APPENDIX B: Summary of ESA Results of 45 Liquefaction Cases Histories

This appendix section contains electronic files from the numerical simulation performed in Chapter 5, including:

- AFP-time histories of all 352 Christchurch and 4 Port Island simulation results
- Input ground motions used in the analysis

Table B.1 Summary of EPI values for all 356 ESA simulations

Case #	Site	Event	Max CACS	Nor. CACS	Par. CACS	Med CACS	Max RHSC	Nor. RHSC	Par. RHSC	Med RHSC
01	St. Teresa	DAR	0	0	0	0	0	0	0	0
02	St. Teresa	CHC	0	0	0	0	0	0	1	0
03	St. Teresa	JUN	0	0	0	0	0	0	0	0
04	200 Cashmere	DAR	0	0	0	0	0	0	0	0
05	200 Cashmere	JUN	0	0	0	0	0	0	0	0
06	200 Cashmere	CHC	0	0	0	0	0	0	0	0
07	Caulfield	CHC	0	0	0	0	0	0	0	0
08	Caulfield	DAR	0	0	0	0	0	0	0	0
09	Caulfield	JUN	0	0	0	0	0	0	0	0
10	Gainsborough	DAR	0	0	0	0	0	0	0	0
11	Gainsborough	JUN	0	0	0	0	0	0	0	0
12	Gainsborough	CHC	0	0	0	0	0	0	5	0
13	Hillsborough	DAR	0	0	0	0	0	0	0	0
14	Hillsborough	JUN	0	0	0	0	0	0	0	0
15	Hillsborough	CHC	0	0	0	0	0	0	0	0
16	Paeroa	DAR	0	1	0	0	0	0	0	0
17	Paeroa	JUN	0	1	0	0	0	0	0	0
18	Barrington	DAR	0	0	0	0	0	0	0	0
19	Barrington	JUN	0	0	0	0	0	0	0	0
20	Shirley	DAR	0	0	0	0	0	0	0	0
21	Palinurus_1	CHC	0	0	0	1	0	0	0	0
22	Palinurus_1	JUN	0	1	0	1	2	0	0	0
23	CMHS	CHC	0	0	0	0	3	2	6	7
24	Paeroa	CHC	0	0	1	0	1	4	0	0
25	Carisbrooke	CHC	22	13	20	3	8	11	8	5
26	Brougham St.	CHC	13	24	28	26	28	25	8	25
27	Rydal	DAR	55	56	41	48	36	40	53	52
28	Avondale PG	JUN	47	77	34	58	43	43	27	42
29	Cresselly	JUN	60	67	63	64	65	62	57	58
30	Barrington	CHC	76	76	80	76	80	80	81	80
31	Avondale PG	CHC	80	58	55	71	93	84	23	75
32	Sabina	CHC	76	74	71	75	156	150	153	154
33	Avondale Park	JUN	98	109	100	98	89	104	86	105
34	Sabina	JUN	89	103	52	86	150	123	165	94

35	Palinurus_2	CHC	114	125	119	113	130	109	139	139
36	TiRakau	JUN	118	106	116	116	99	112	105	110
37	Palinurus2	JUN	118	120	96	103	120	123	127	111
38	Shirley	JUN	217	150	0	215	170	134	195	107
39	Ti Rakau	CHC	170	184	200	161	202	149	158	174
40	Cresselly	CHC	185	184	194	195	197	166	183	202
41	Rydal	CHC	267	253	238	239	263	264	258	259
42	Avondale Park	CHC	262	225	285	314	248	165	285	199
43	Port Island	Kobe	334*	310*	337*	157*				
44	Cashmere SW	CHC	486	477	328	324	338	355	313	308
45	Shirley	CHC	455	260	482	433	428	414	392	343

Note: Max: Maximum (RotD100) ; Nor: fault-normal; Par.: fault-parallel; Med: Median (RotD50).

* Case #43: Port Island EPI values of 334 , 310, 337, and 157 are the values computed using Maximum, recorded North-South, recorded East-West, and Minimum component of 4 input ground motions at 32.- m depth as presented in Cubrinovski et al. 1996.

Case History #01: St.Teresa-DAR (M_w7.1, R_{rup} 18.3 km, Riccarton Gravel V_{S30} = 400 m/s)

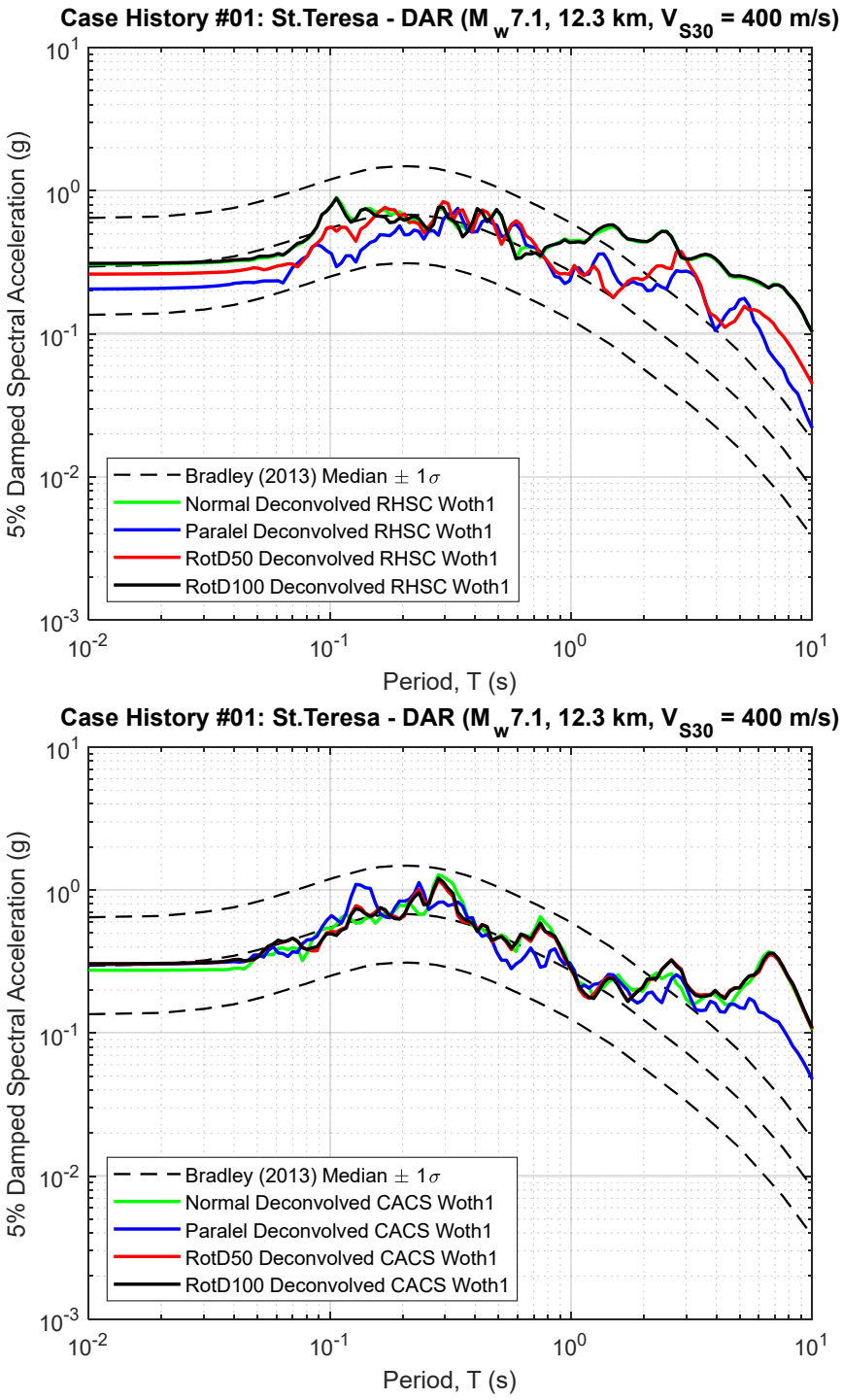


Figure B1.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)

