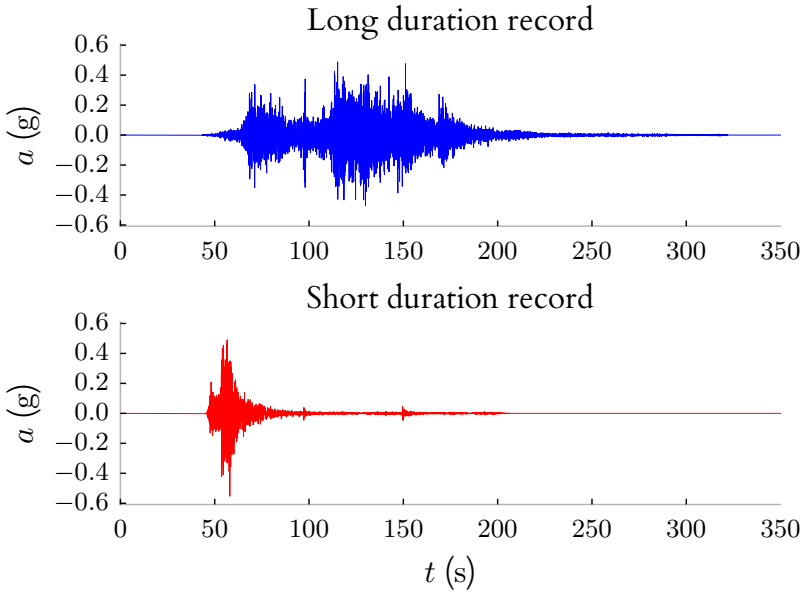




Spectrally equivalent record pair #98

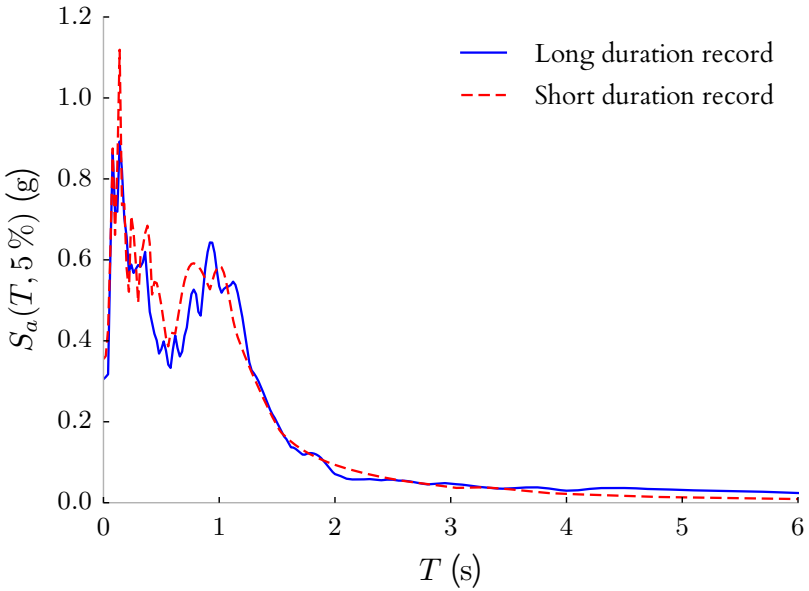
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Yanagawa	FKS0021103111446_H2.th	–	71
2004 Niigata, Japan	NIGH10	NIIGATA/NIGH10EW.AT2	4.11	6

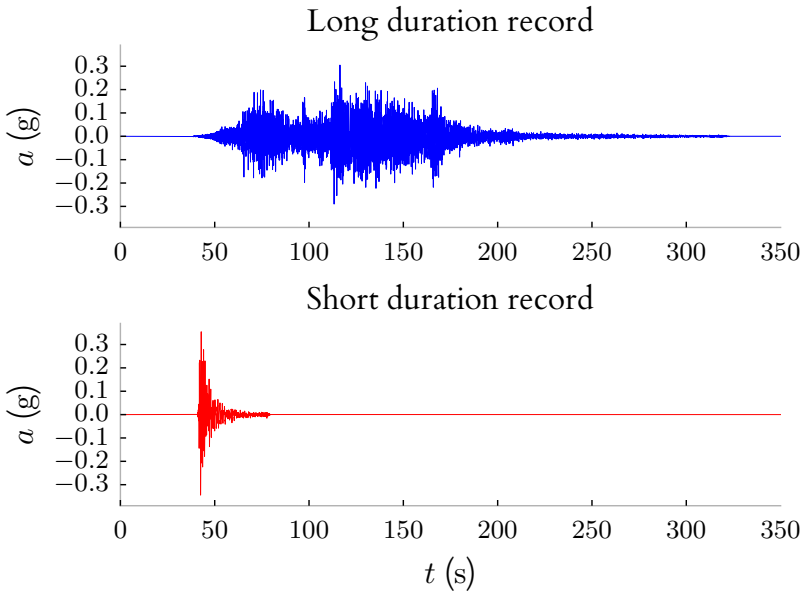




Spectrally equivalent record pair #99

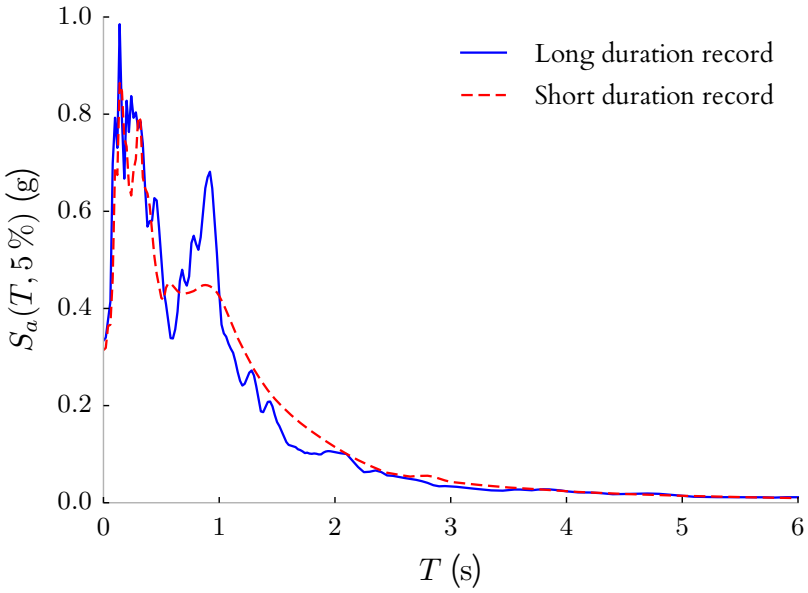
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Fukushima	FKS0031103111446_H1.th	–	77
1983 Mammoth Lakes-11	Convict Creek	MAMMOTH.AH/G-CVK180.AT2	4.14	4

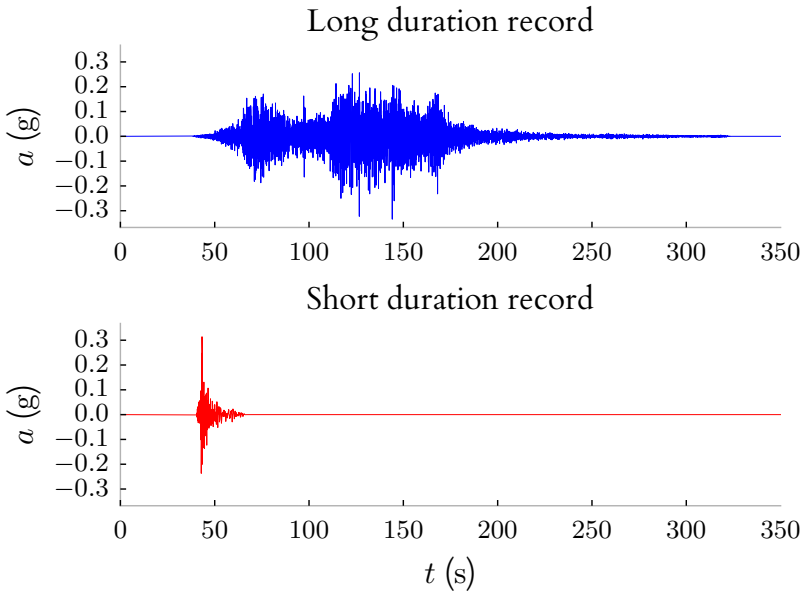




Spectrally equivalent record pair #100

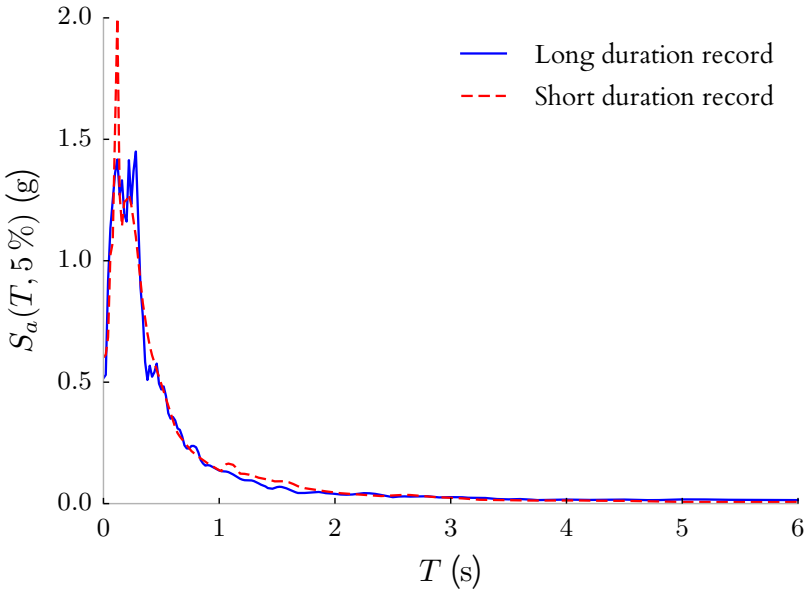
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Fukushima	FKS0031103111446_H2.th	–	76
1979 Coyote Lake	Gilroy Array #3	COYOTELK/G03140.AT2	1.22	2

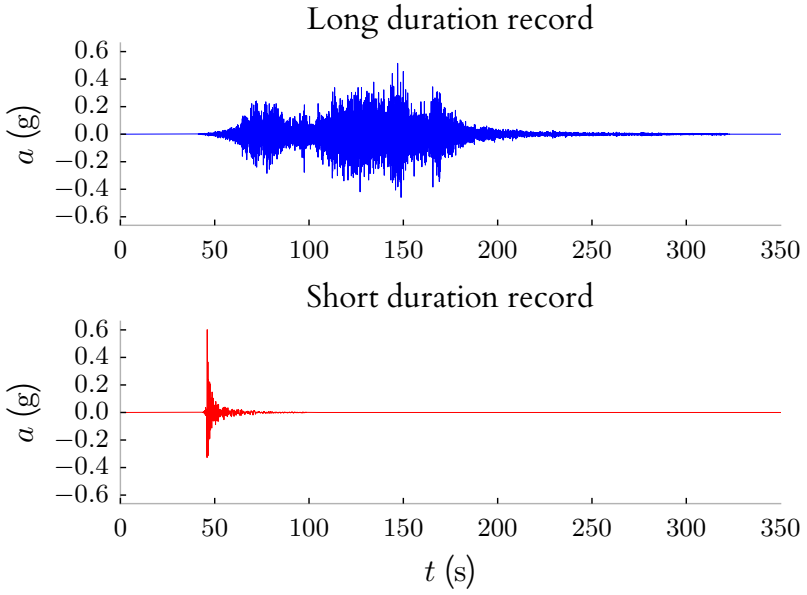




Spectrally equivalent record pair #101

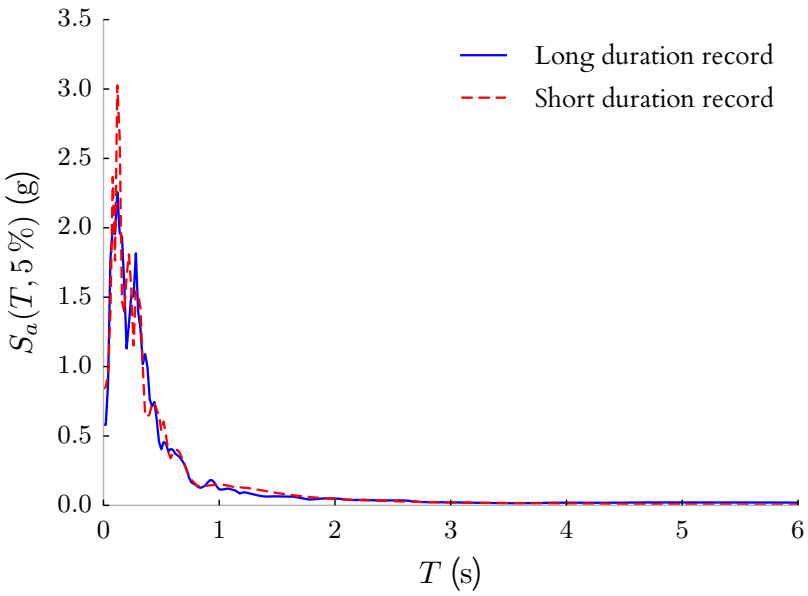
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Iitate	FKS0041103111446_H1.th	–	76
1983 Coalinga-05	Coalinga-14th & Elm (Old CHP)	COALINGA/D-CHP090.AT2	1.16	1

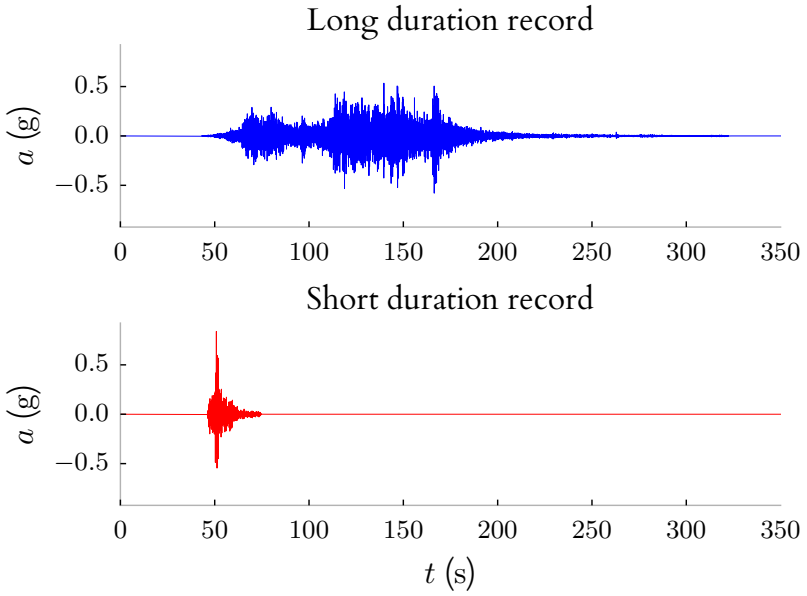




Spectrally equivalent record pair #102

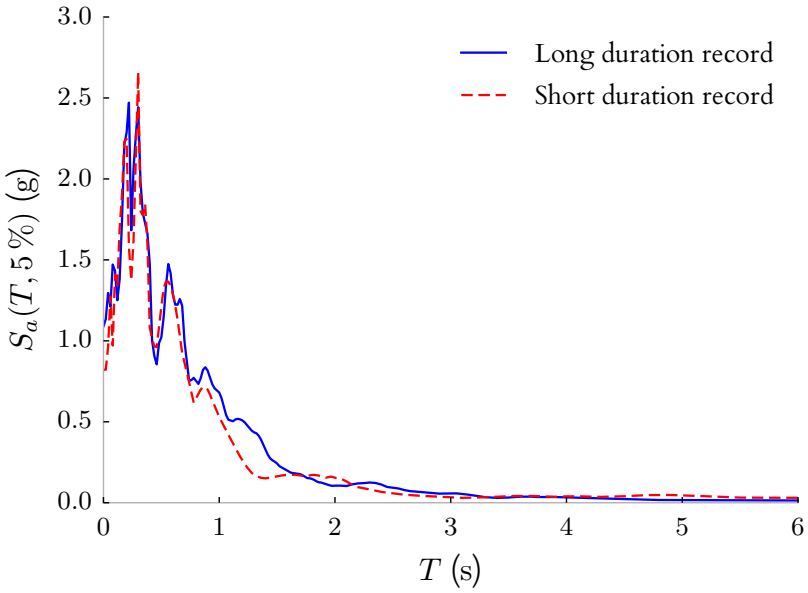
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Iitate	FKS0041103111446_H2.th	–	78
1987 Whittier Narrows-01	Orange Co. Reservoir	WHITTIER.A/A-ORN096.AT2	4.03	3

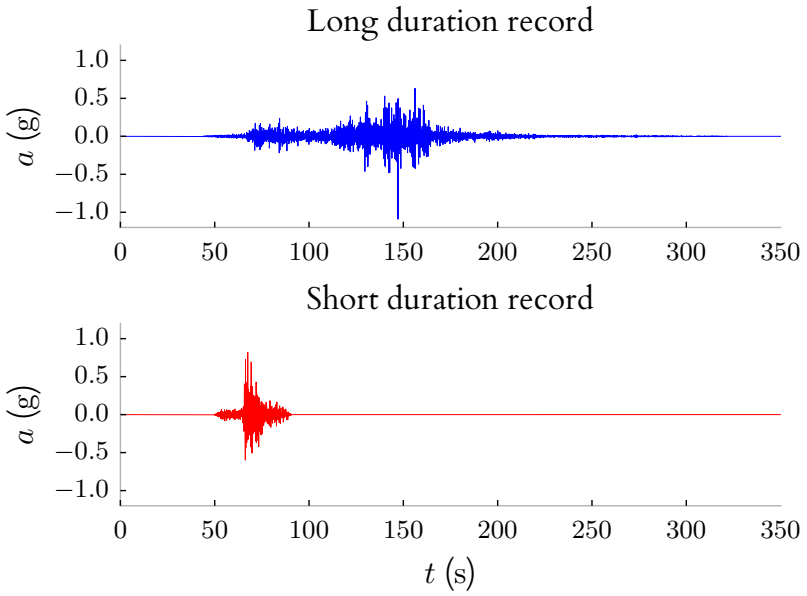




Spectrally equivalent record pair #103

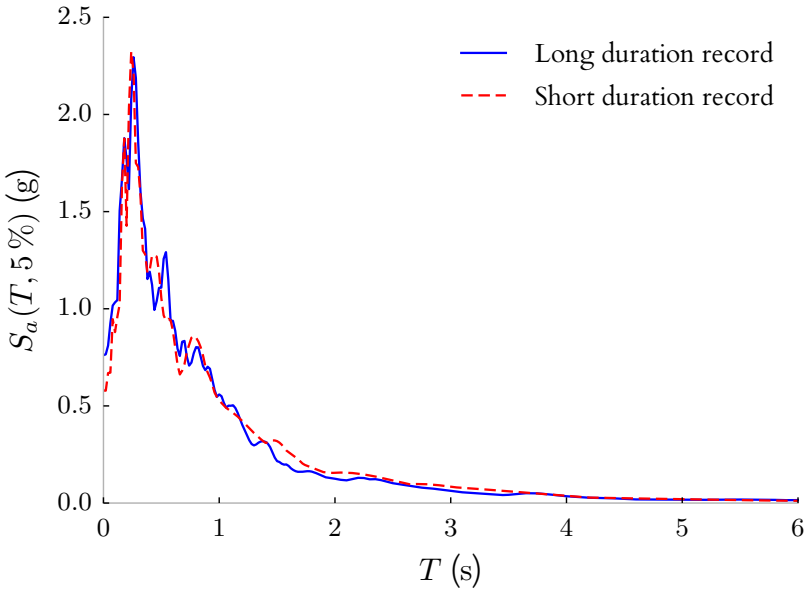
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Kohriyama	FKS0181103111446_H1.th	–	70
2008 Iwate	Shinchicho Yacigoya	IWATE/57059EW.AT2	5.00	6