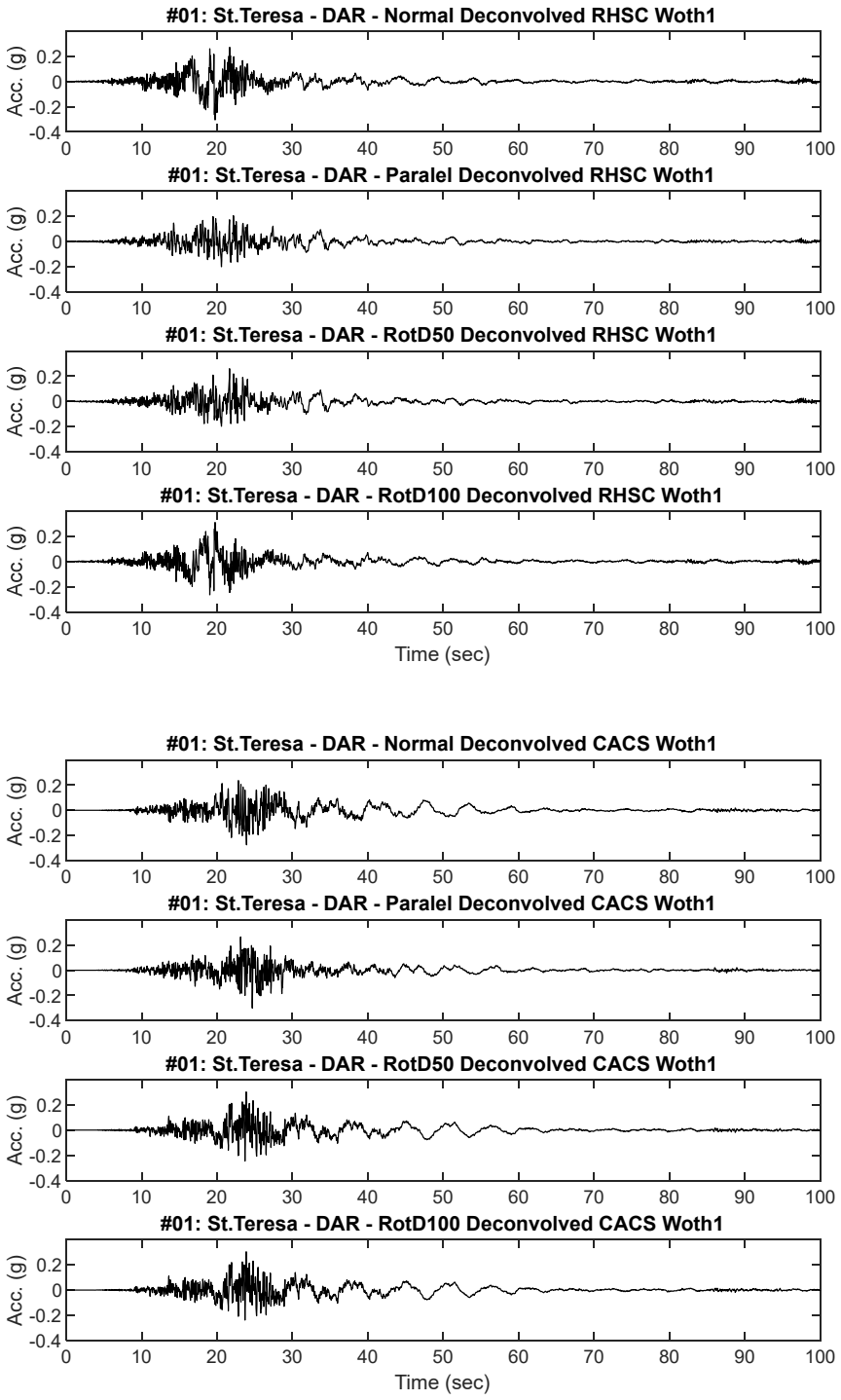


Figure B1.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

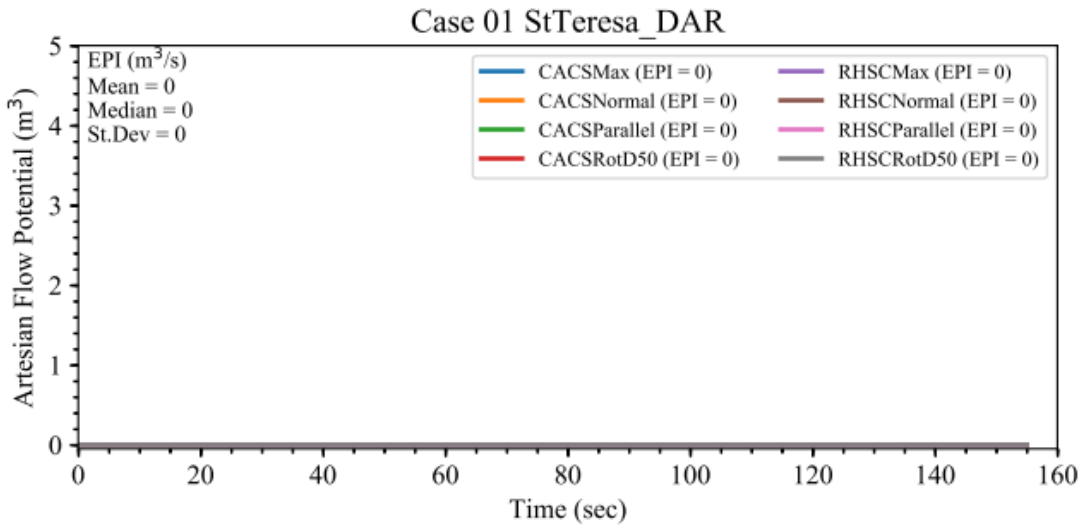


Figure B1.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #02: St.Teresa-CHC (M_w6.2, R_{rup} 5.7 km, Riccarton Gravel V_{S30} = 400 m/s)

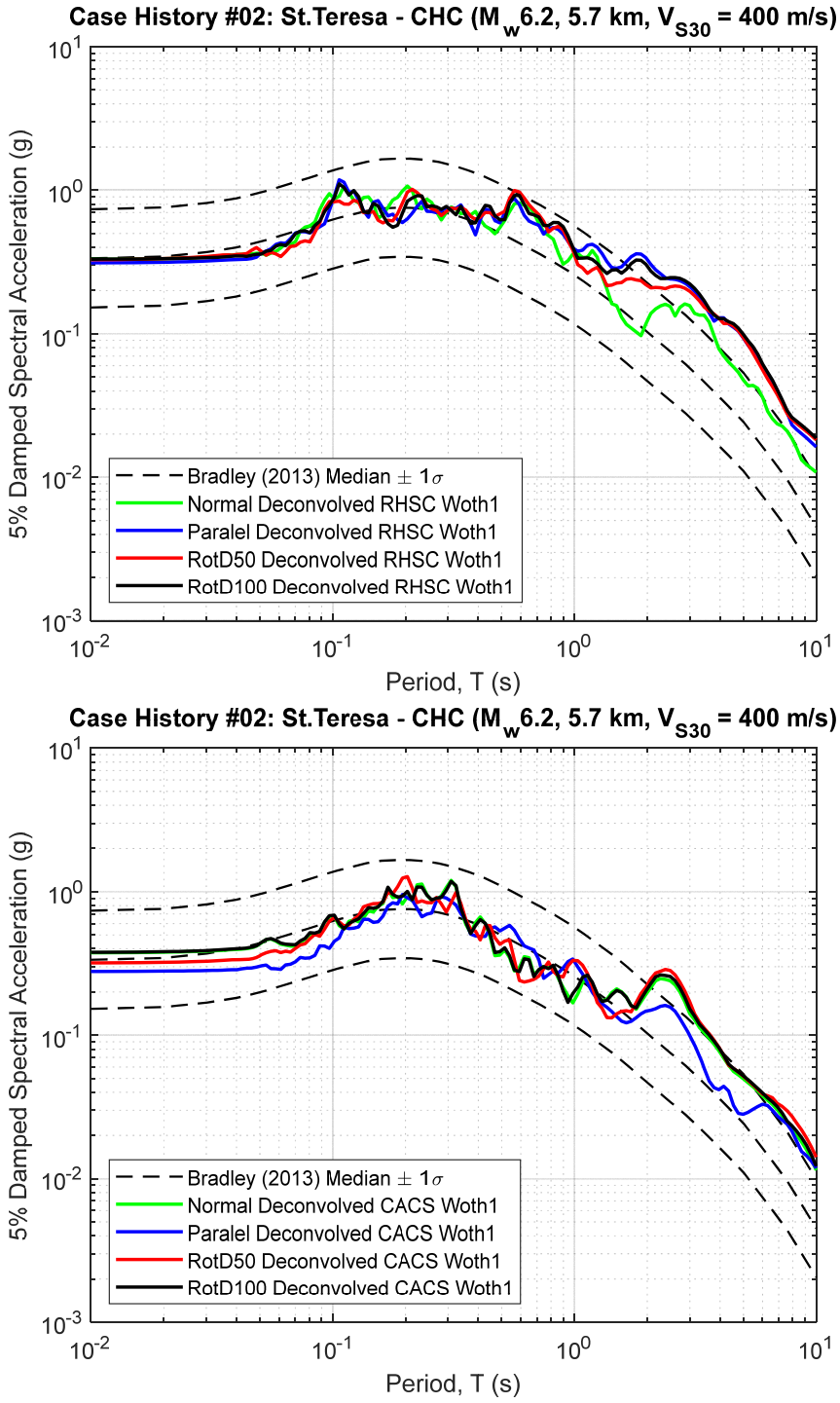


Figure B2.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)

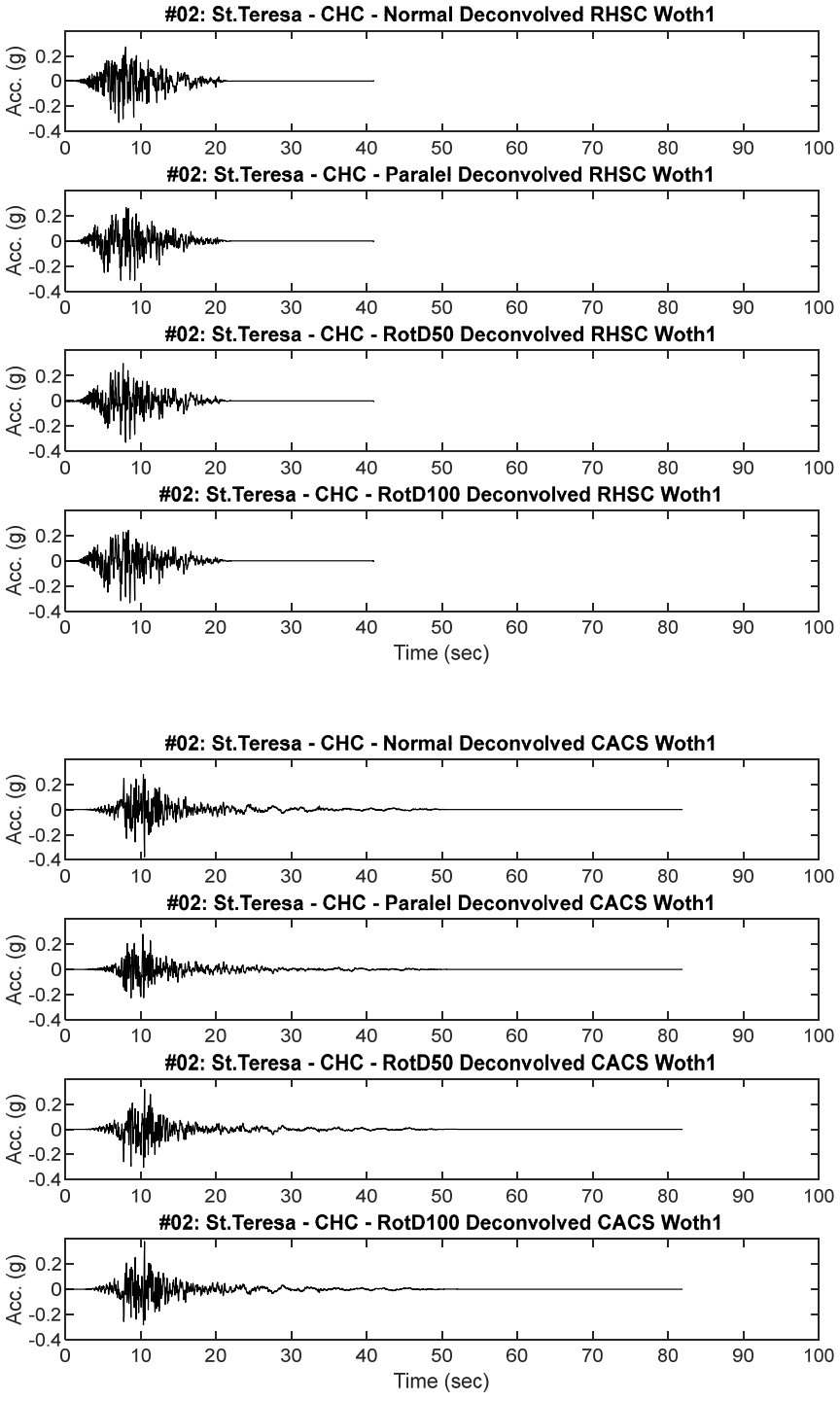


Figure B2.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

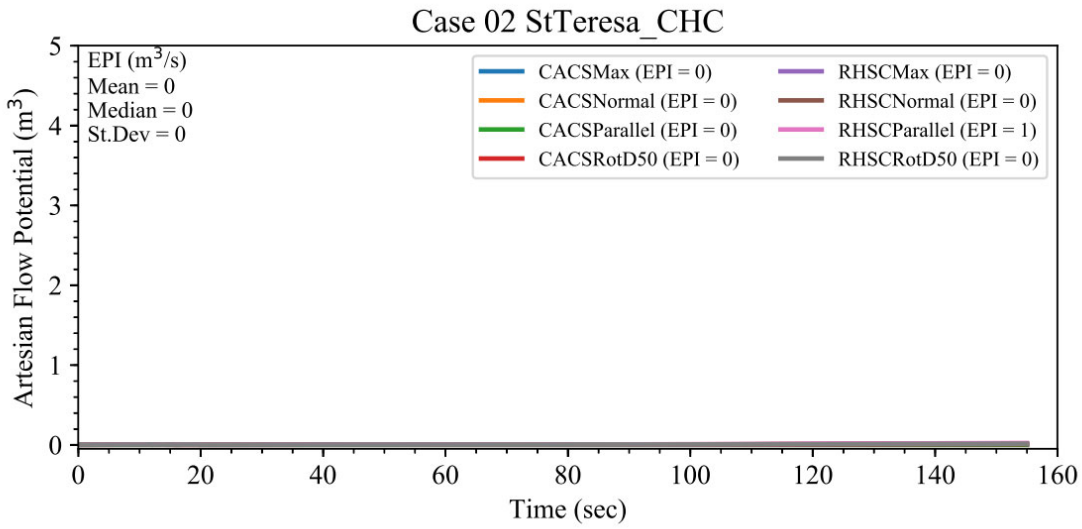


Figure B2.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #03: St.Teresa-CHC (M_w6.2, R_{rup} 6.0 km, Riccarton Gravel V_{S30} = 400 m/s)