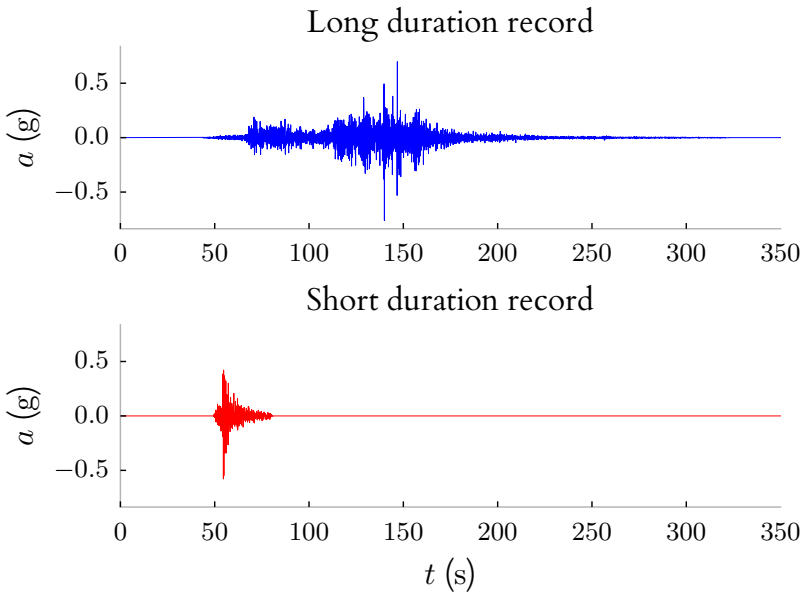




Spectrally equivalent record pair #104

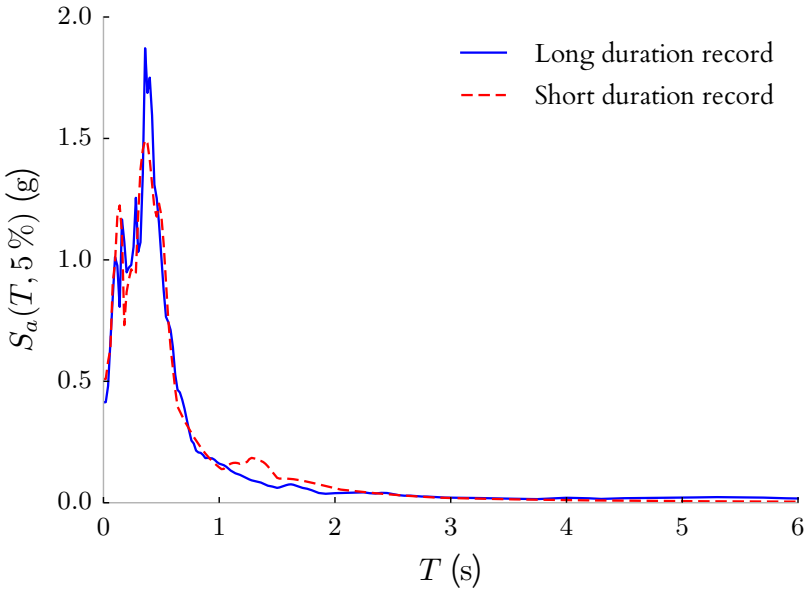
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Kohriyama	FKS0181103111446_H2.th	–	67
1981 Taiwan SMART1(5)	SMART1 M02	SMART1.05/05M02NS.AT2	4.76	3

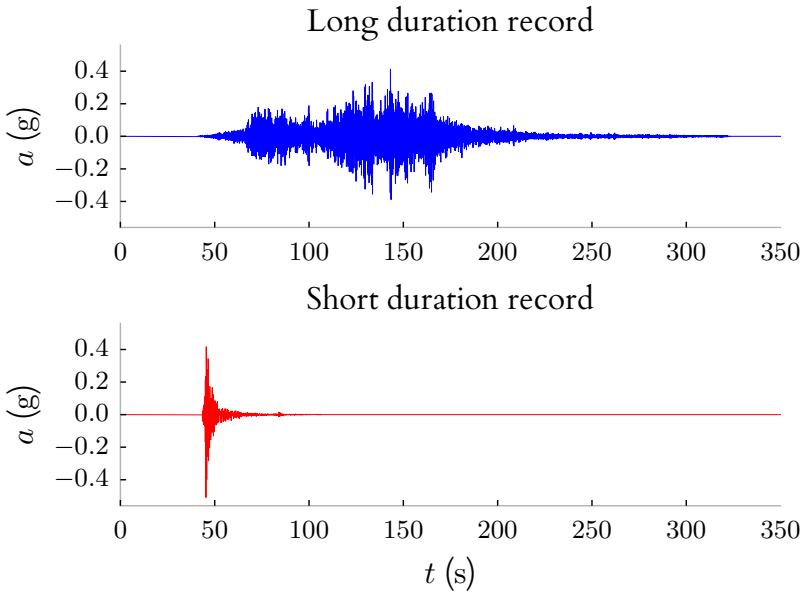




Spectrally equivalent record pair #105

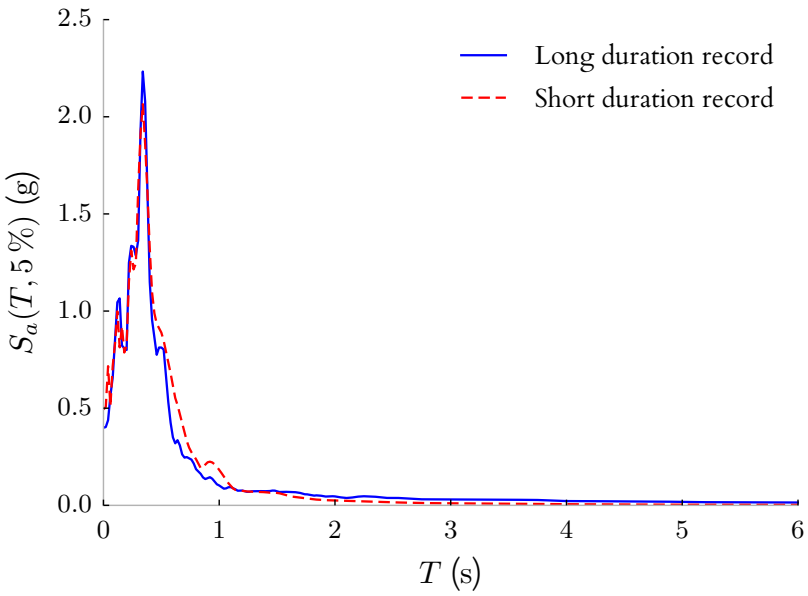
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Nihommatsu	FKS0191103111446_H1.th	–	76
2003 Big Bear City	Big Bear Solar Observatory	BEARCTY/CIBBRHLN.AT2	4	2

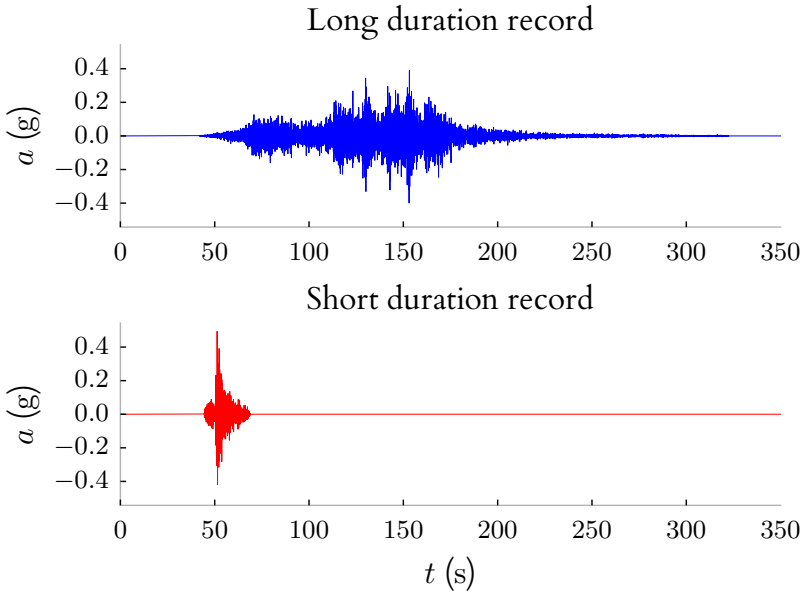




Spectrally equivalent record pair #106

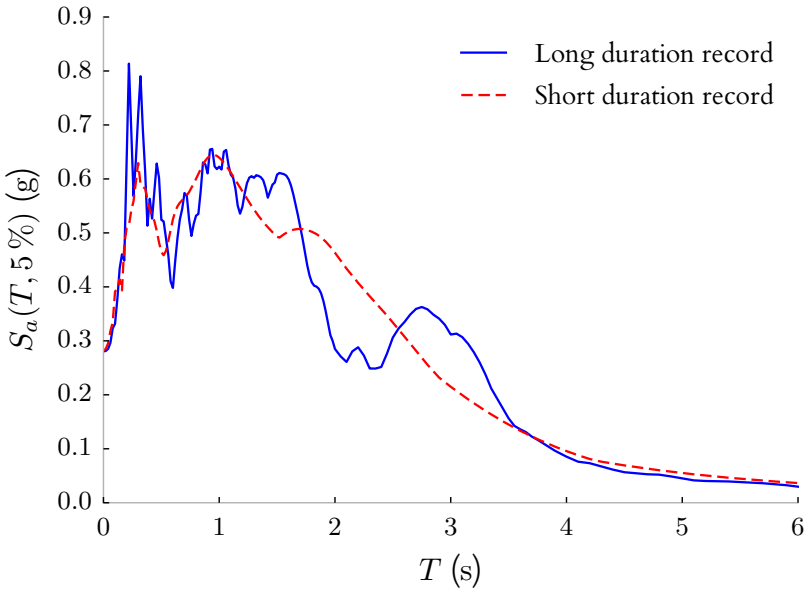
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Nihommatsu	FKS0191103111446_H2.th	–	74
1987 Whittier Narrows-01	Canyon Country - W Lost Cany	WHITTIER.A/A-LOS000.AT2	4.29	3

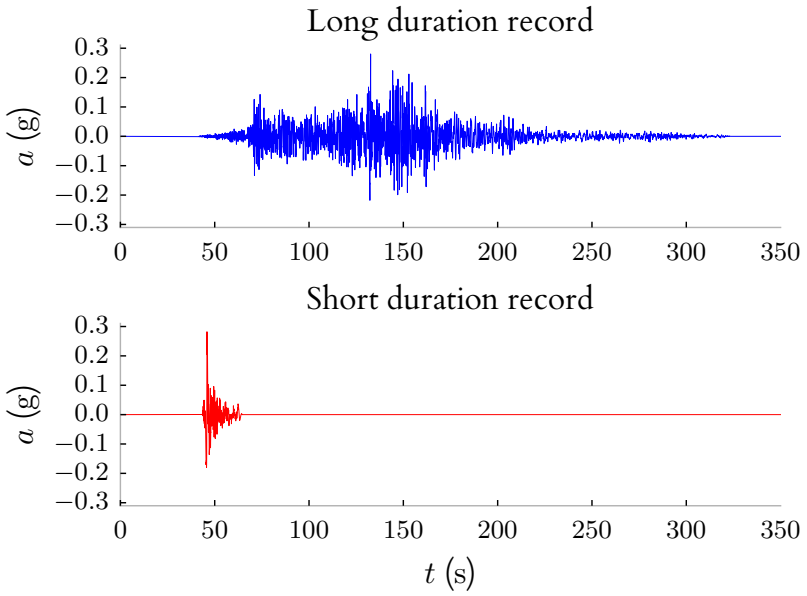




Spectrally equivalent record pair #107

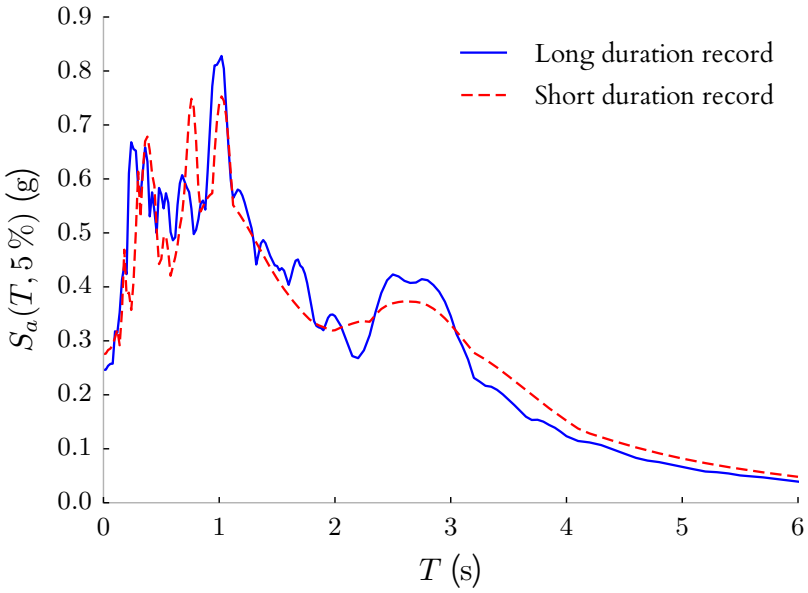
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Inawashiro	FKS0201103111446_H1.th	–	80
1992 Erzican, Turkey	Erzincan	ERZINCAN/ERZ-NS.AT2	0.73	2

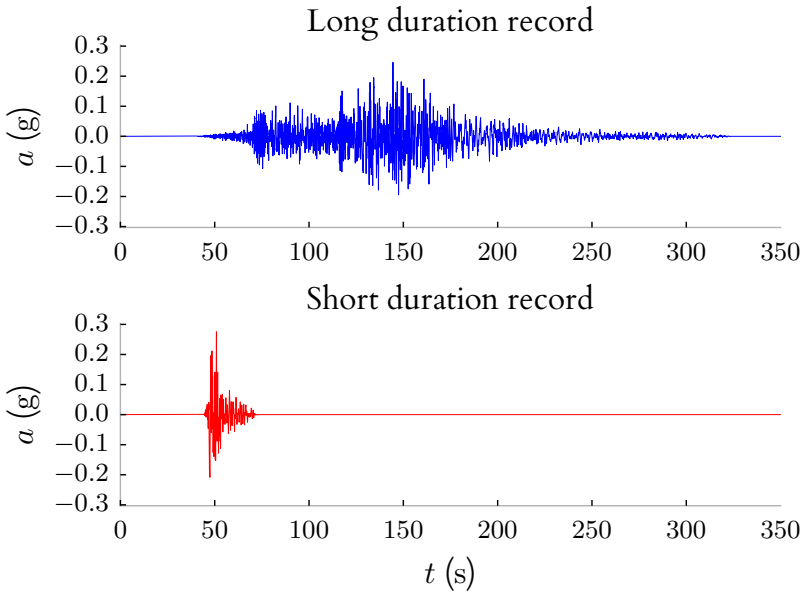




Spectrally equivalent record pair #108

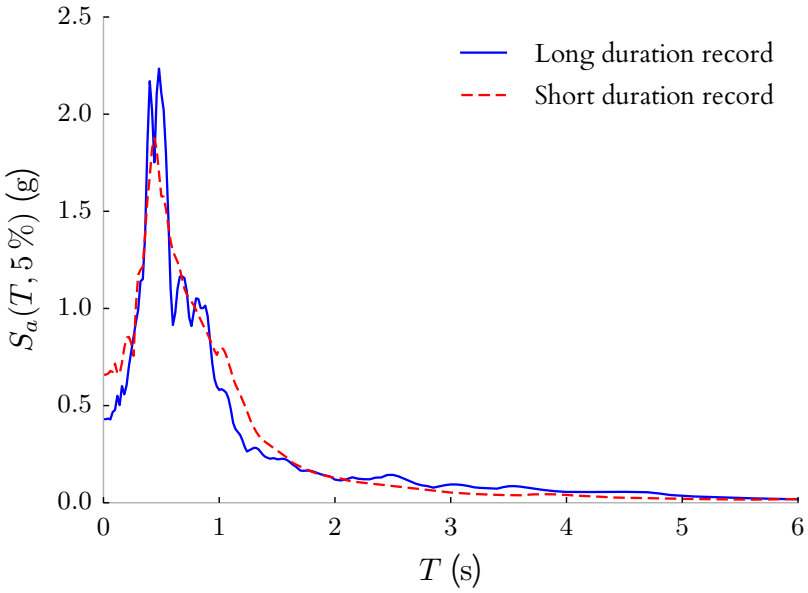
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Inawashiro	FKS0201103111446_H2.th	–	80
1994 Northridge-01	Jensen Filter Plant Administrative Building	NORTHR/JEN022.AT2	0.67	4

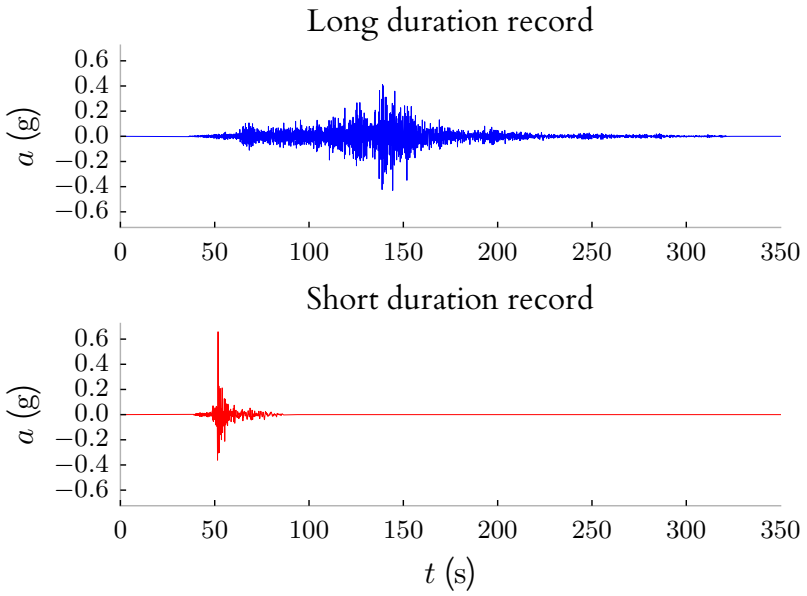




Spectrally equivalent record pair #109

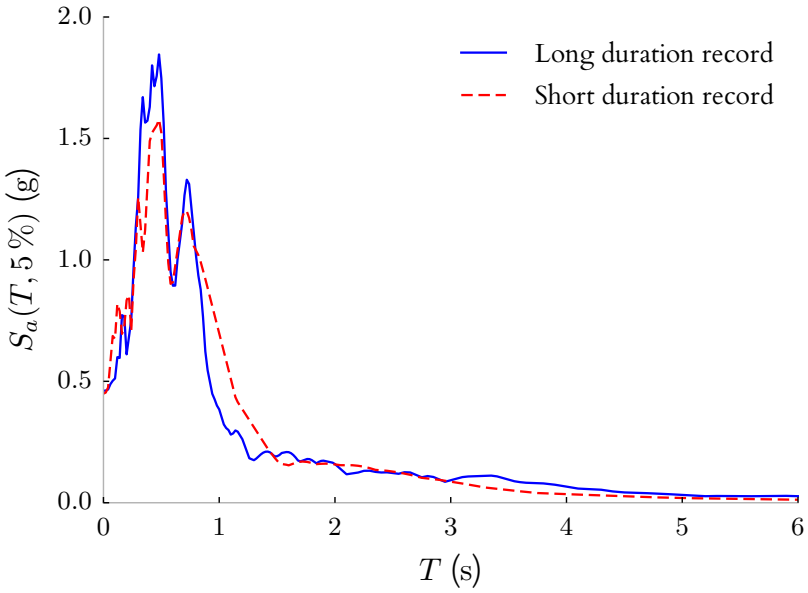
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Aiduwakamatsu	FKS0231103111446_H1.th	–	57
2007 Chuetsu-oki	Toyotsu Nakano	CHUETSU/70031NS.AT2	2.28	2