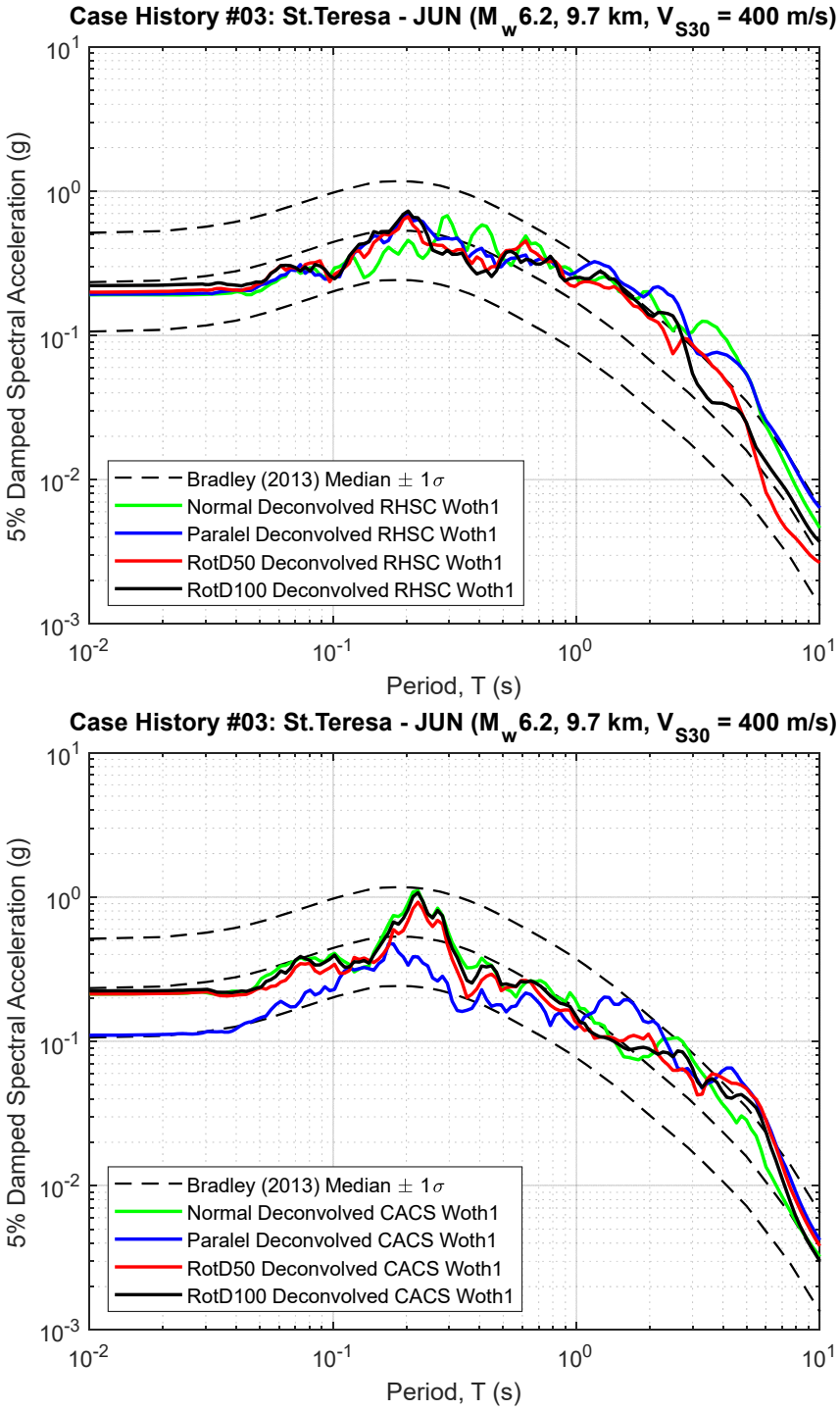


Figure B3.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

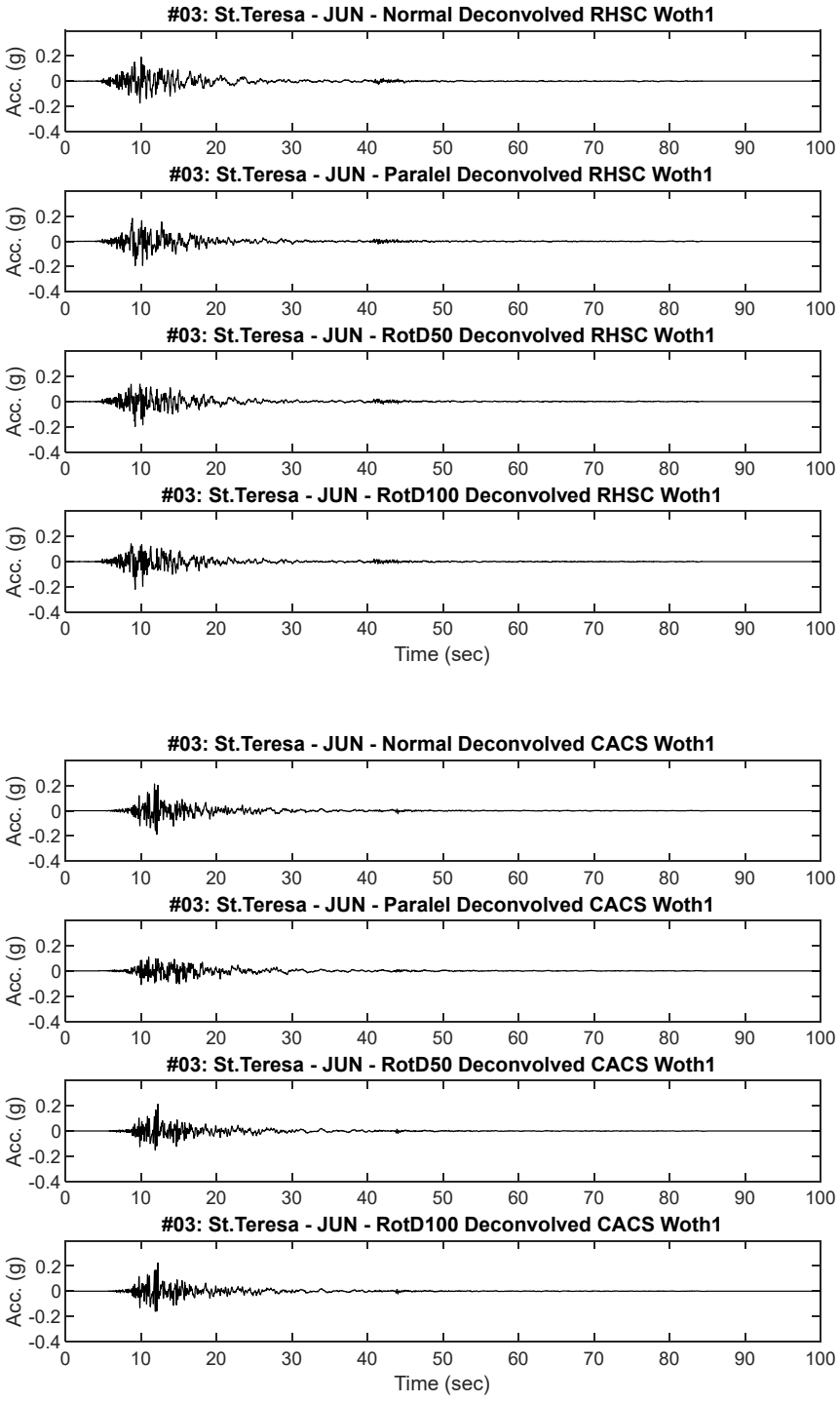


Figure B3.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

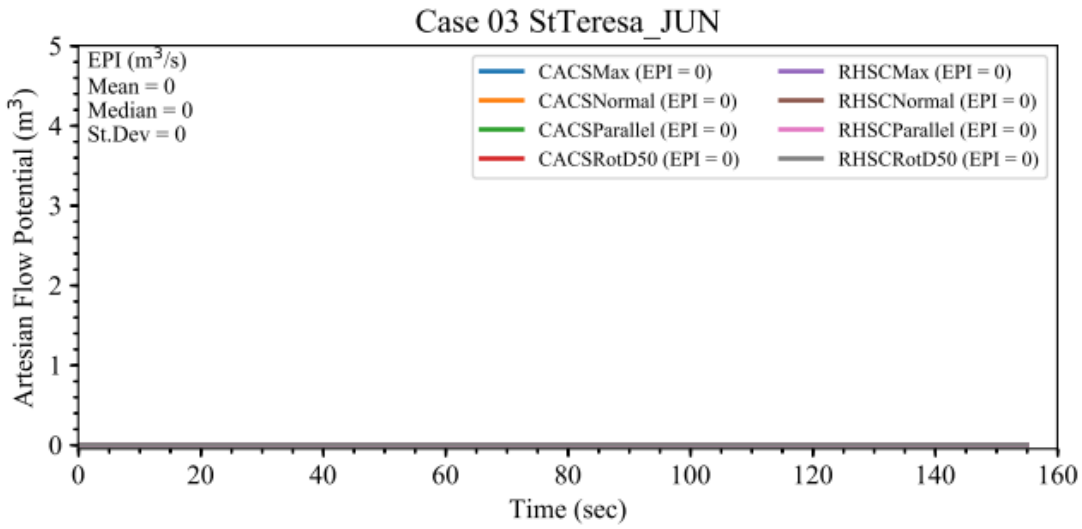


Figure B3.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #04: 200 Cashmere-DAR (M_w7.1, R_{rup} 6.0 km, Riccarton Gravel V_{S30} = 400 m/s)