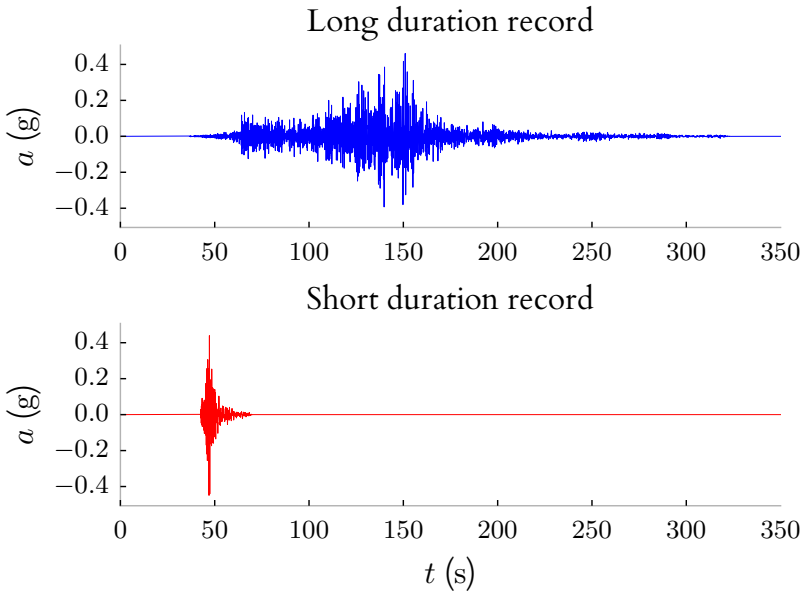




Spectrally equivalent record pair #110

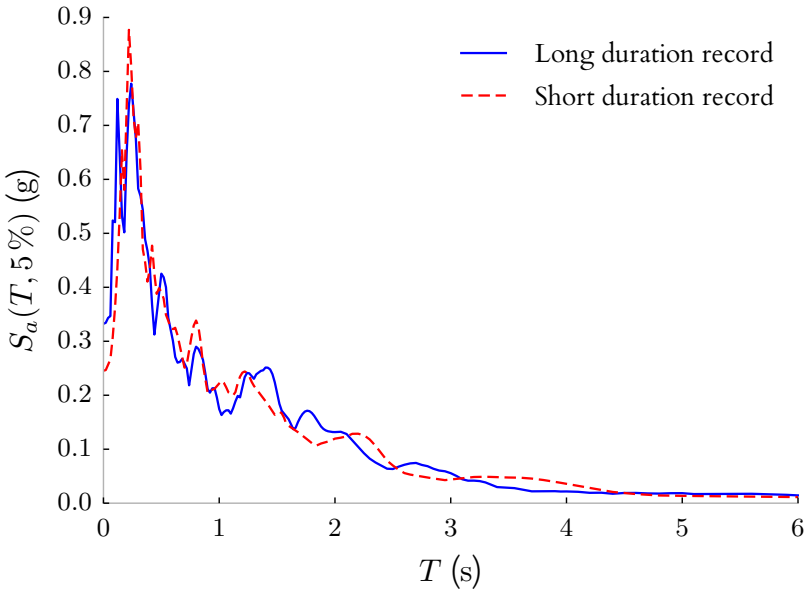
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Aiduwakamatsu	FKS0231103111446_H2.th	–	69
1984 Morgan Hill	Anderson Dam (Downstream)	MORGAN/AND340.AT2	1.55	2

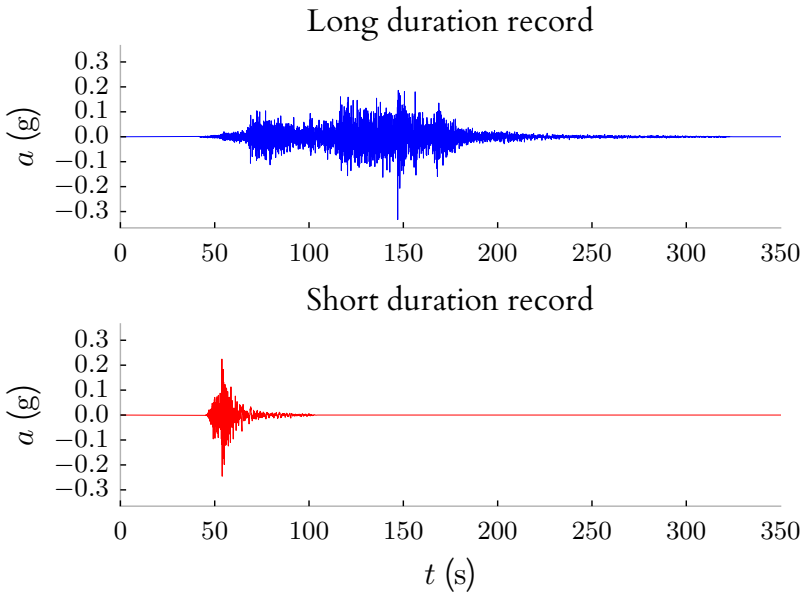




Spectrally equivalent record pair #111

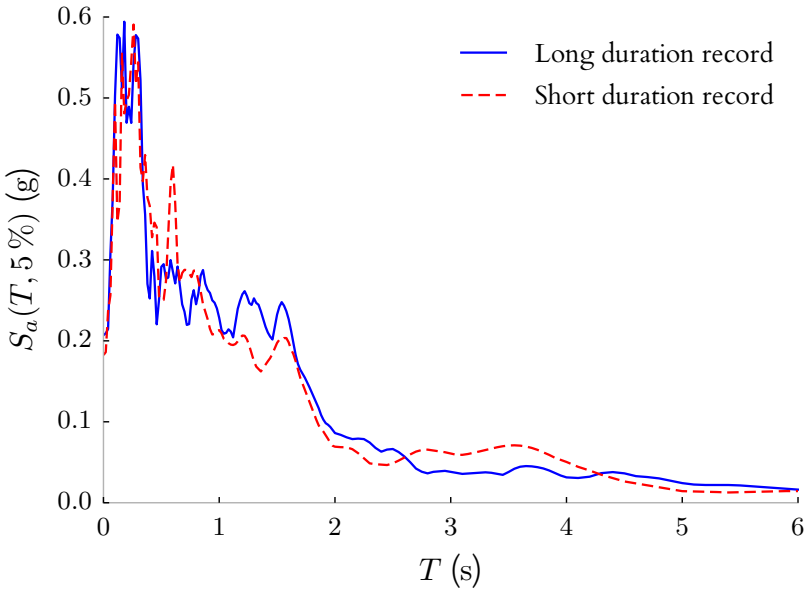
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Fukushima	FKSH161103111446_H1.th	–	77
1999 Chi-Chi, Taiwan-06	CHY024	CHICHI.06/CHY024N.AT2	1.78	7

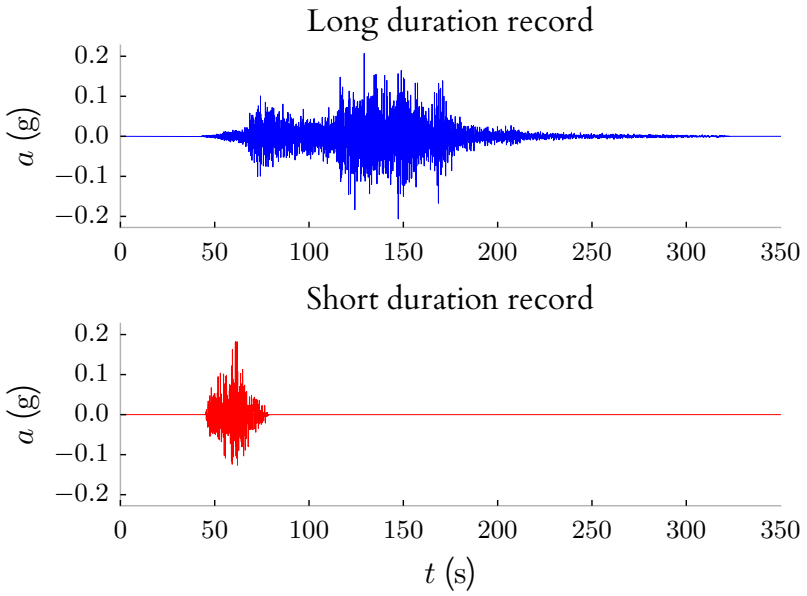




Spectrally equivalent record pair #112

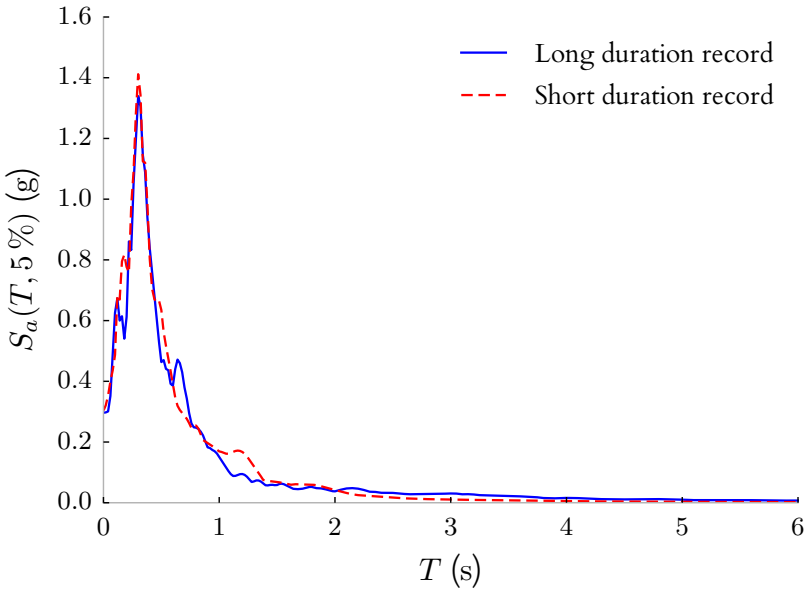
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Fukushima	FKSH161103111446_H2.th	–	77
1980 Irpinia, Italy-01	Auletta	ITALY/A-AUL270.AT2	3.19	13

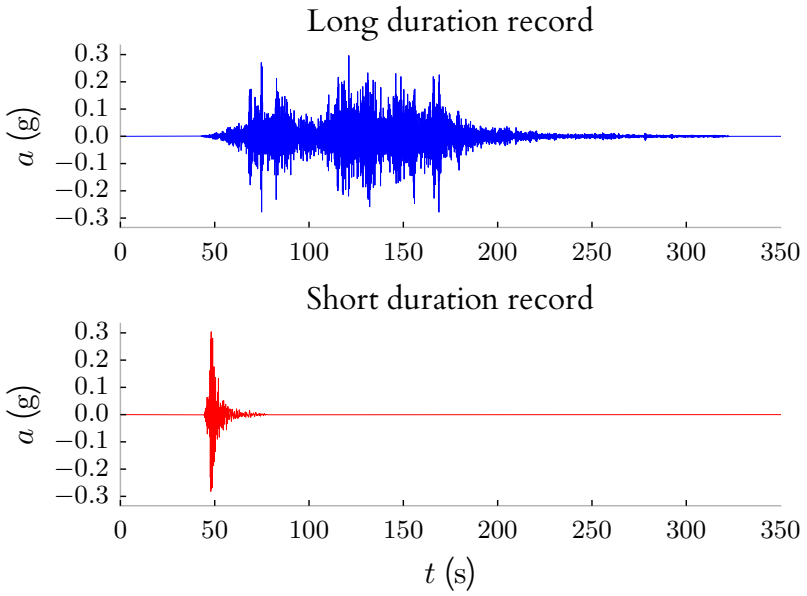




Spectrally equivalent record pair #113

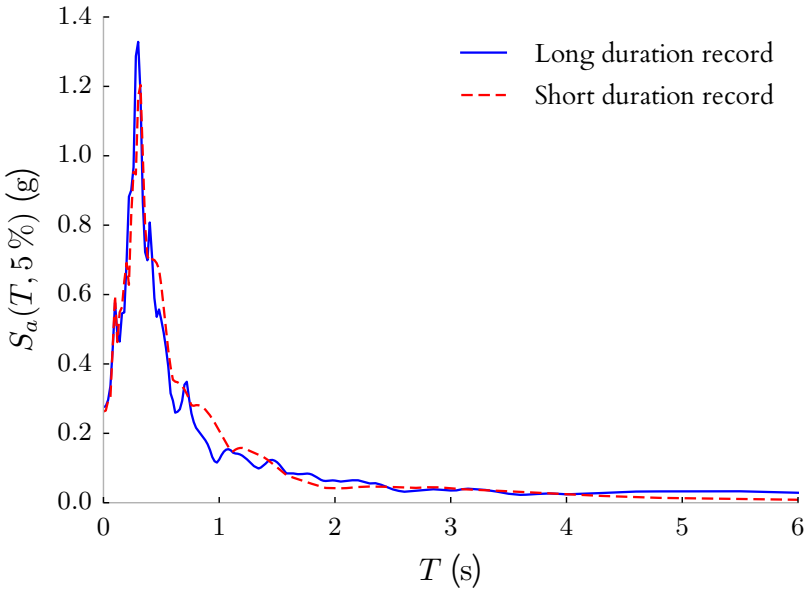
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Kawamata	FKSH171103111446_H1.th	–	81
2000 Yountville	Napa - Napa College	YOUNTVL/NAP360.AT2	1.67	2

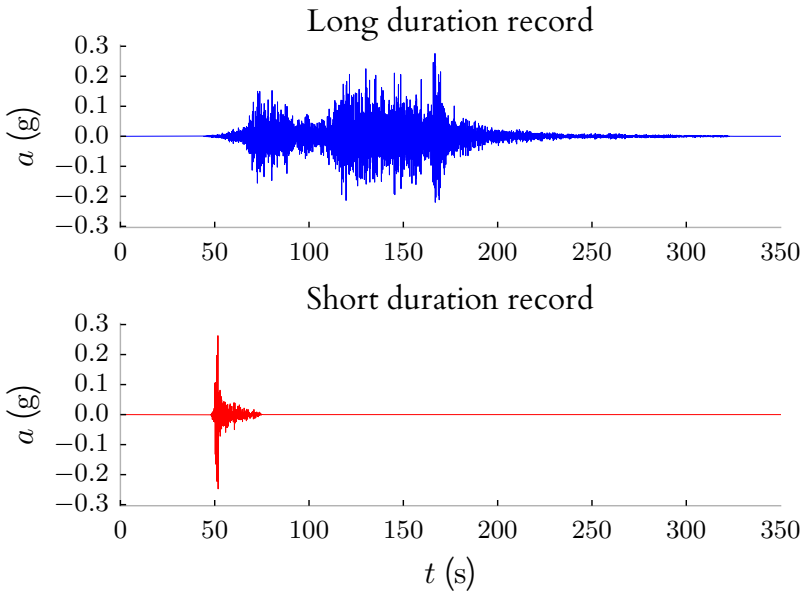




Spectrally equivalent record pair #114

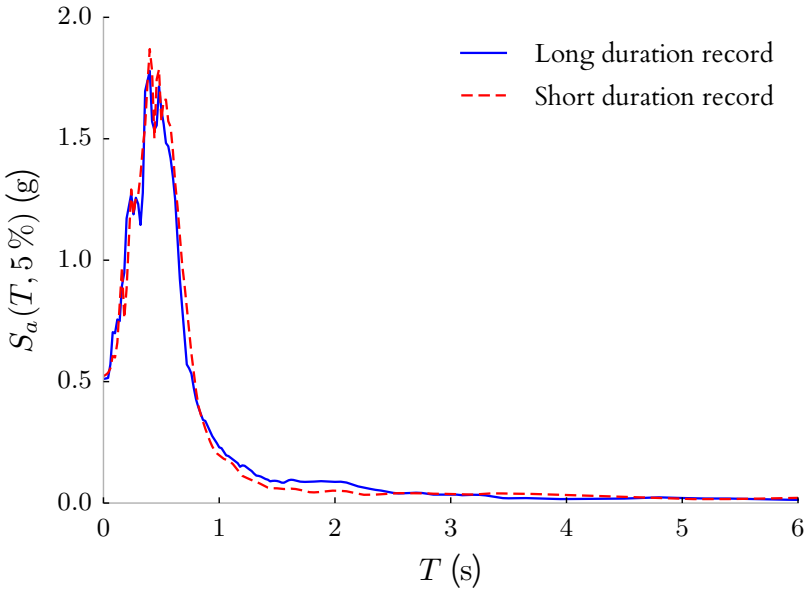
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Kawamata	FKSH171103111446_H2.th	–	85
1987 Whittier Narrows-01	El Monte - Fairview Av	WHITTIER.A/A-FAI185.AT2	1.07	2

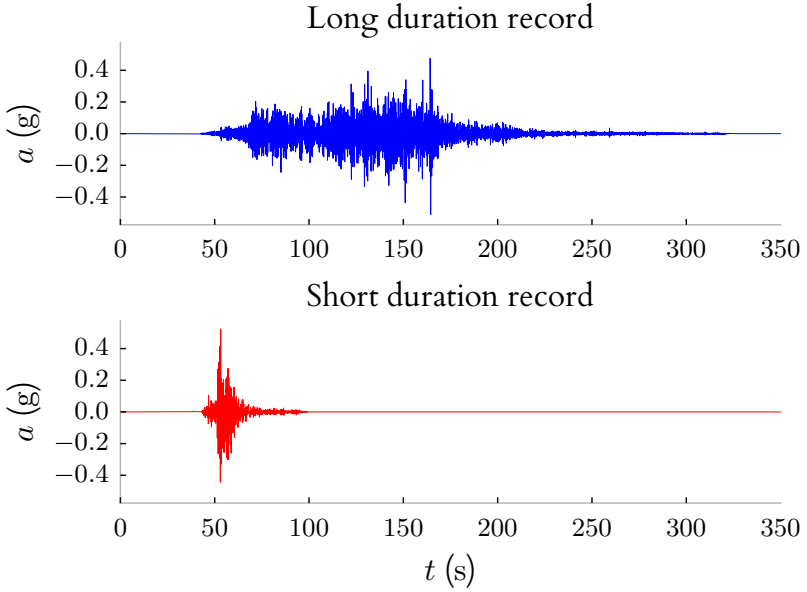




Spectrally equivalent record pair #115

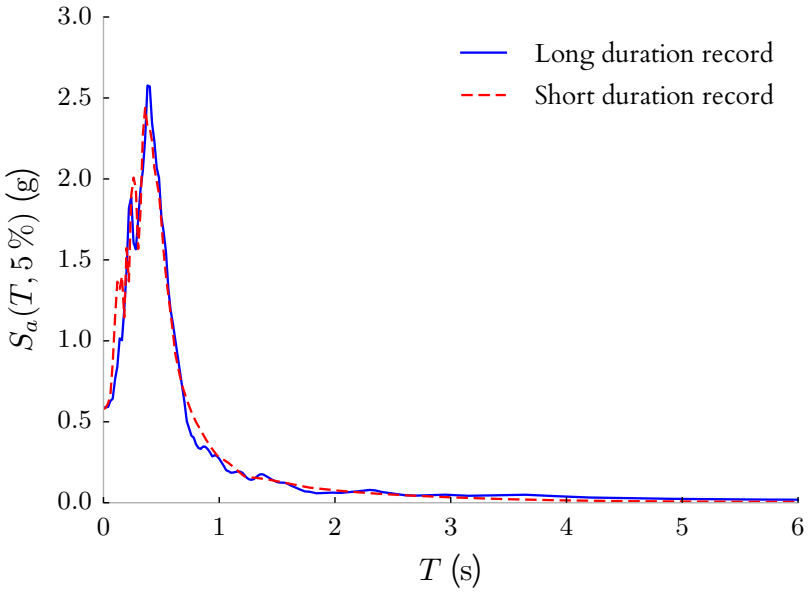
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Miharu	FKSH181103111446_H1.th	–	79
1999 Chi-Chi (aftershock 3), Taiwan	CHY014	CHICHI.04/CHY014N.AT2	4.00	6