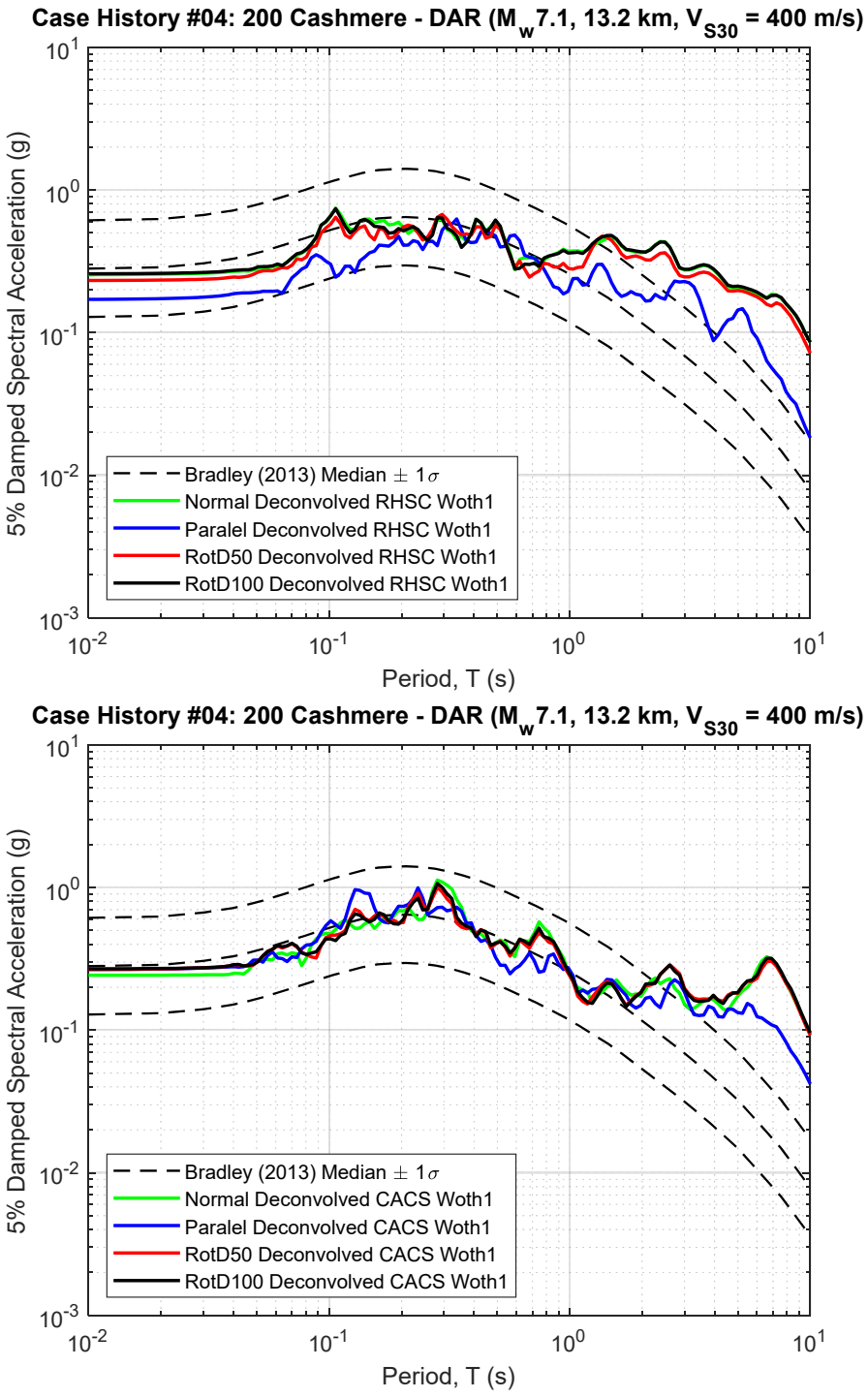


Figure B4.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

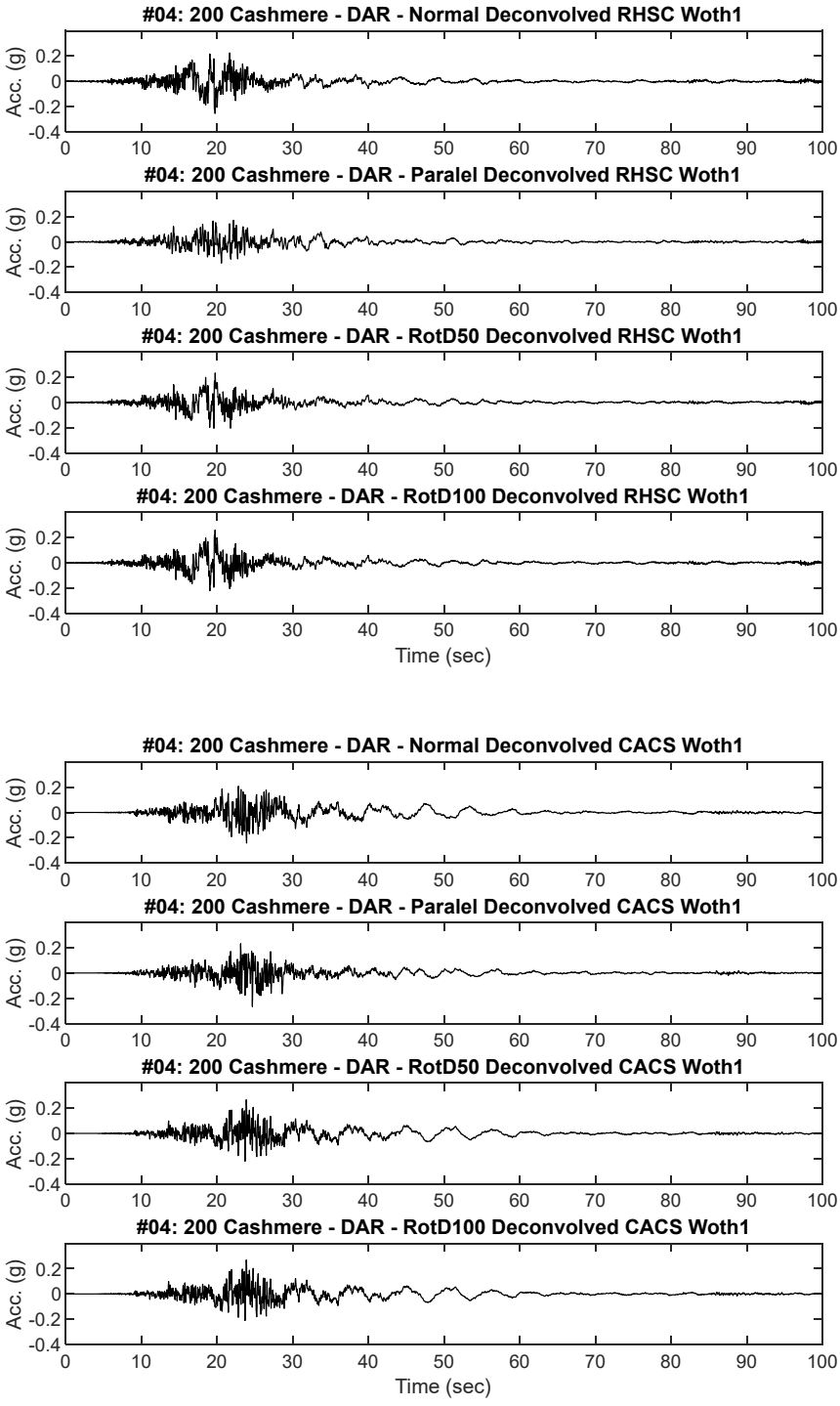


Figure B4.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

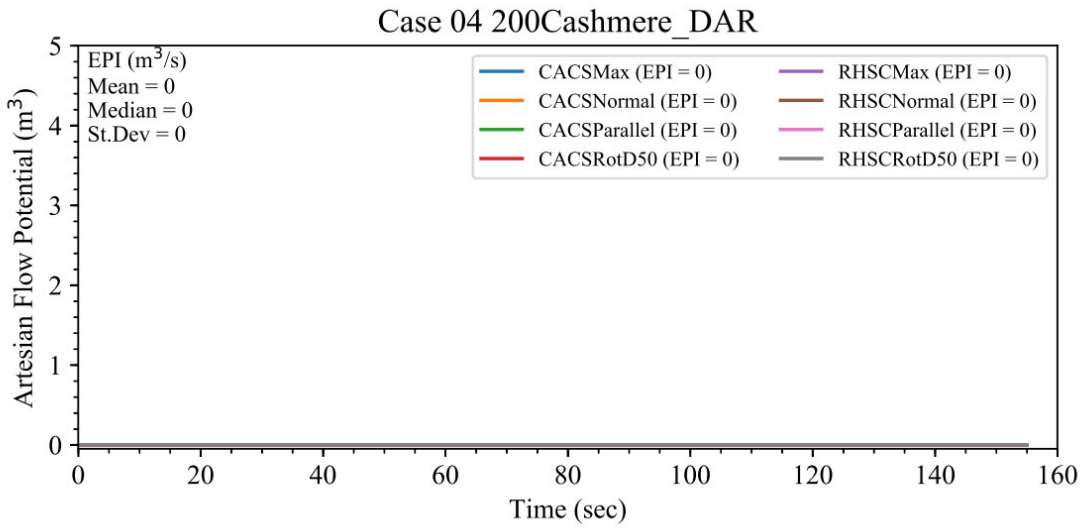


Figure B4.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #05: 200 Cashmere-JUN (M_w6.2, R_{rup} 8.5 km, Riccarton Gravel V_{S30} = 400 m/s)

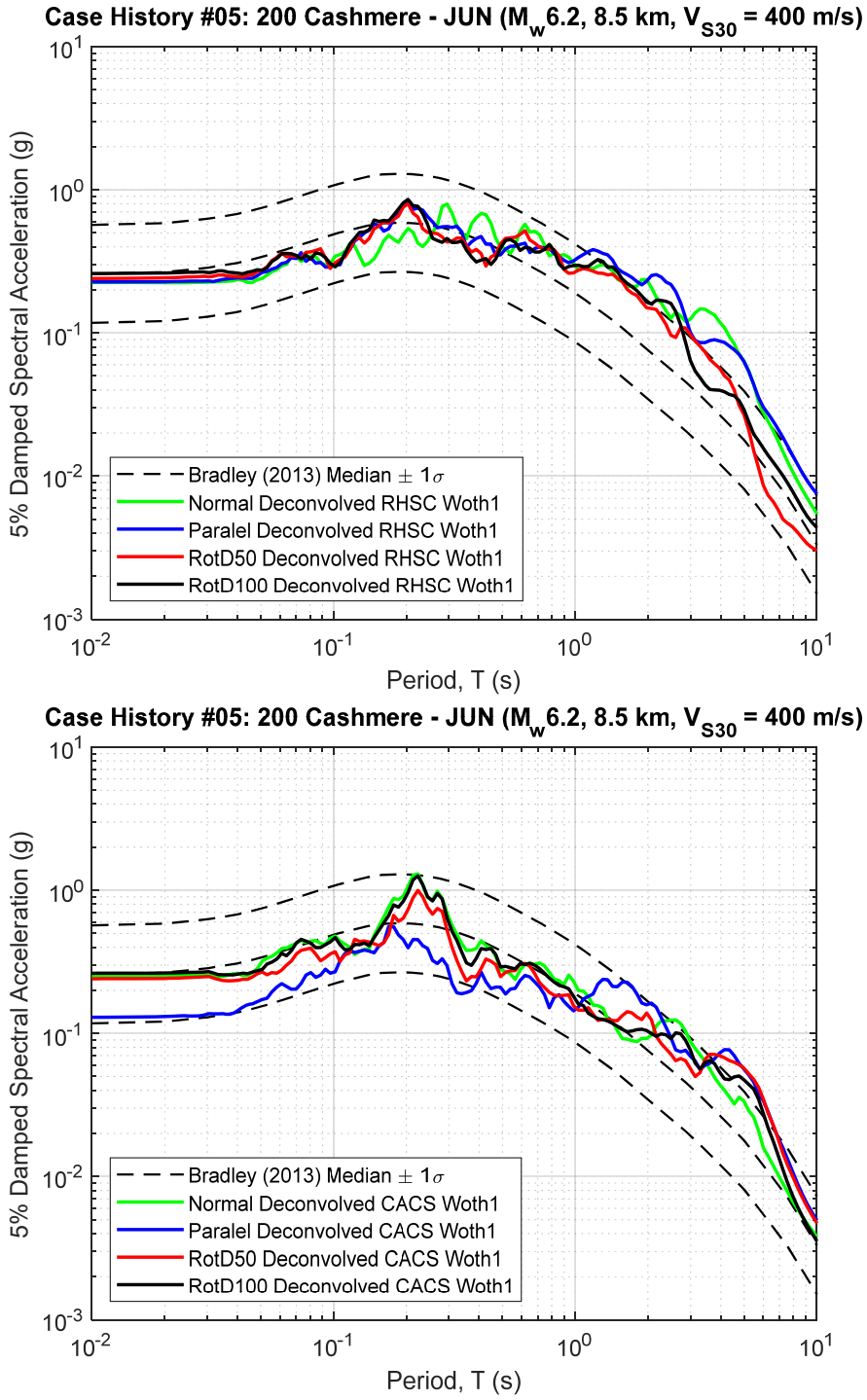


Figure B5.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

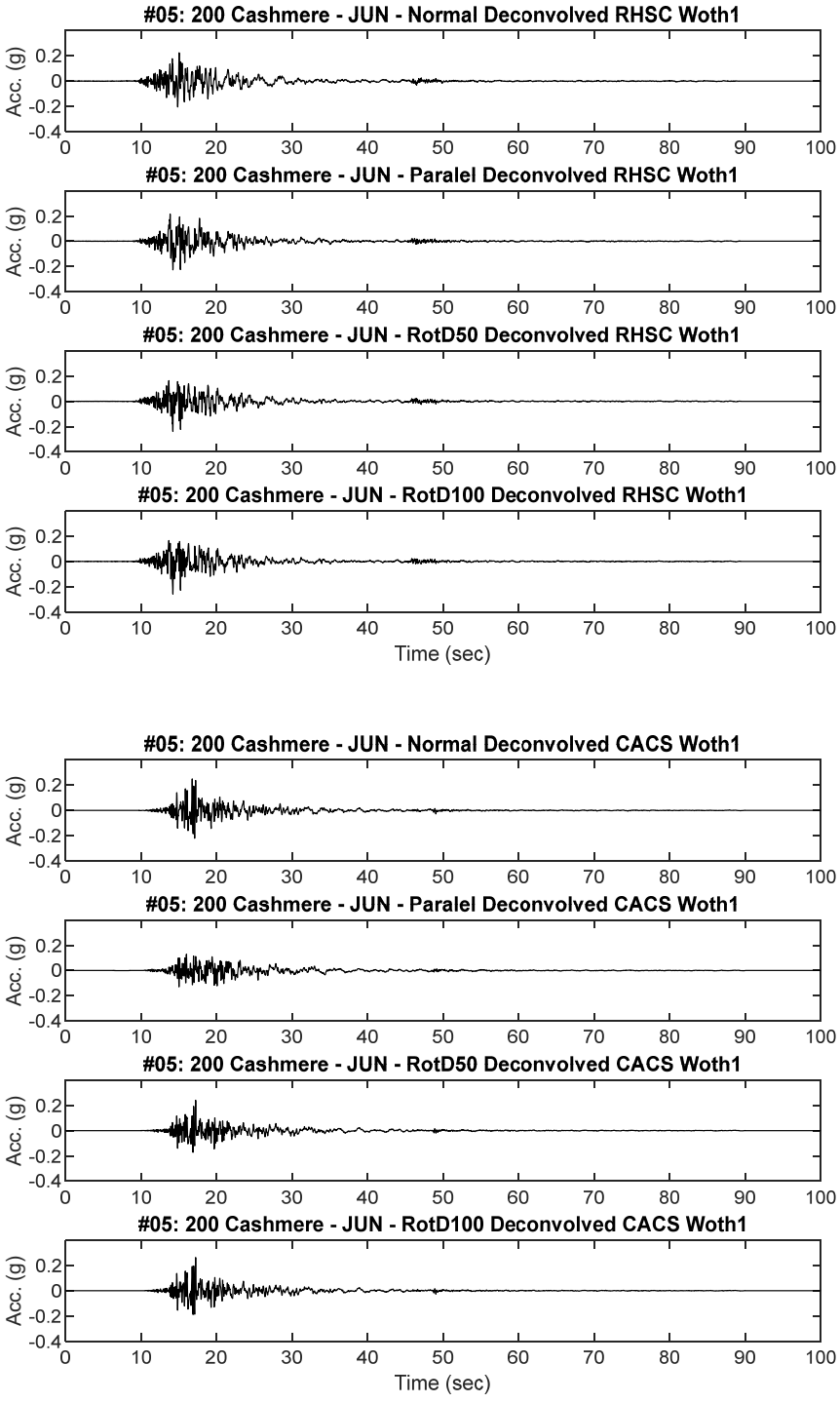


Figure B5.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