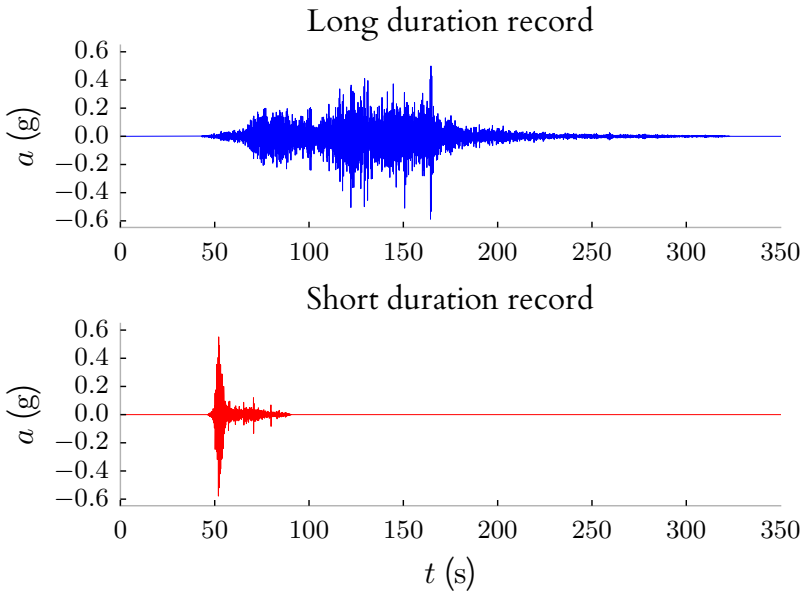




Spectrally equivalent record pair #116

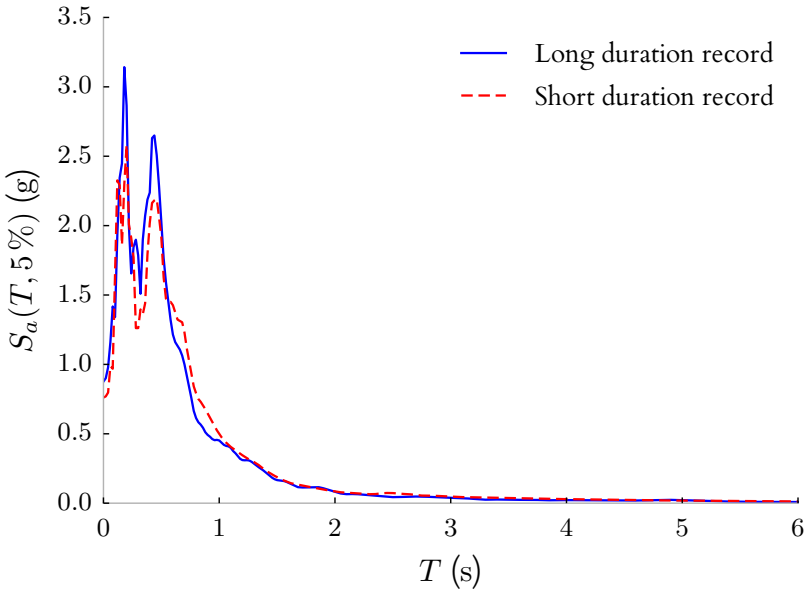
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Miharu	FKSH181103111446_H2.th	–	76
1997 Northwest China-01	Jiashi	NWCHINA1/JIA270.AT2	2.47	2

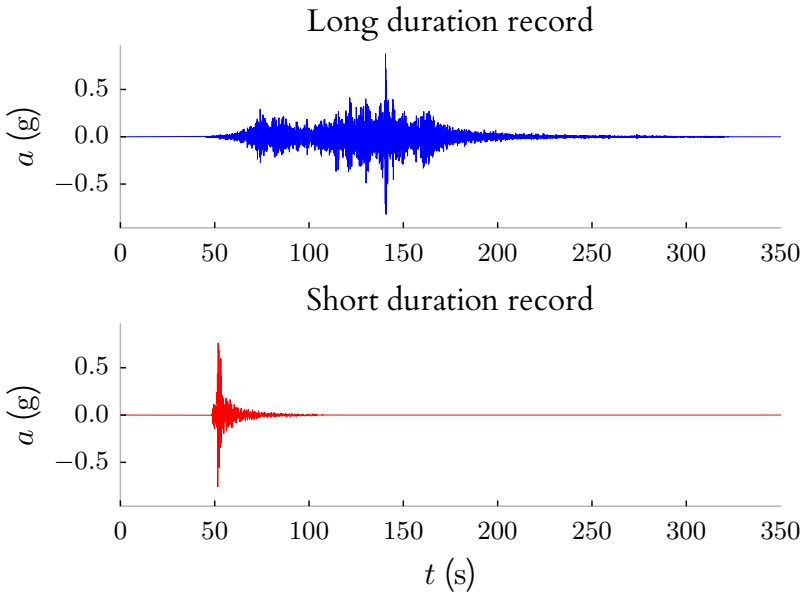




Spectrally equivalent record pair #117

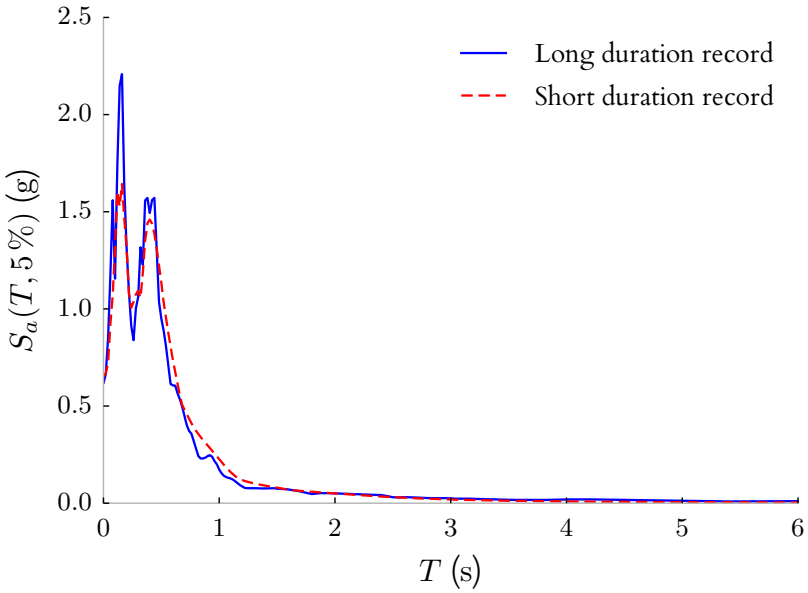
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Miyakoji	FKSH191103111446_H1.th	–	68
2004 Parkfield-02, CA	Parkfield - Cholame 5W	PARK2004/C05090.AT2	3.03	2

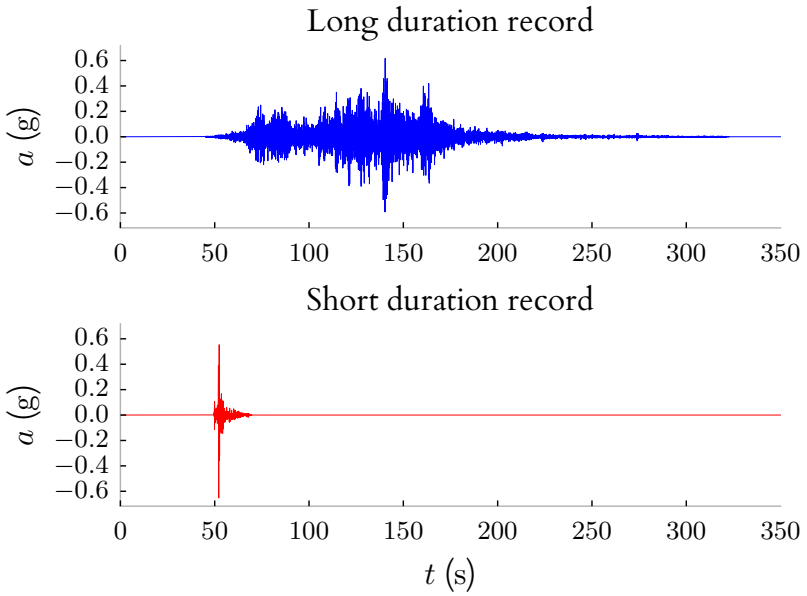




Spectrally equivalent record pair #118

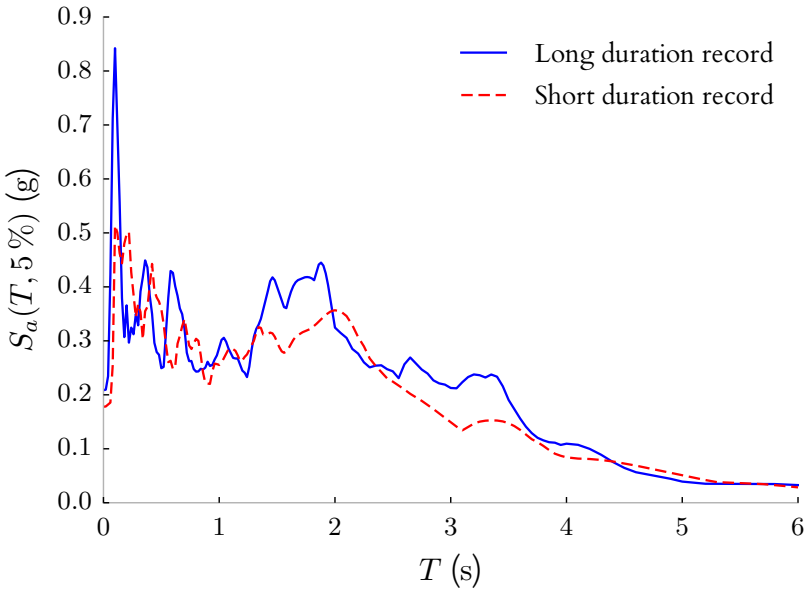
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Miyakoji	FKSH191103111446_H2.th	–	71
2004 Parkfield-02, CA	Parkfield - Cholame 3E	PARK2004/TM3090.AT2	1.26	1

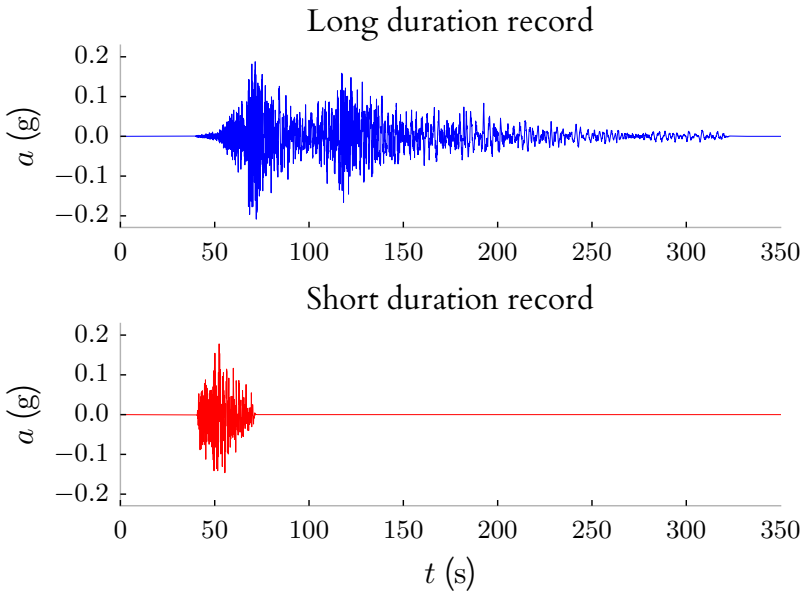




Spectrally equivalent record pair #119

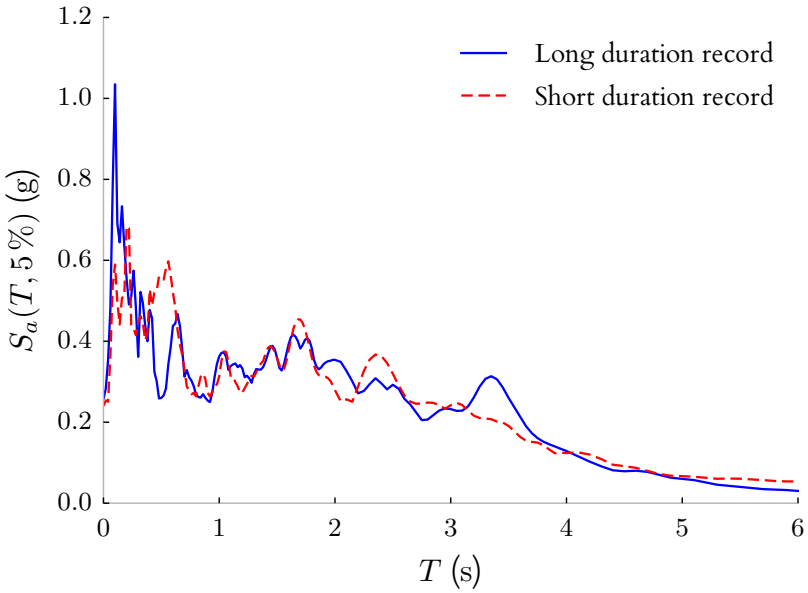
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Naruko	MYG0051103111446_H1.th	–	71
1980 Irpinia, Italy-01	Tricarico	ITALY/A-TRC270.AT2	5.00	14

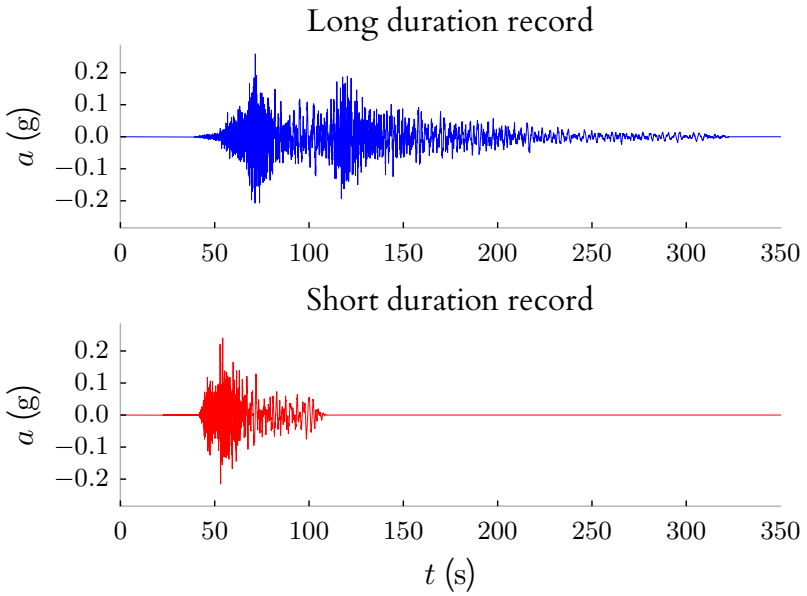




Spectrally equivalent record pair #120

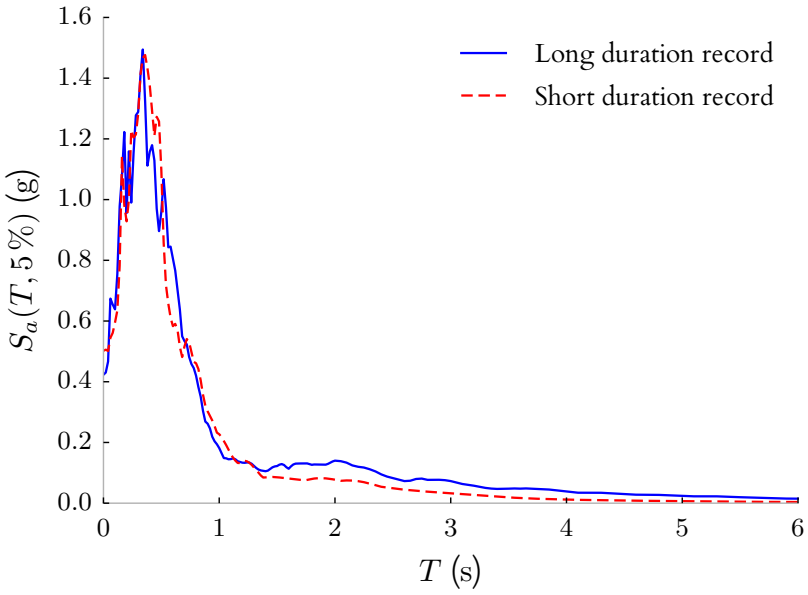
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Naruko	MYG0051103111446_H2.th	–	71
1999 Chi-Chi, Taiwan-06	TCU118	CHICHI.06/TCU118E.AT2	4.63	24

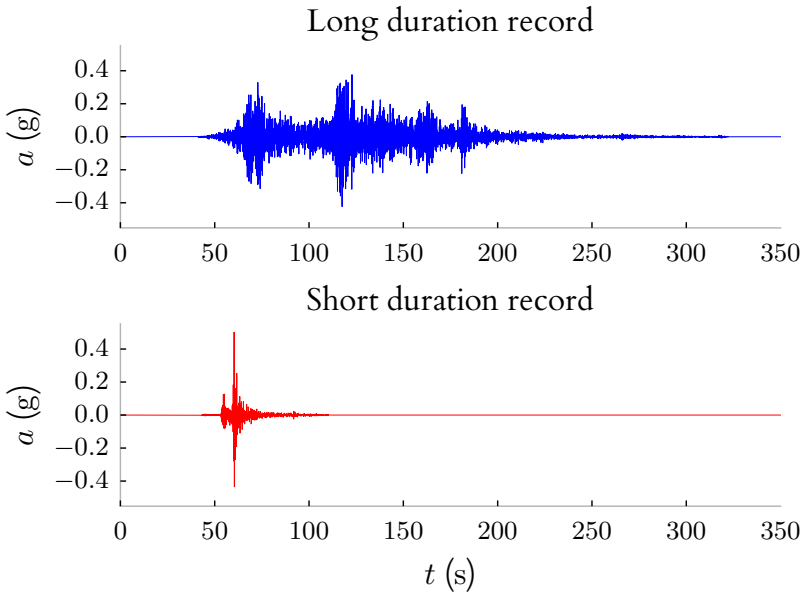




Spectrally equivalent record pair #121

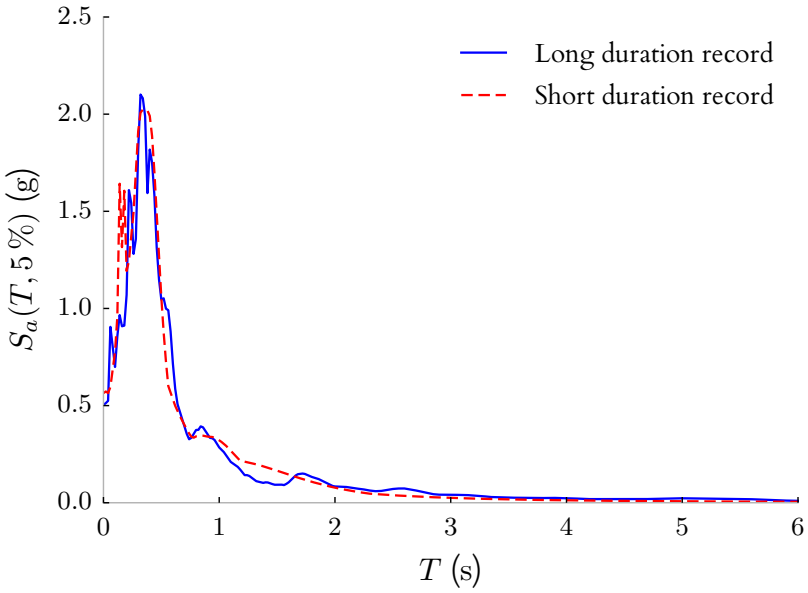
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Sakunami	MYG0141103111446_H1.th	–	75
1999 Chi-Chi, Taiwan-02	TCU067	CHICHI.02/TCU067N.AT2	5.00	5

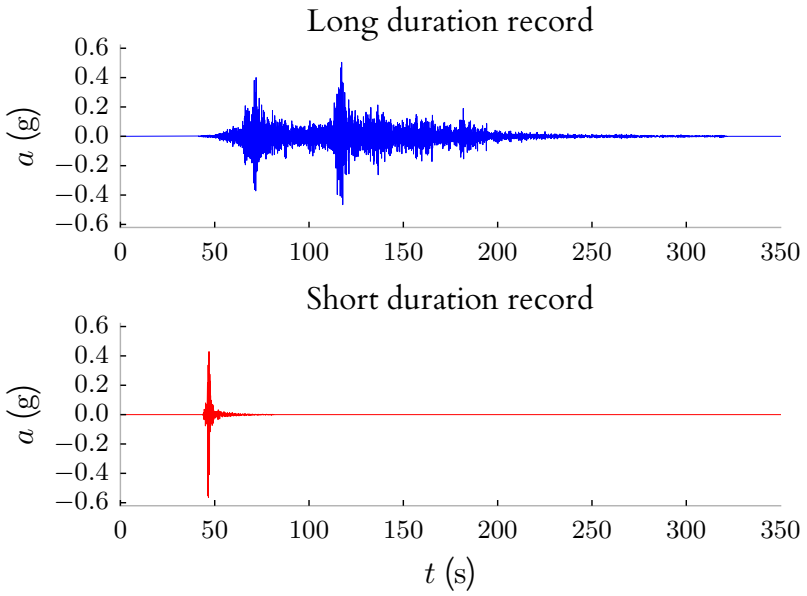




Spectrally equivalent record pair #122

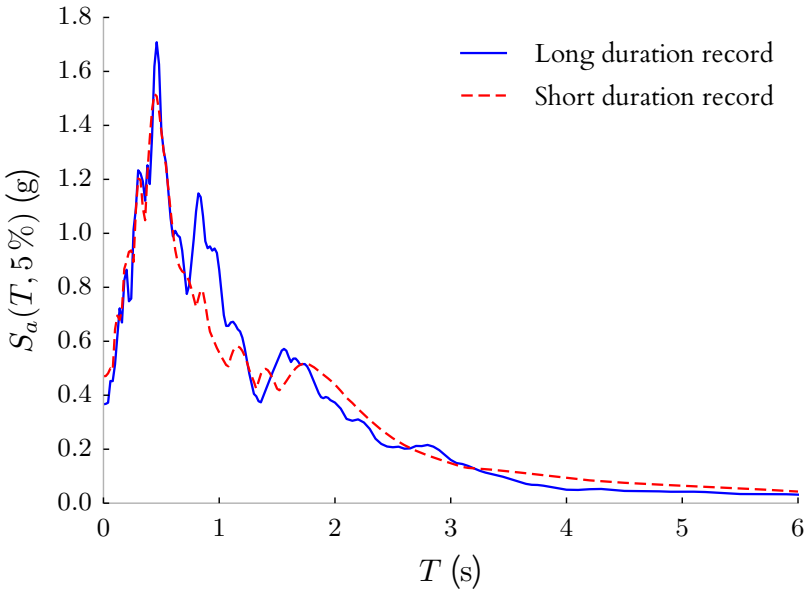
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Sakunami	MYG0141103111446_H2.th	–	67
1991 Sierra Madre	Altadena - Eaton Canyon	SMADRE/ALT000.AT2	1.26	1

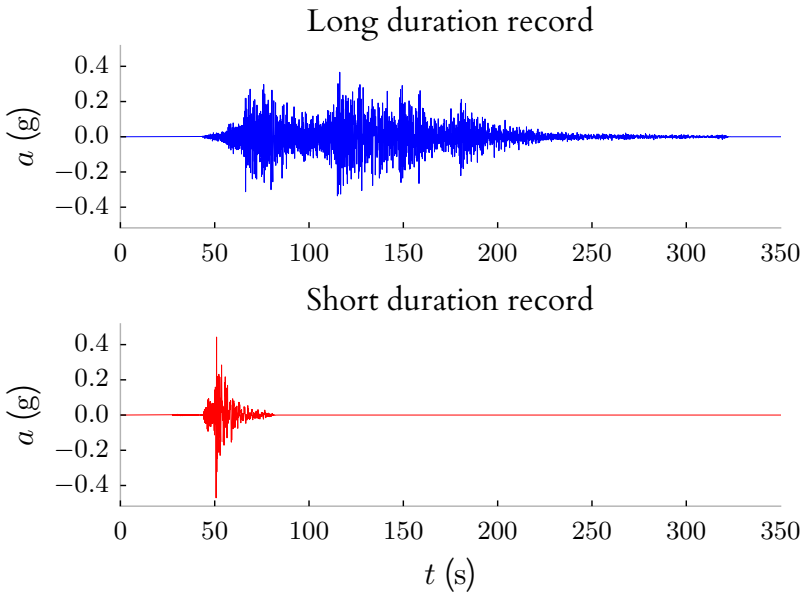




Spectrally equivalent record pair #123

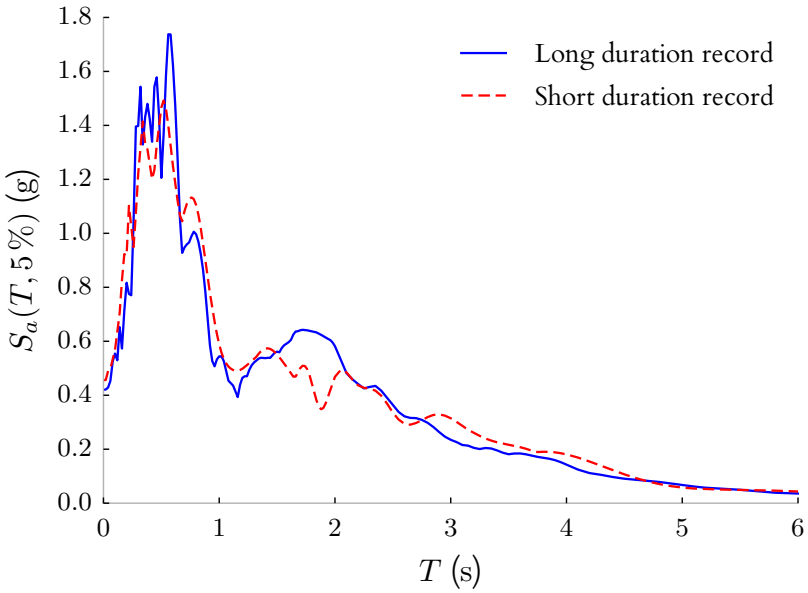
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Iwanuma	MYG0151103111446_H1.th	–	80
1999 Chi-Chi, Taiwan-03	TCU138	CHICHI.03/TCU138N.AT2	3.62	5

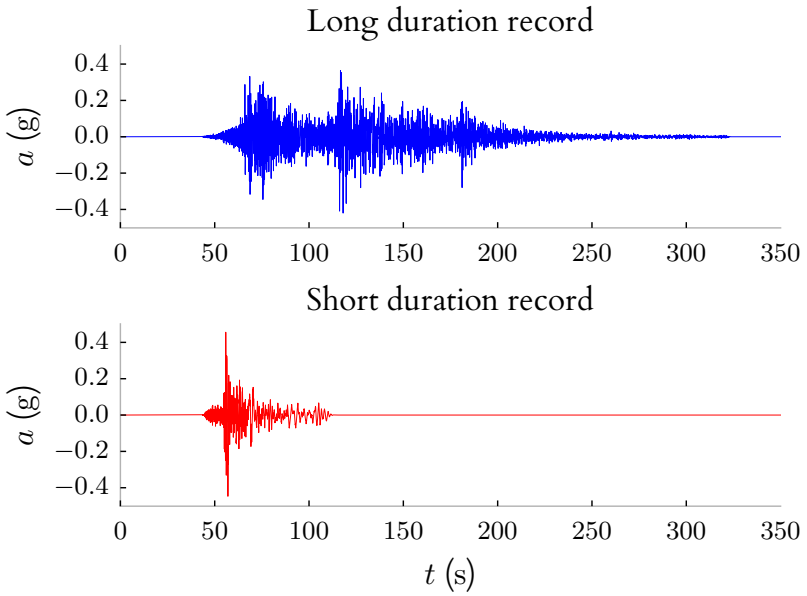




Spectrally equivalent record pair #124

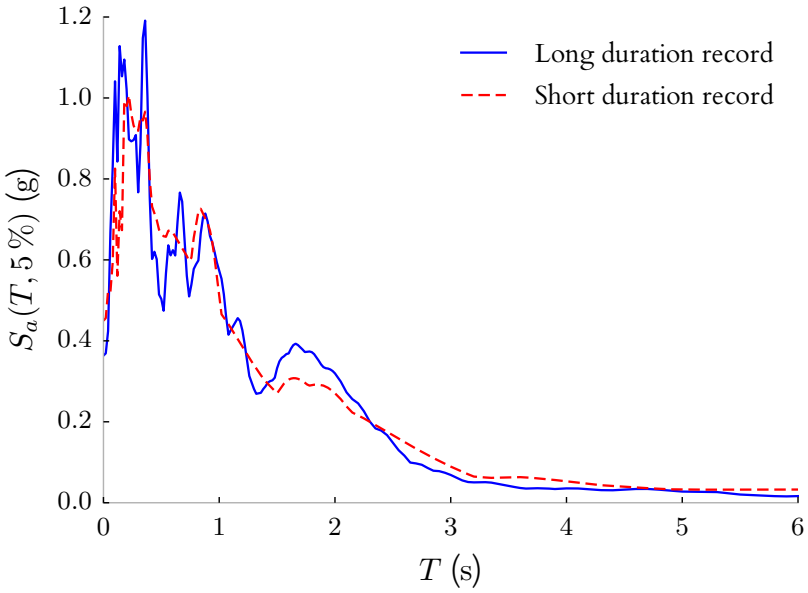
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Iwanuma	MYG0151103111446_H2.th	–	70
1999 Chi-Chi, Taiwan-06	CHY039	CHICHI.06/CHY039N.AT2	4.65	14

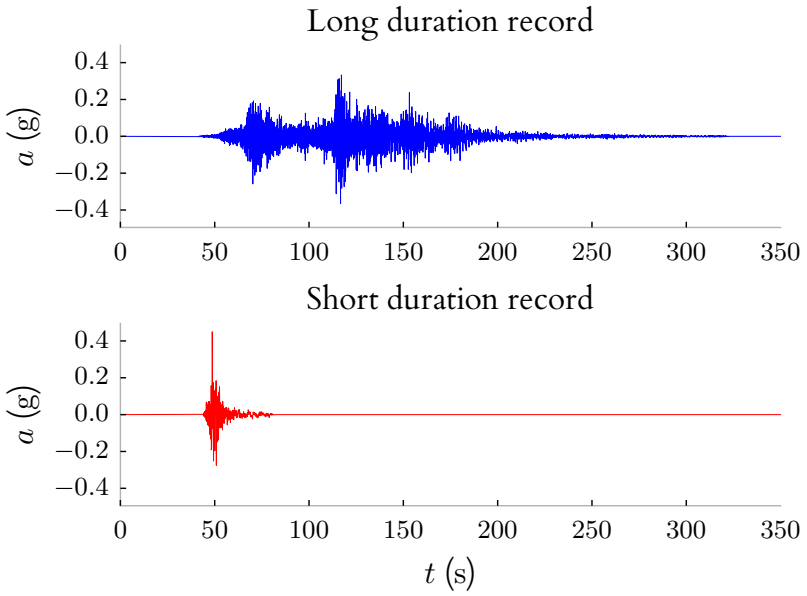




Spectrally equivalent record pair #125

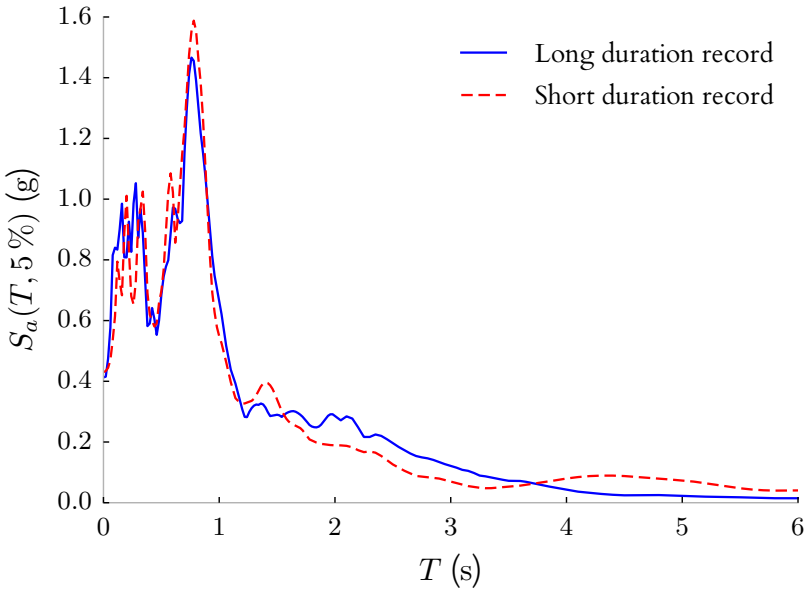
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Shiroishi	MYG0161103111446_H1.th	–	77
1979 Imperial Valley-06	El Centro Array #4	IMPVALL.H/H-E04140.AT2	0.93	3

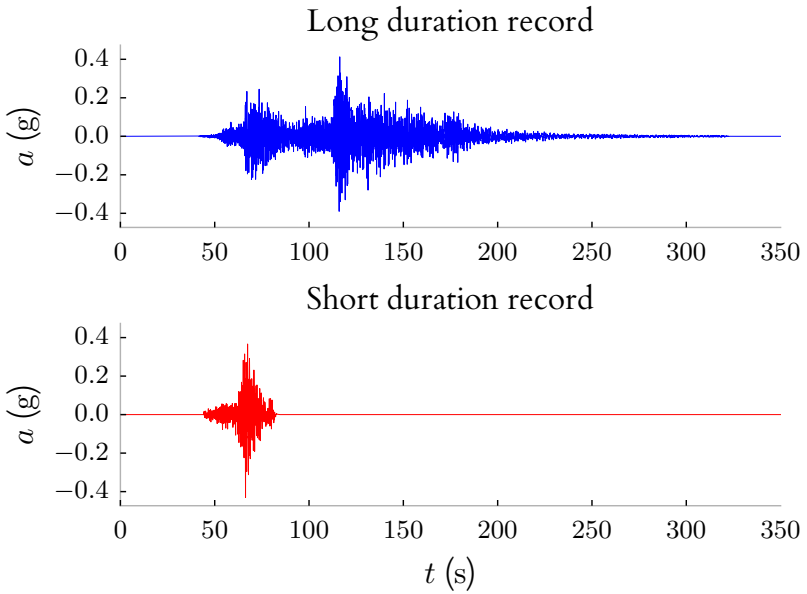




Spectrally equivalent record pair #126

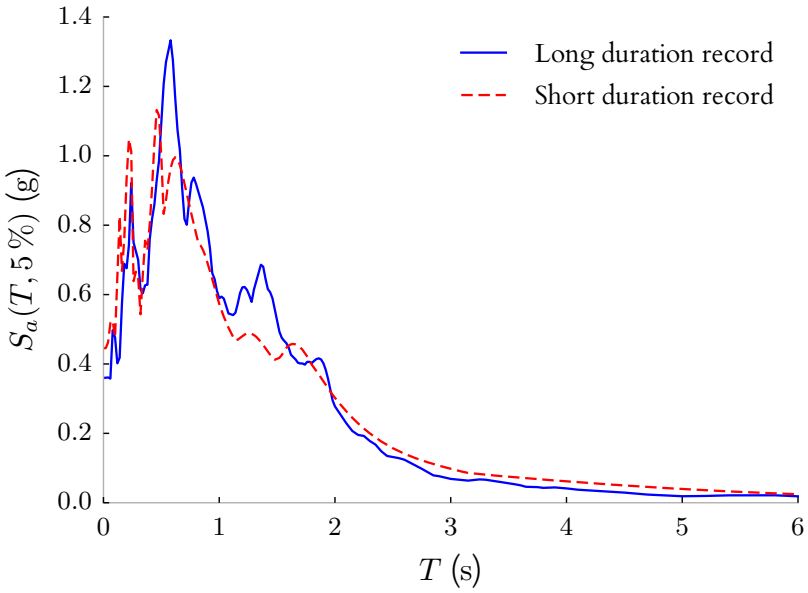
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Shiroishi	MYG0161103111446_H2.th	–	68
1992 Landers	Boron Fire Station	LANDERS/BFS000.AT2	3.62	8

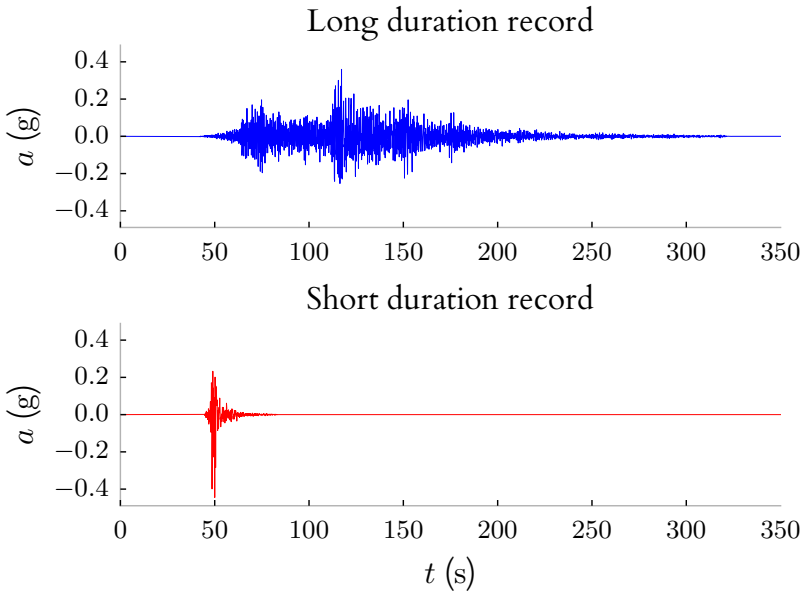




Spectrally equivalent record pair #127

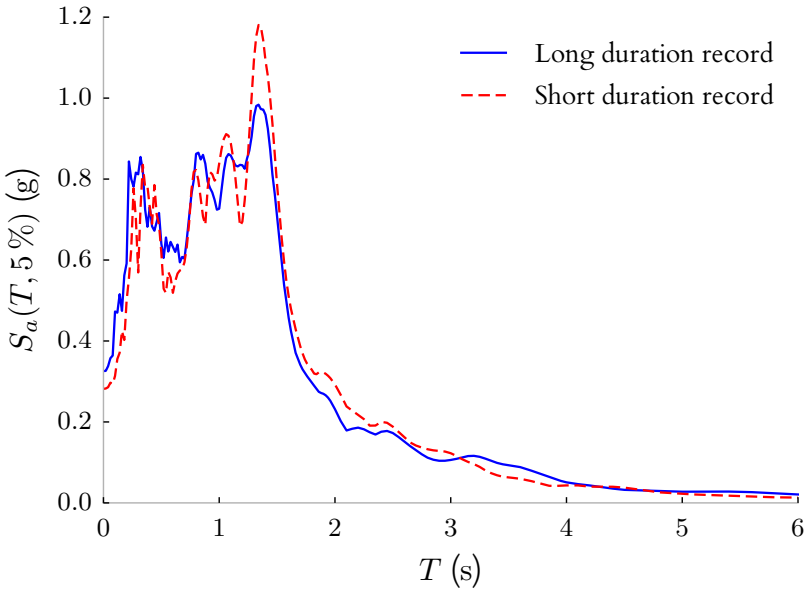
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Kakuda	MYG0171103111446_H1.th	–	69
1995 Kobe, Japan	Takarazuka	KOBE/TAZ000.AT2	0.64	2