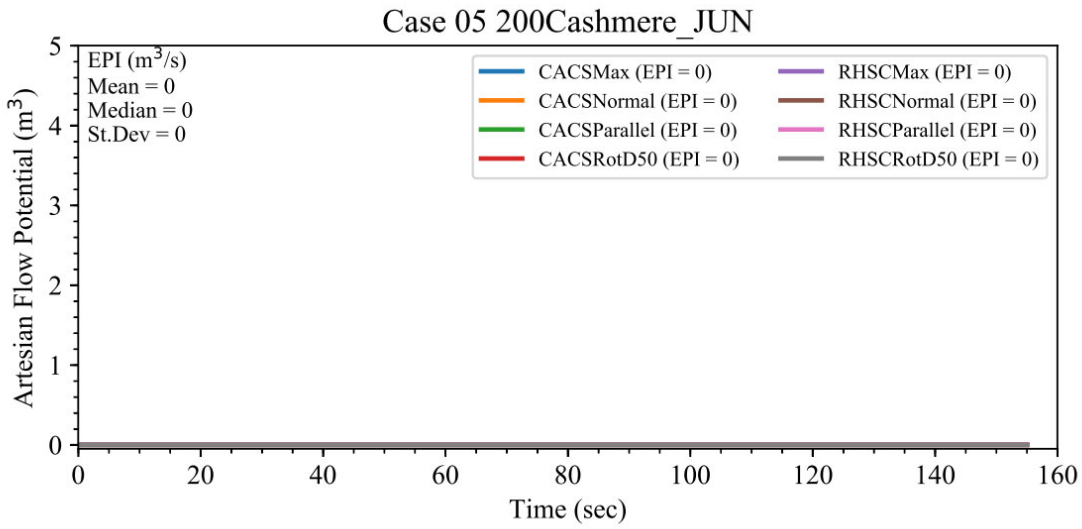


Figure B5.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

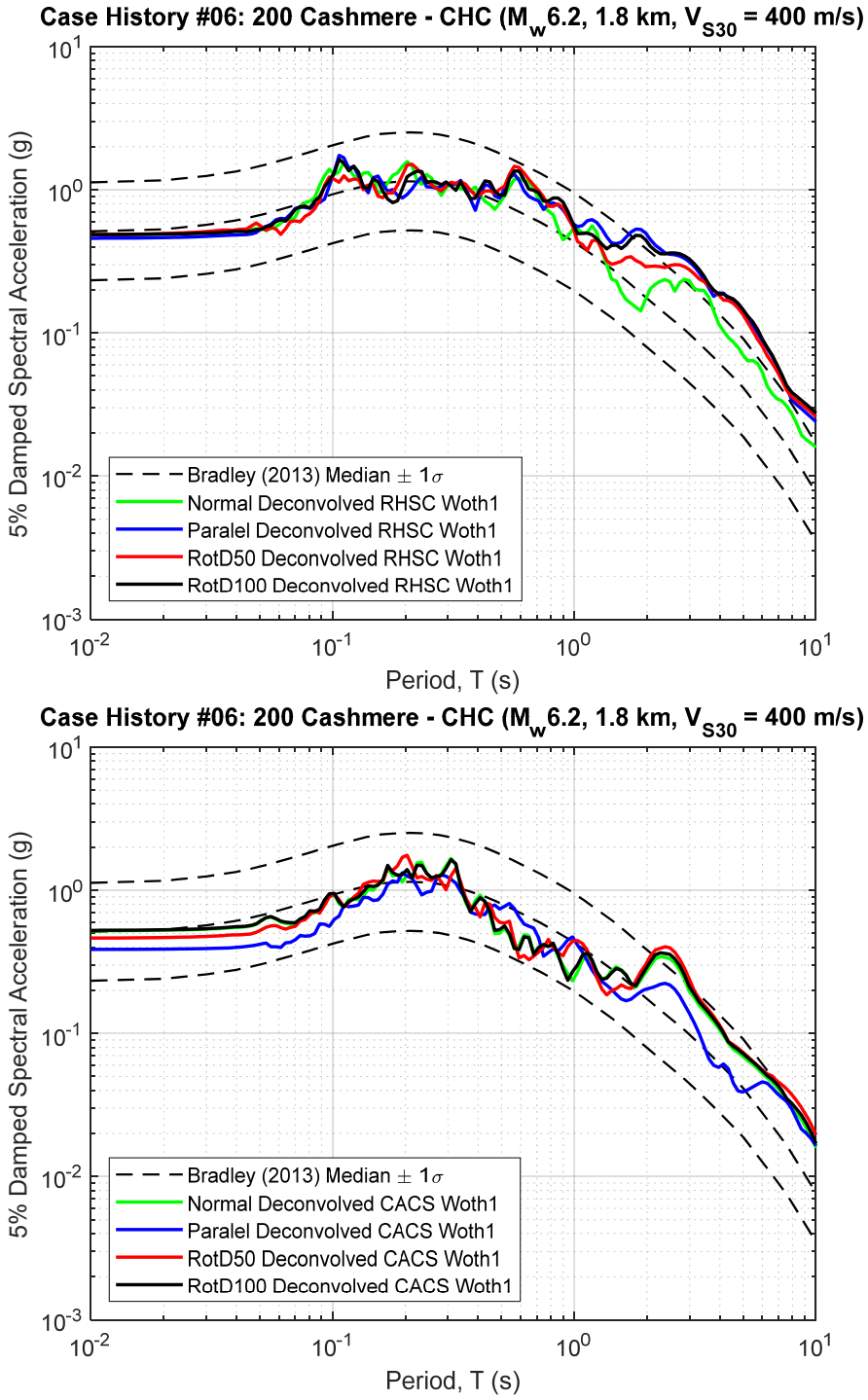
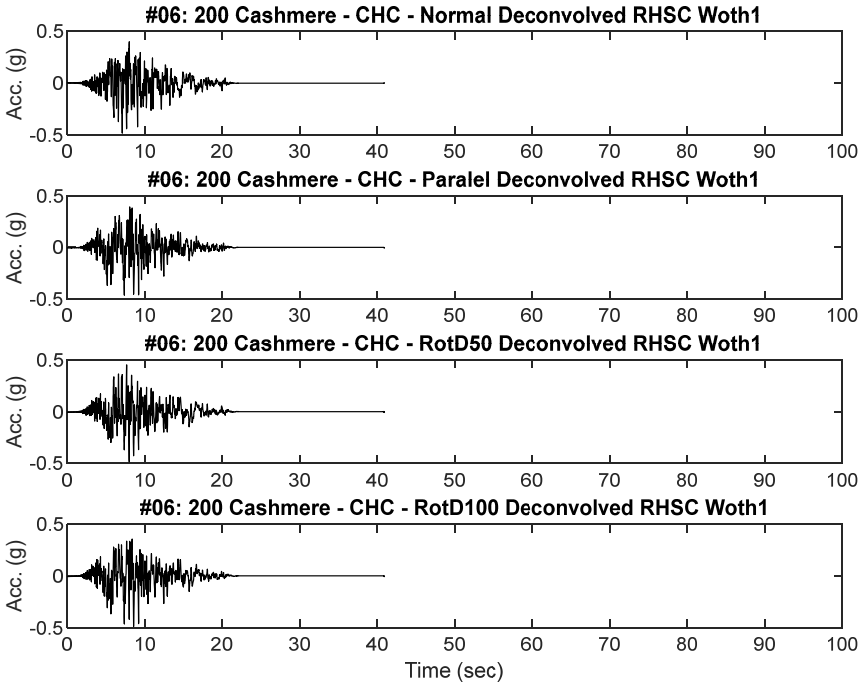