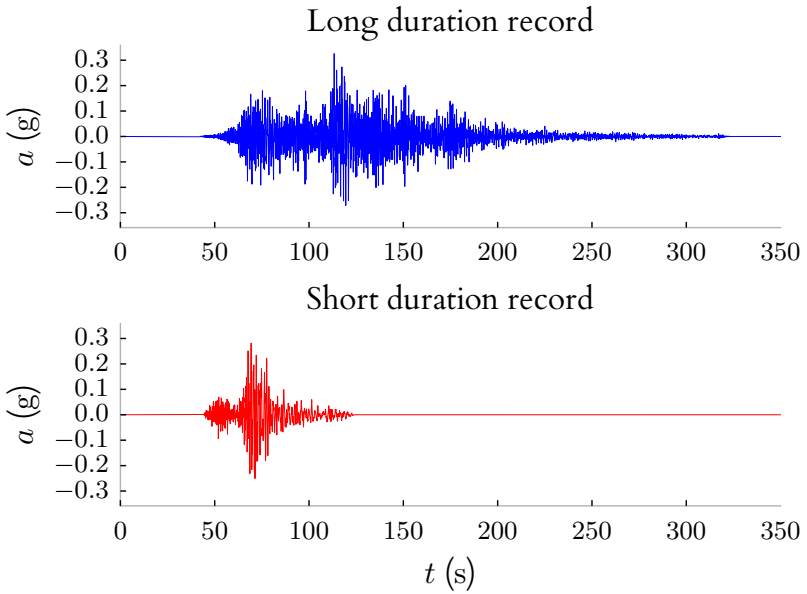




Spectrally equivalent record pair #128

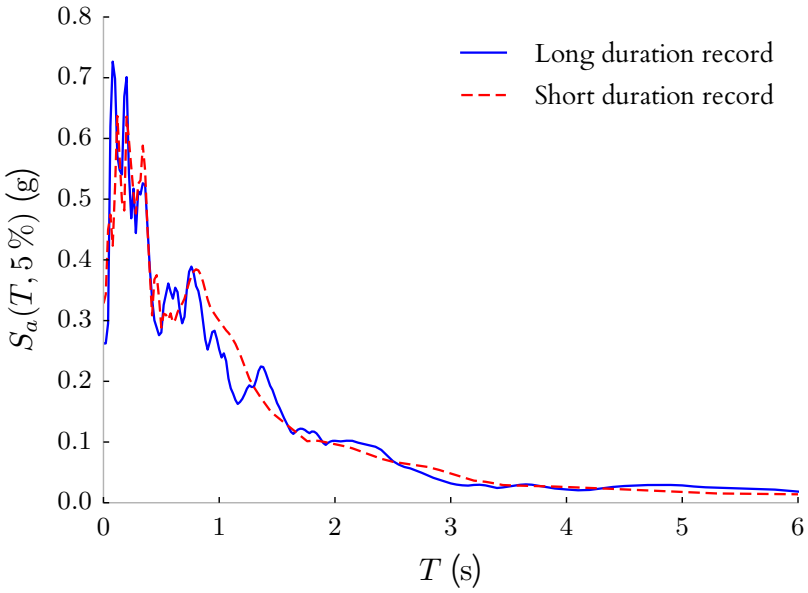
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Kakuda	MYG0171103111446_H2.th	–	71
1999 Hector Mine	Temecula - 6th & Mercedes	HECTOR/TFS360.AT2	4.91	13

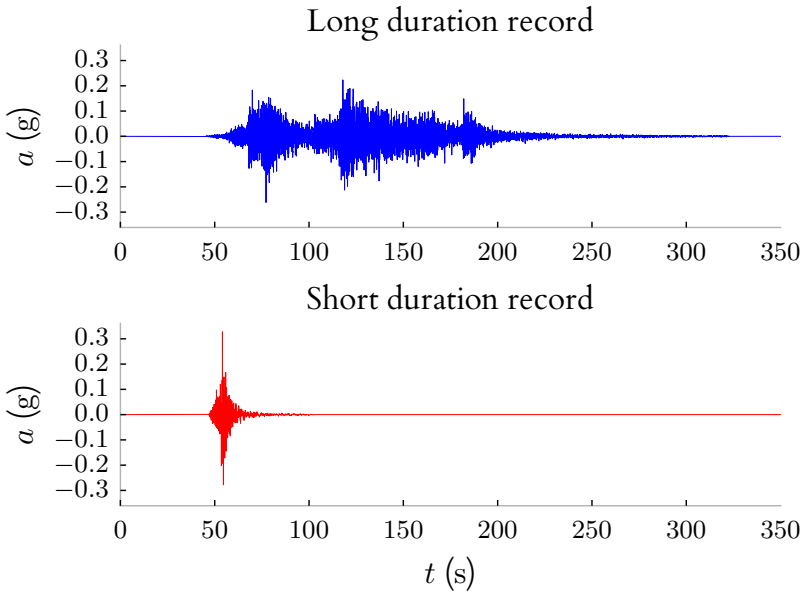




Spectrally equivalent record pair #129

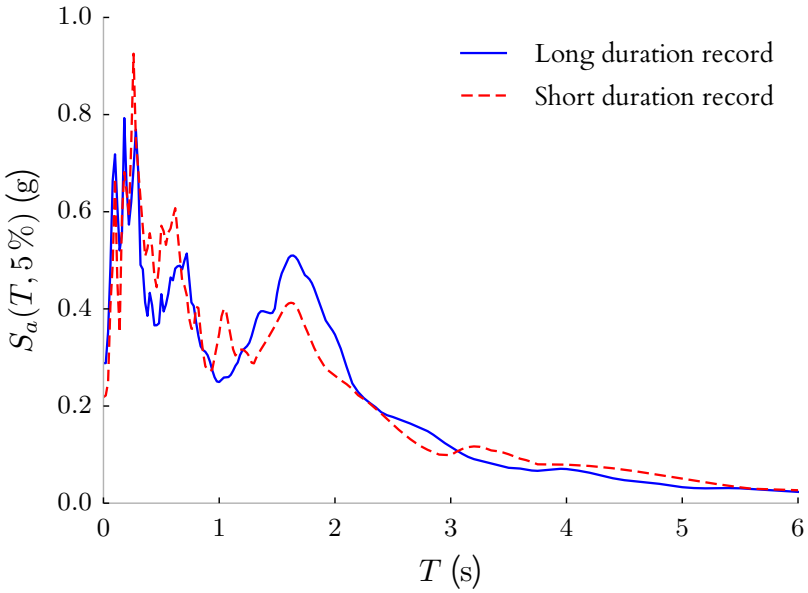
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Iwanuma	MYGH081103111446_H1.th	–	70
2009 L'Aquila, Italy	Celano	L-AQUILA/TK003YLN.AT2	3.58	4

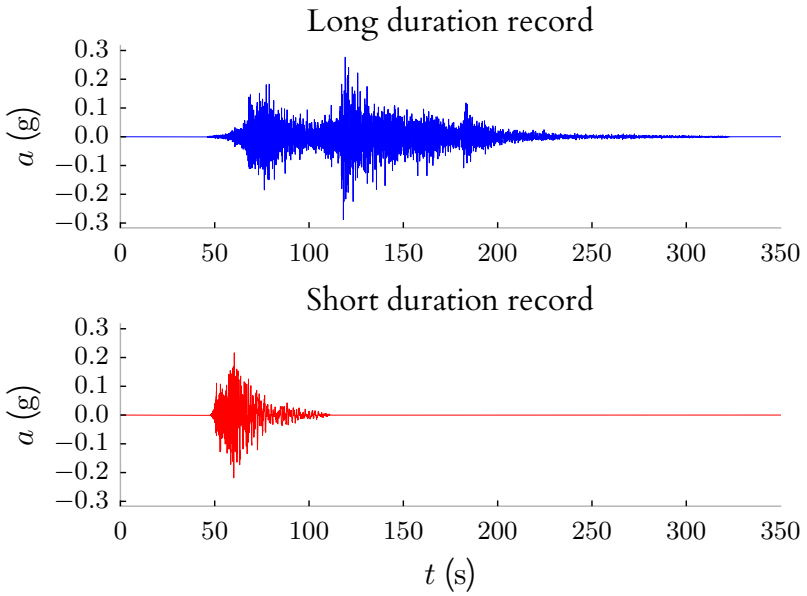




Spectrally equivalent record pair #130

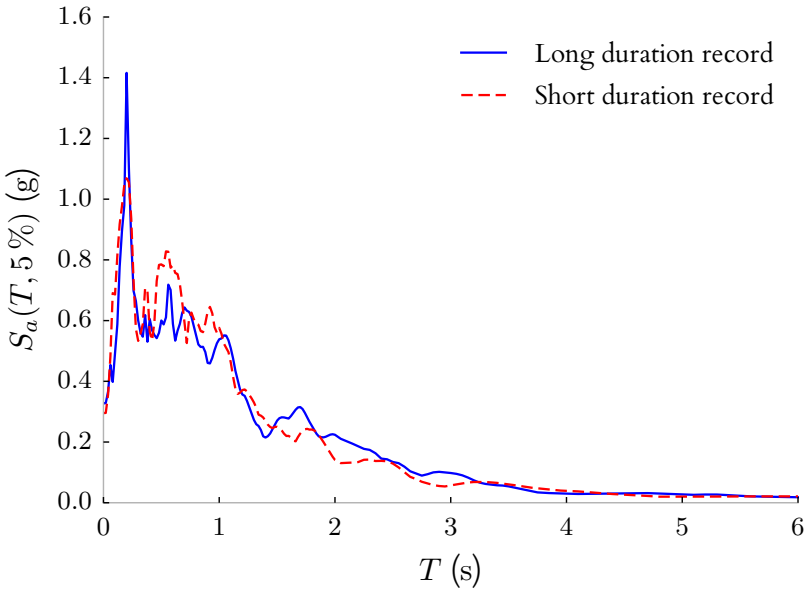
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Iwanuma	MYGH081103111446_H2.th	–	66
1999 Chi-Chi, Taiwan-06	TCU138	CHICHI.06/TCU138N.AT2	3.91	14

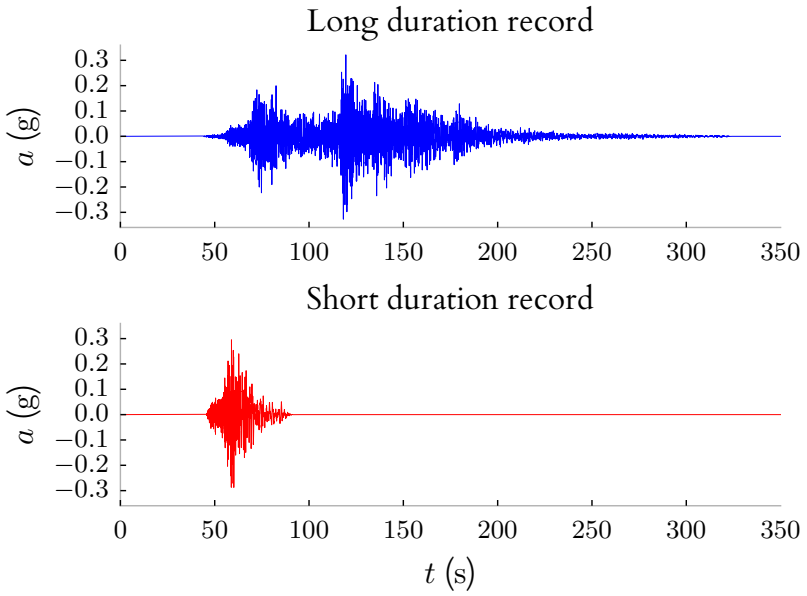




Spectrally equivalent record pair #131

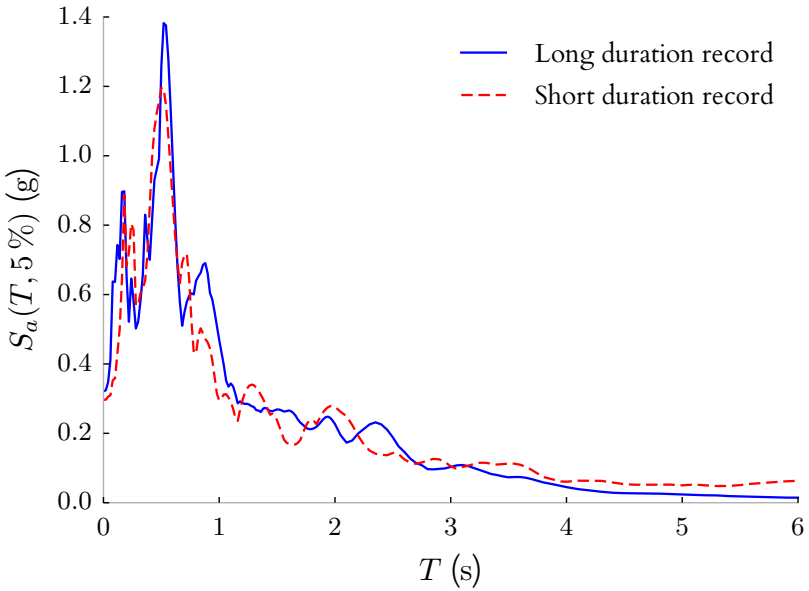
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Shiroishi	MYGH091103111446_H1.th	–	70
2007 Chuetsu-oki	Shiozawa Building, Minamiunuma	CHUETSU/65050NS.AT2	2.73	11

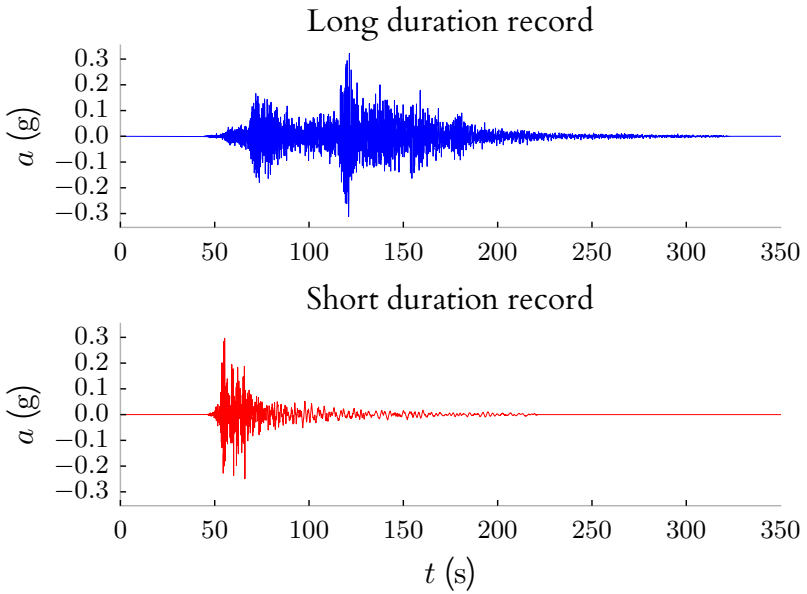




Spectrally equivalent record pair #132

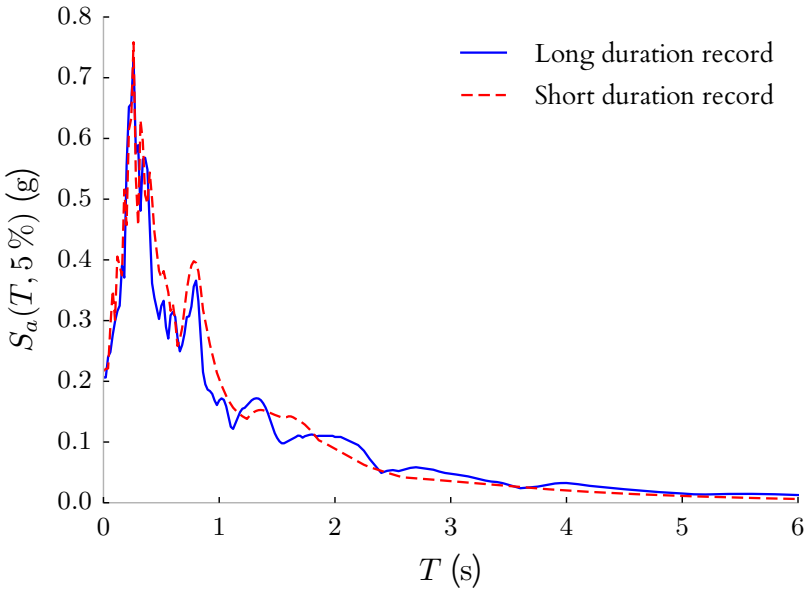
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Shiroishi	MYGH091103111446_H2.th	–	70
2007 Chuetsu-oki	NIG013	CHUETSU/NIG013NS.AT2	2	12

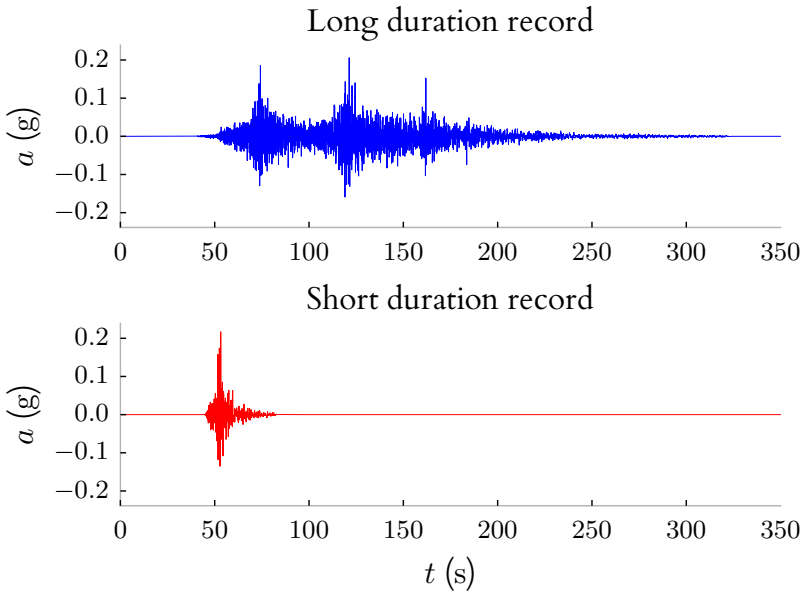




Spectrally equivalent record pair #133

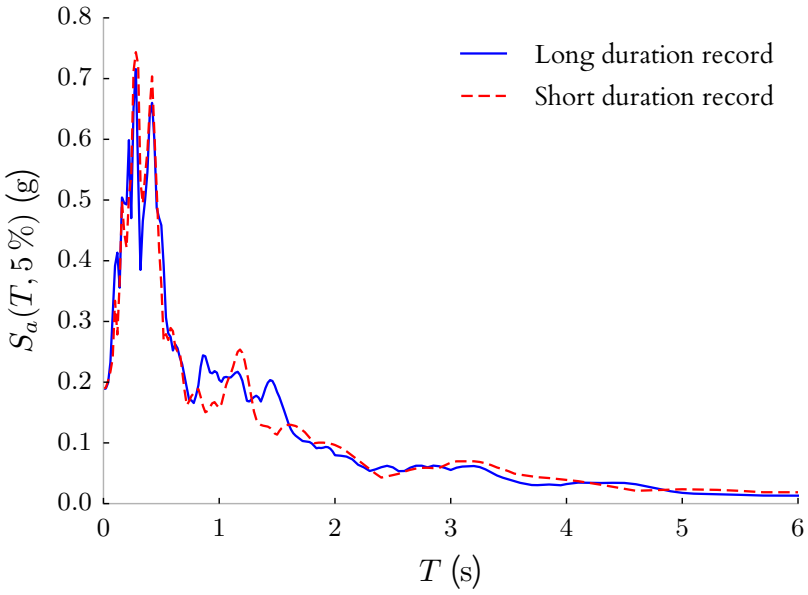
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Higashine	YMT0071103111446_H1.th	–	73
1994 Northridge-01	Castaic - Old Ridge Route	NORTHR/ORR090.AT2	0.38	4

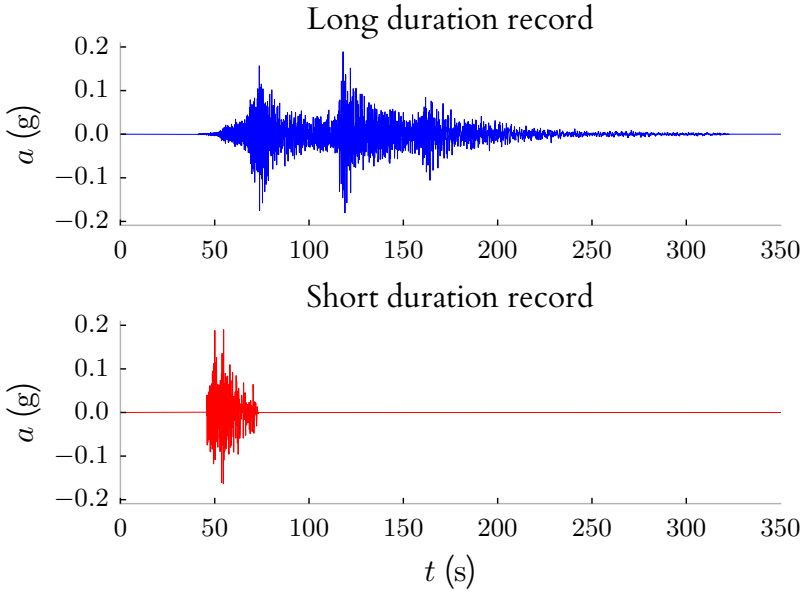




Spectrally equivalent record pair #134

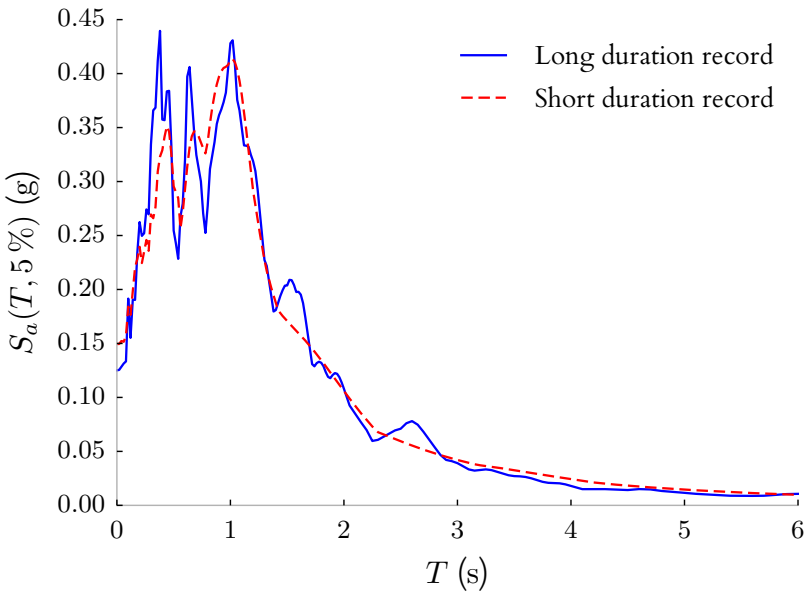
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Higashine	YMT0071103111446_H2.th	–	69
1984 Morgan Hill	San Justo Dam (L Abut)	MORGAN/SJL360.AT2	2.71	11

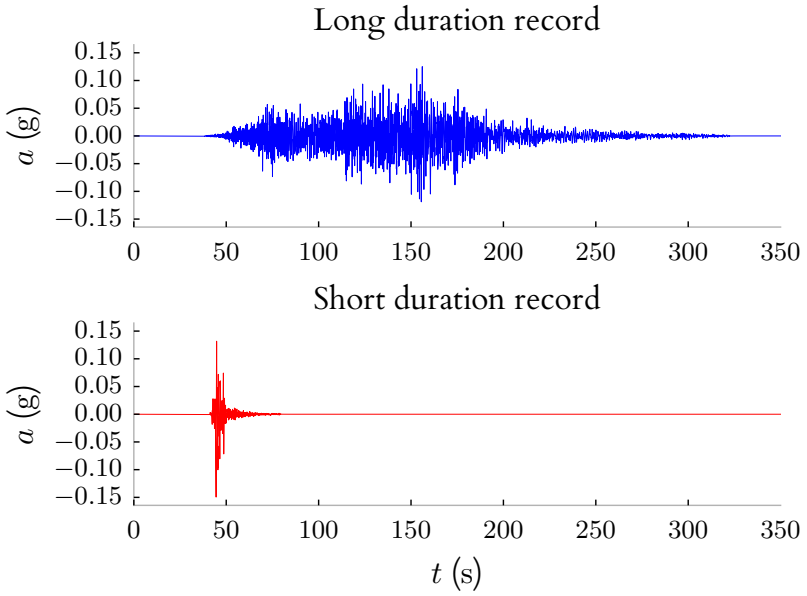




Spectrally equivalent record pair #135

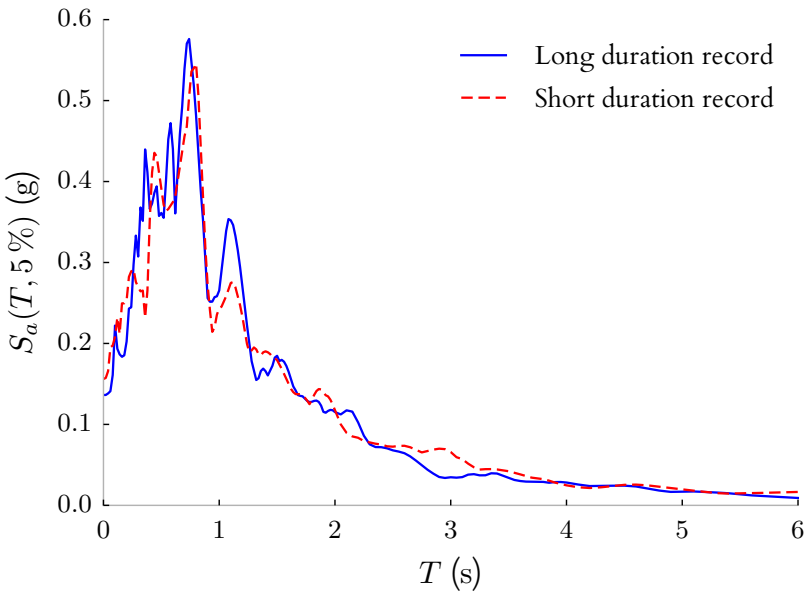
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Kaminoyama	YMT0111103111446_H1.th	–	86
1989 Loma Prieta	Los Gatos - Lexington Dam	LOMAP/LEX000.AT2	0.34	2

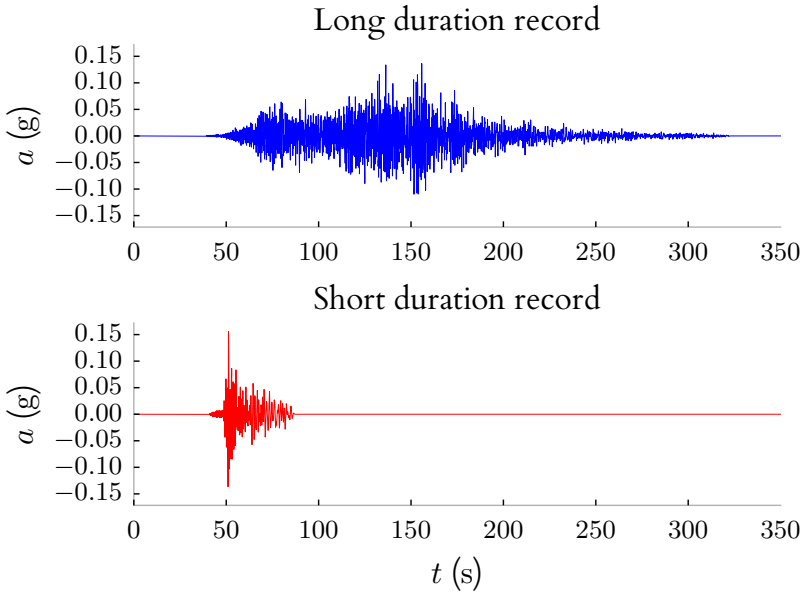




Spectrally equivalent record pair #136

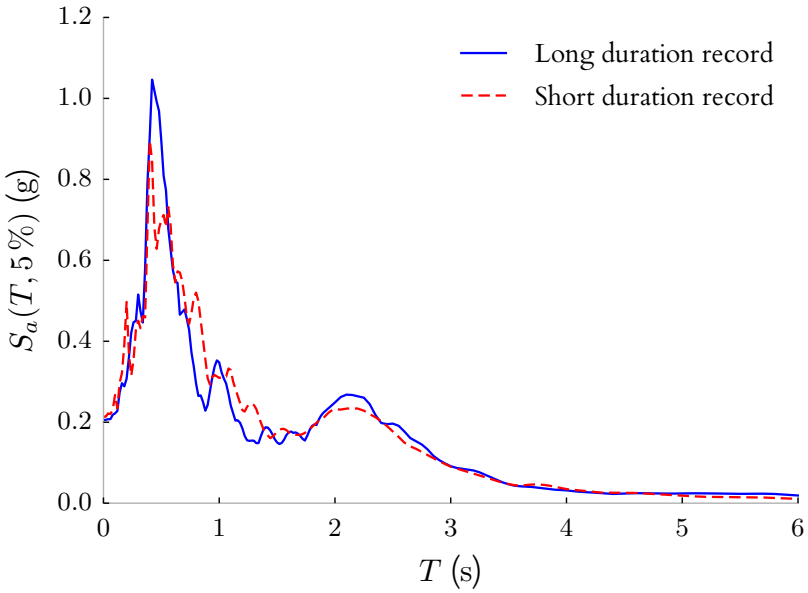
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Kaminoyama	YMT0111103111446_H2.th	–	81
2007 Chuetsu-oki	Joetsu City	CHUETSU/65019NS.AT2	0.74	14

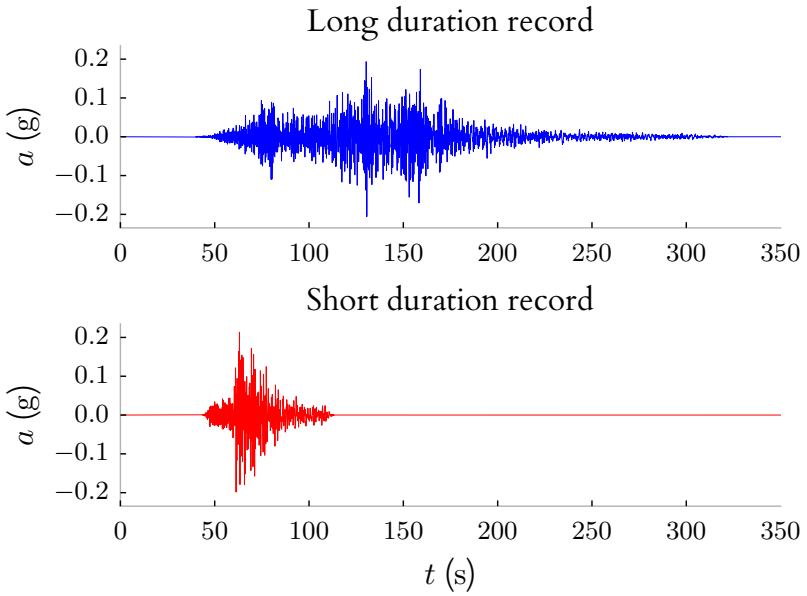




Spectrally equivalent record pair #137

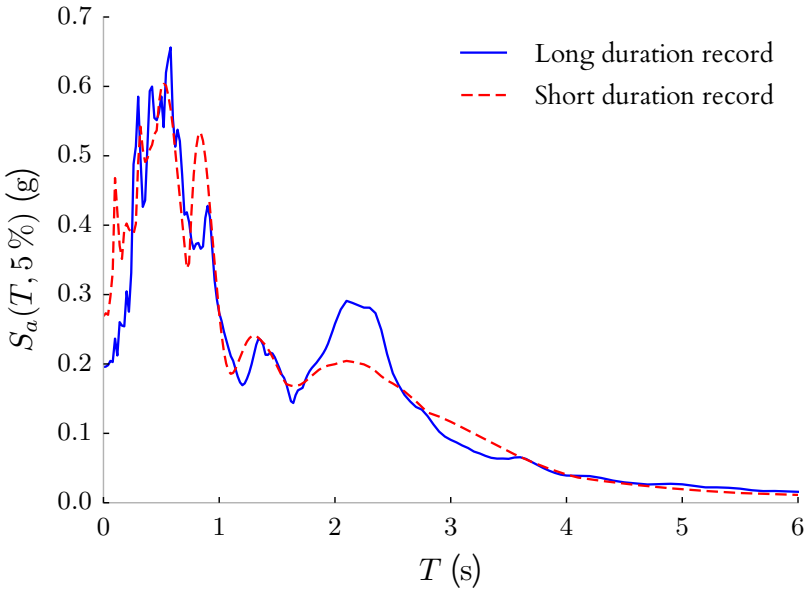
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Yonezawa	YMT0151103111446_H1.th	–	78
1999 Chi-Chi, Taiwan-05	CHY063	CHICHI.05/CHY063N.AT2	4.89	13

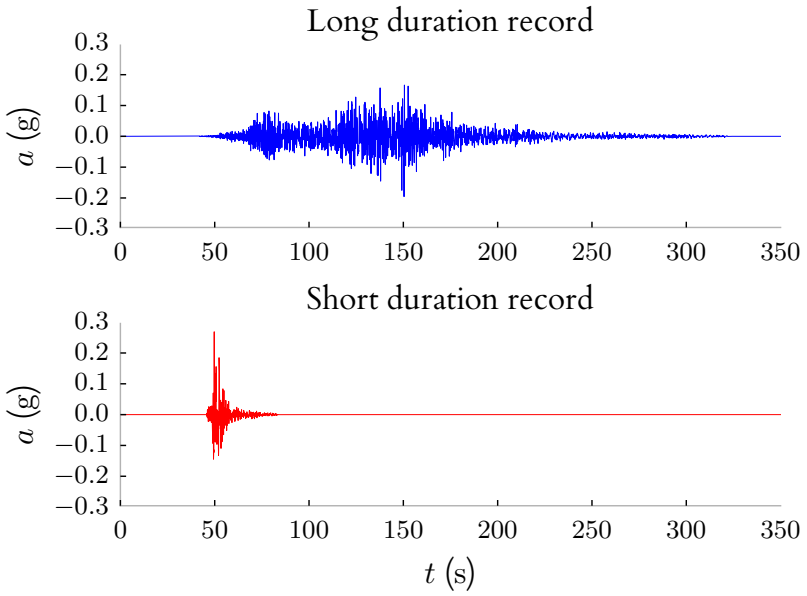




Spectrally equivalent record pair #138

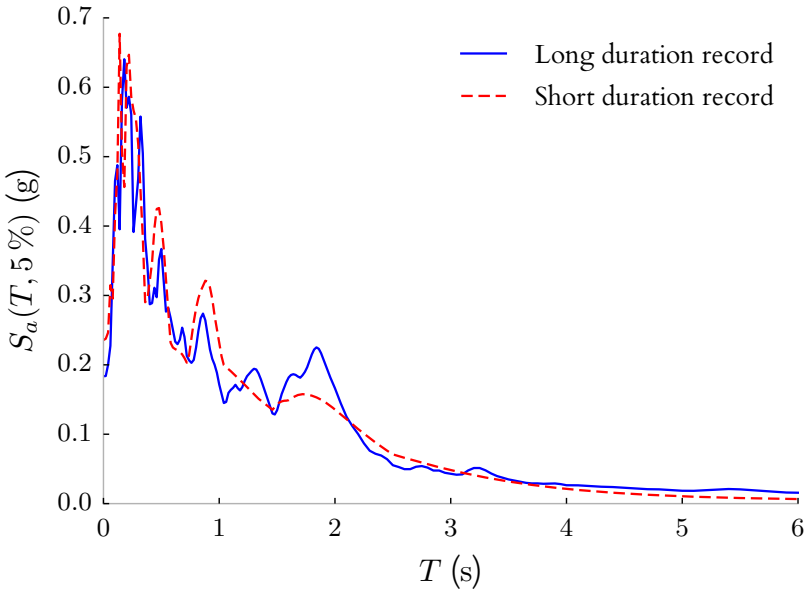
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Yonezawa	YMT0151103111446_H2.th	–	75
1994 Northridge-01	Sylmar - Olive View Med FF	NORTHR/SYL090.AT2	0.44	3

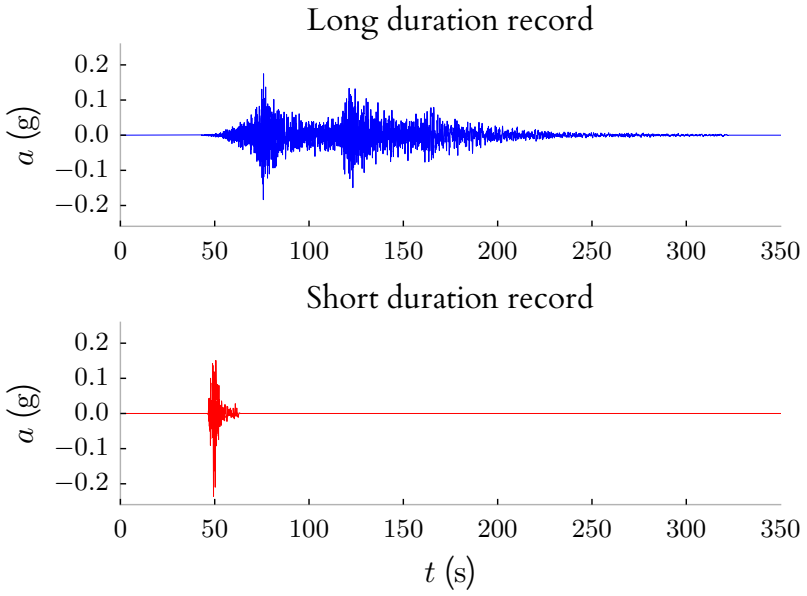




Spectrally equivalent record pair #139

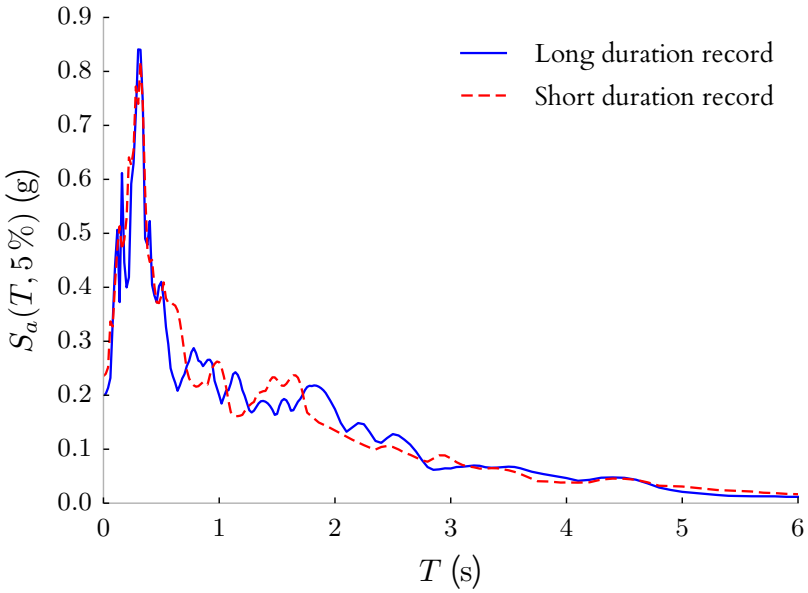
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Tendou	YMTH011103111446_H1.th	–	71
1976 Friuli (aftershock 13), Italy	San Rocco	FRIULI.P1/Z-SRO-NS.AT2	1.65	3

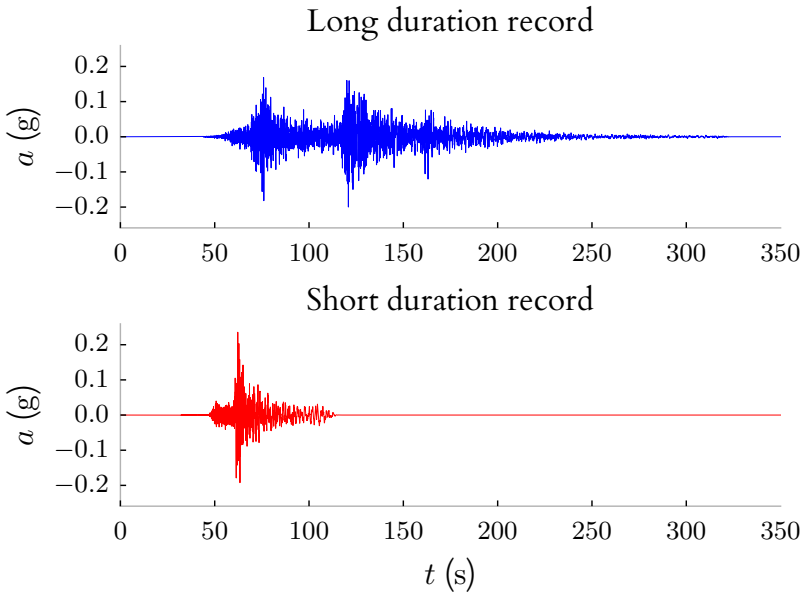




Spectrally equivalent record pair #140

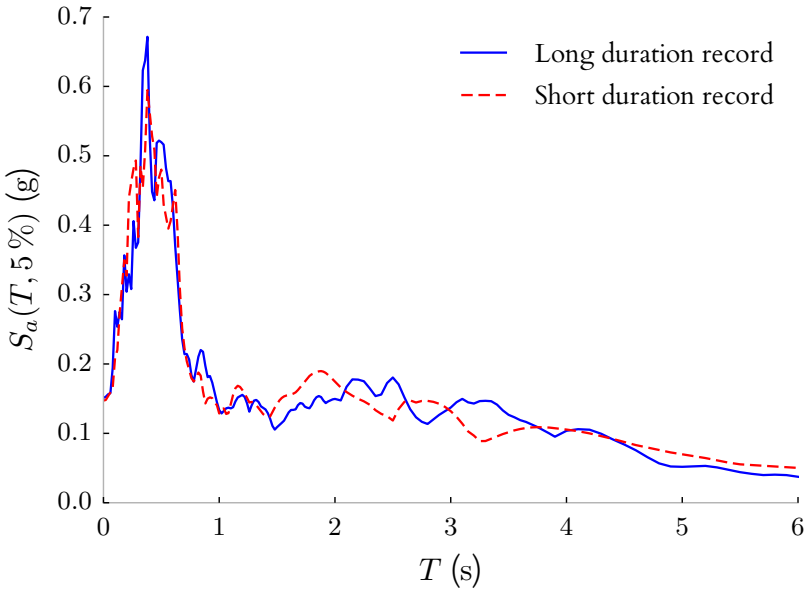
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Tendou	YMTH011103111446_H2.th	–	64
1999 Chi-Chi, Taiwan-05	CHY054	CHICHI.05/CHY054N.AT2	3.54	11

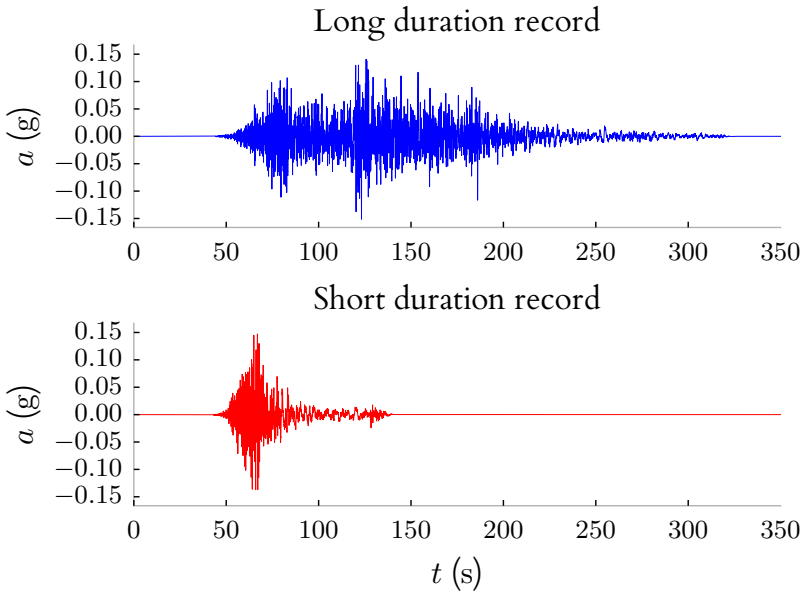




Spectrally equivalent record pair #141

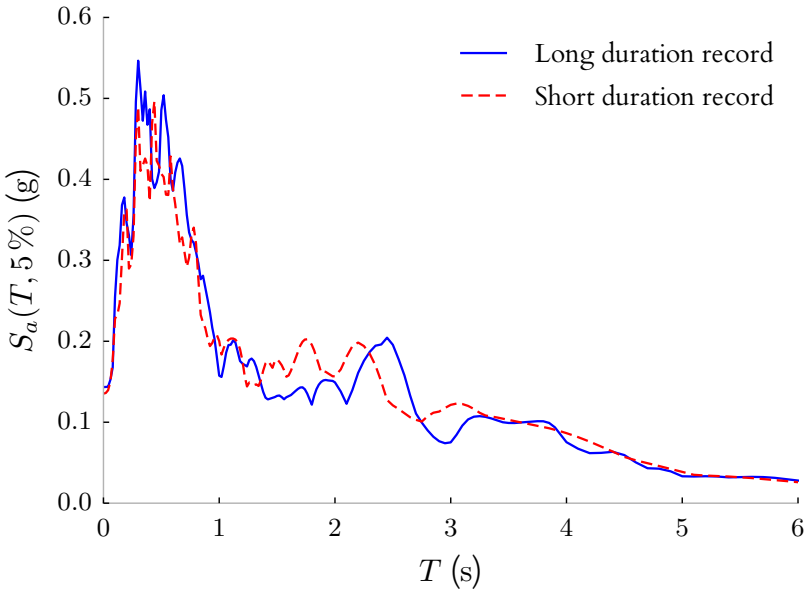
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Yamagata	YMTH021103111446_H1.th	–	79
2010 Darfield, New Zealand	Shirley Library	DARFIELD/SHLCS40W.AT2	0.88	12

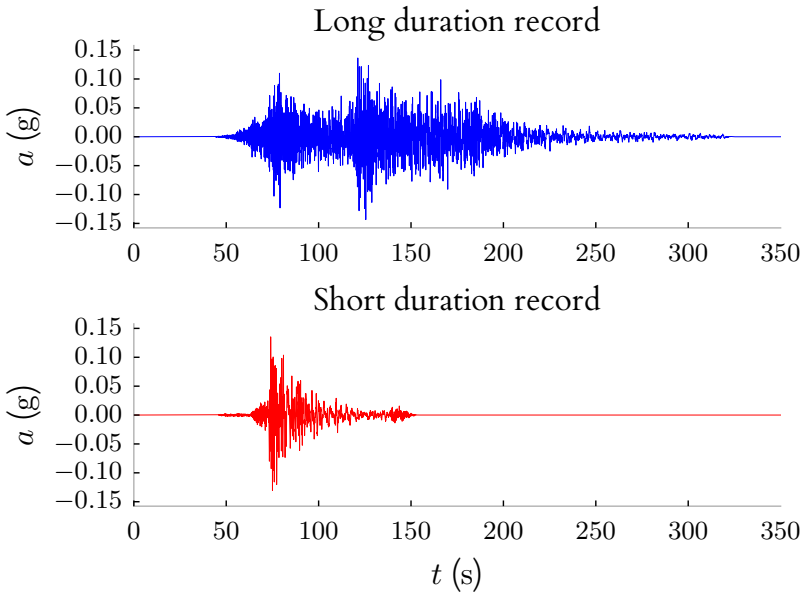




Spectrally equivalent record pair #142

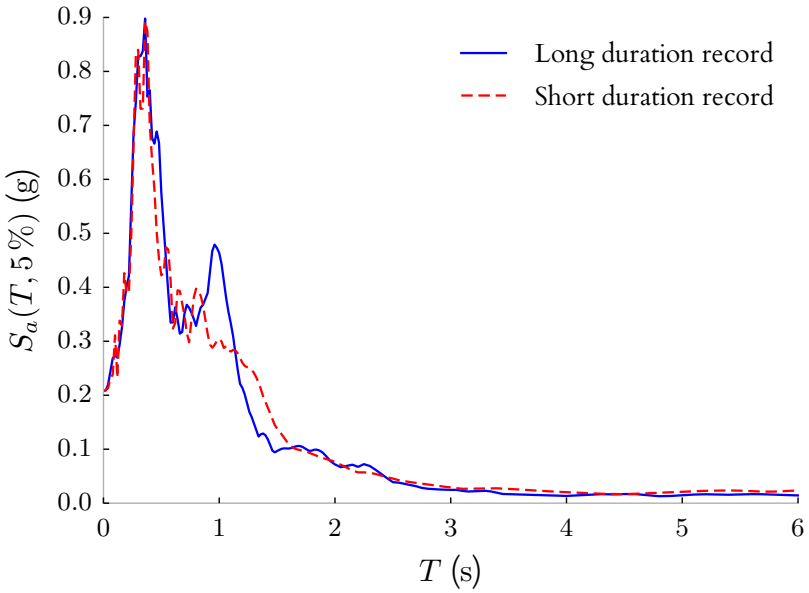
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Yamagata	YMTH021103111446_H2.th	–	85
1999 Chi-Chi, Taiwan-03	CHY088	CHICHI.03/CHY088N.AT2	3.34	12

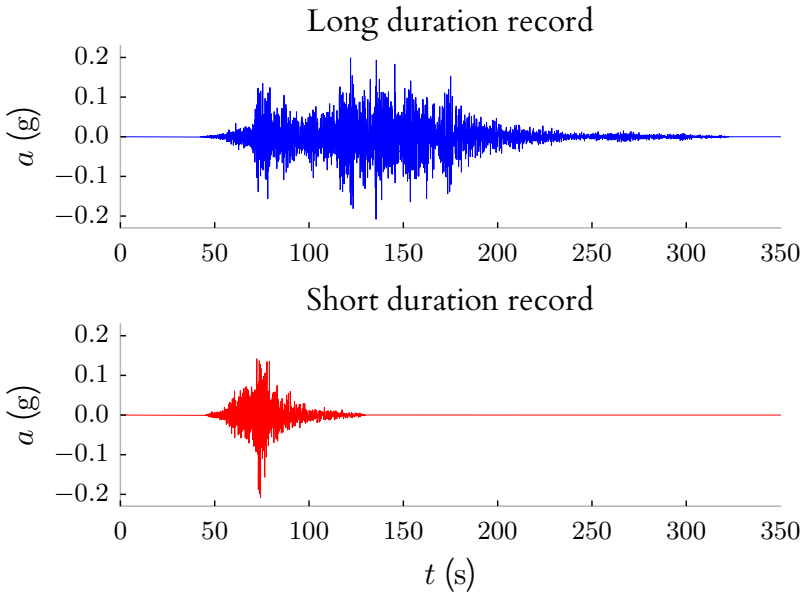




Spectrally equivalent record pair #143

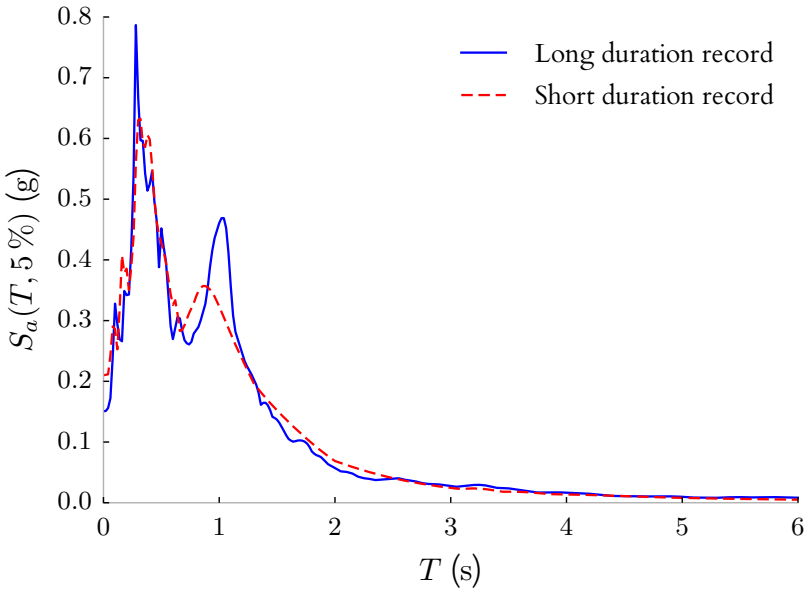
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Takahata	YMTH061103111446_H1.th	–	82
1999 Chi-Chi, Taiwan	ILA062	CHICHI/ILA062-W.AT2	2.53	14

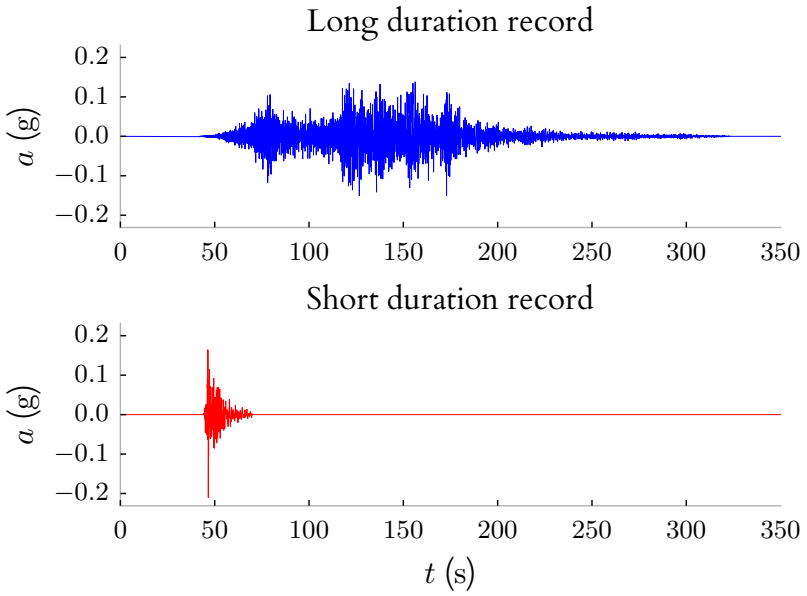




Spectrally equivalent record pair #144

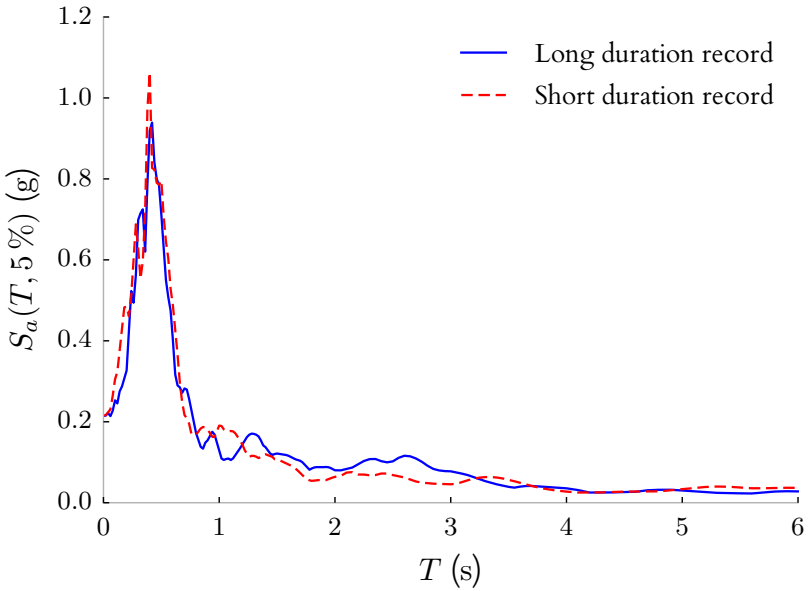
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Takahata	YMTH061103111446_H2.th	–	80
1979 Coyote Lake	Gilroy Array #4	COYOTELK/G04360.AT2	0.83	5

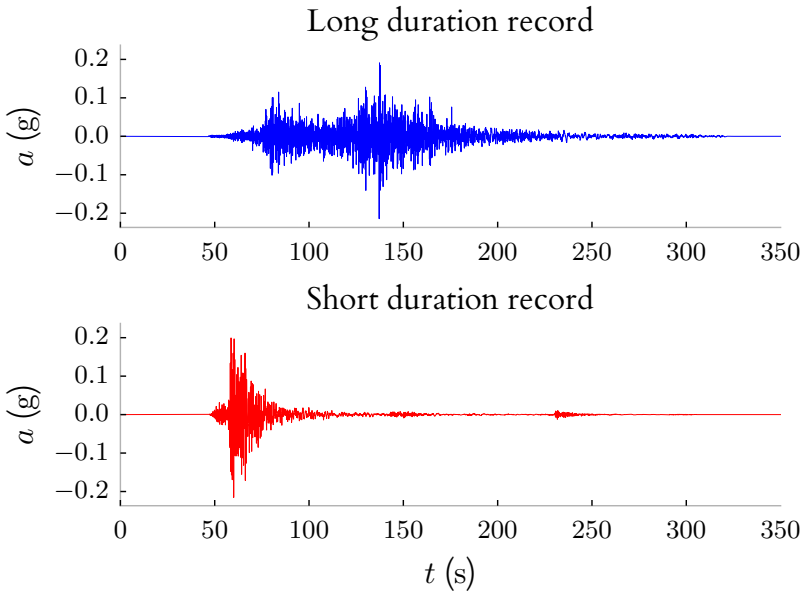




Spectrally equivalent record pair #145

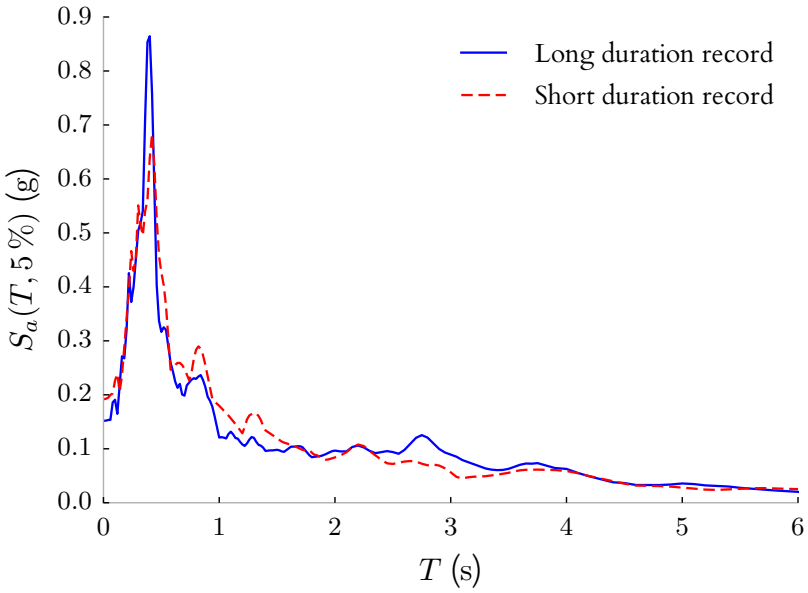
Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Yonezawa	YMTH071103111446_H1.th	–	65
2007 Chuetsu-oki	NIGH18	CHUETSU/NIGH18NS.AT2	2.21	8

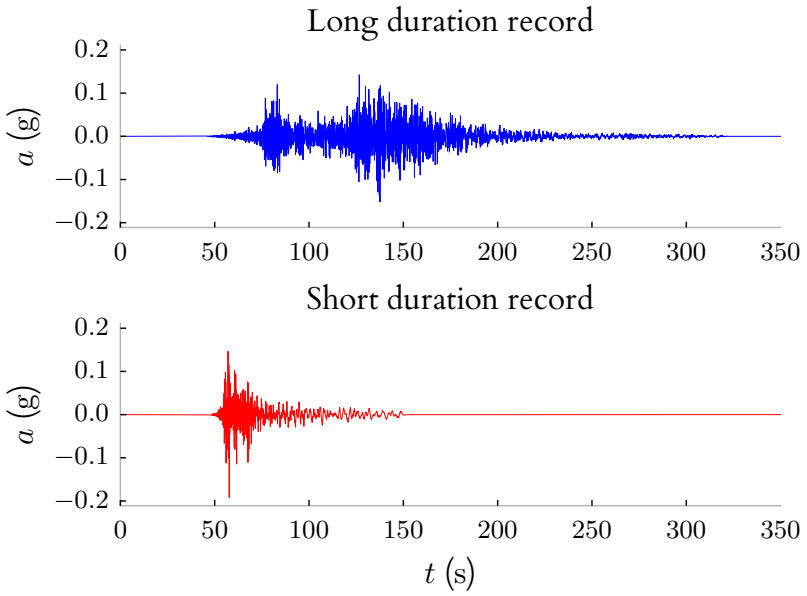




Spectrally equivalent record pair #146

Earthquake	Station name	Filename	Scale factor	Ds_{5-75} (s)
2011 Tohoku, Japan	Yonezawa	YMTH071103111446_H2.th	–	70
2007 Chuetsu-oki	Niigata Nishi Kaba District	CHUETSU/690E1EW.AT2	1.17	12





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