Figure B6.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



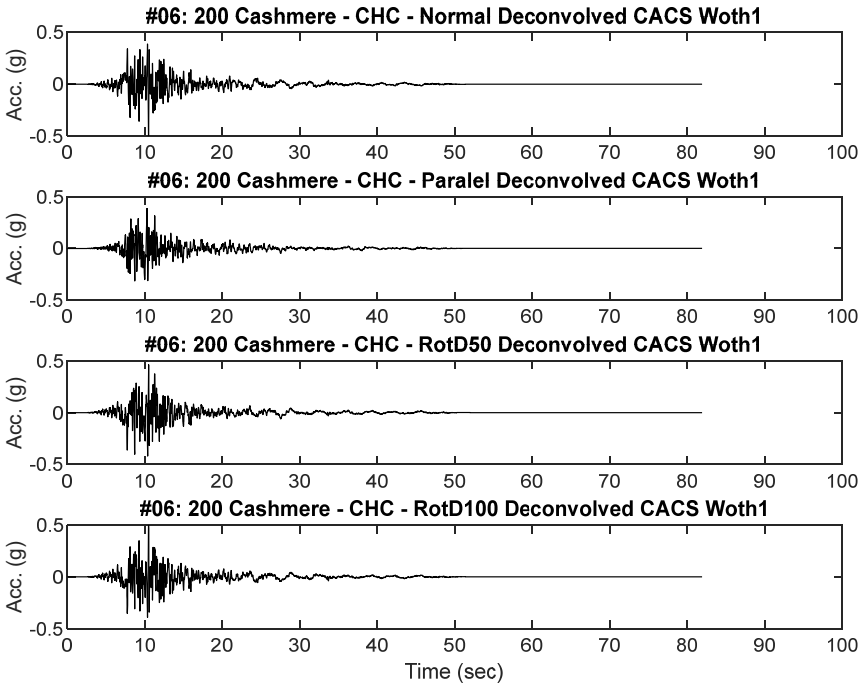


Figure B6.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

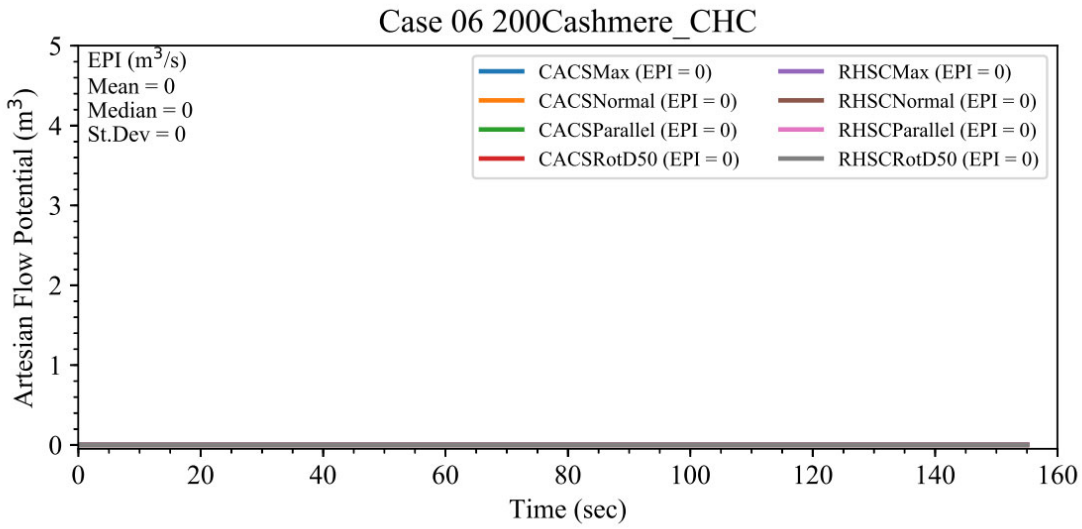


Figure B6.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #07: Caulfield-CHC (M_w6.2, R_{rup} 6.3 km, Riccarton Gravel V_{S30} = 400 m/s)

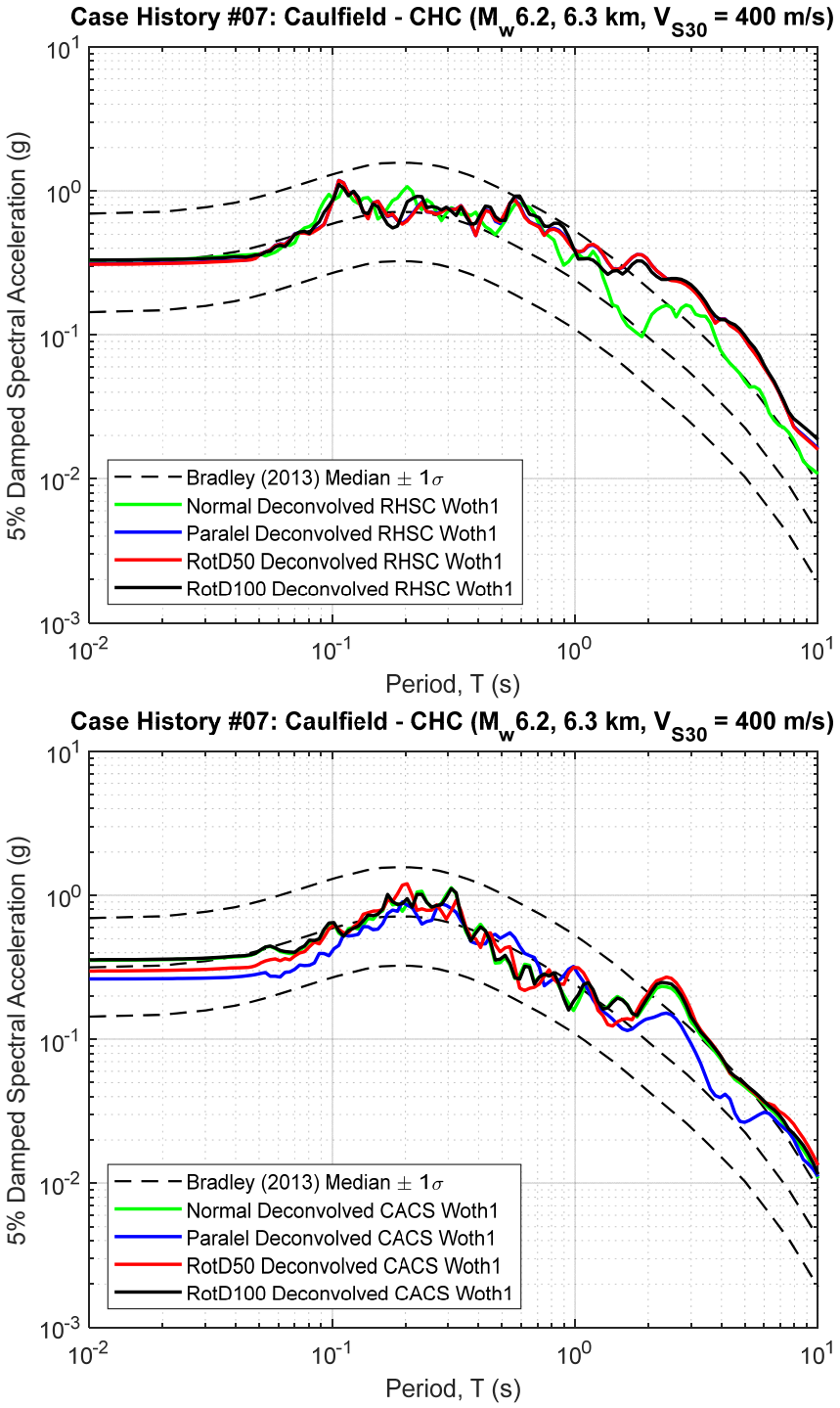
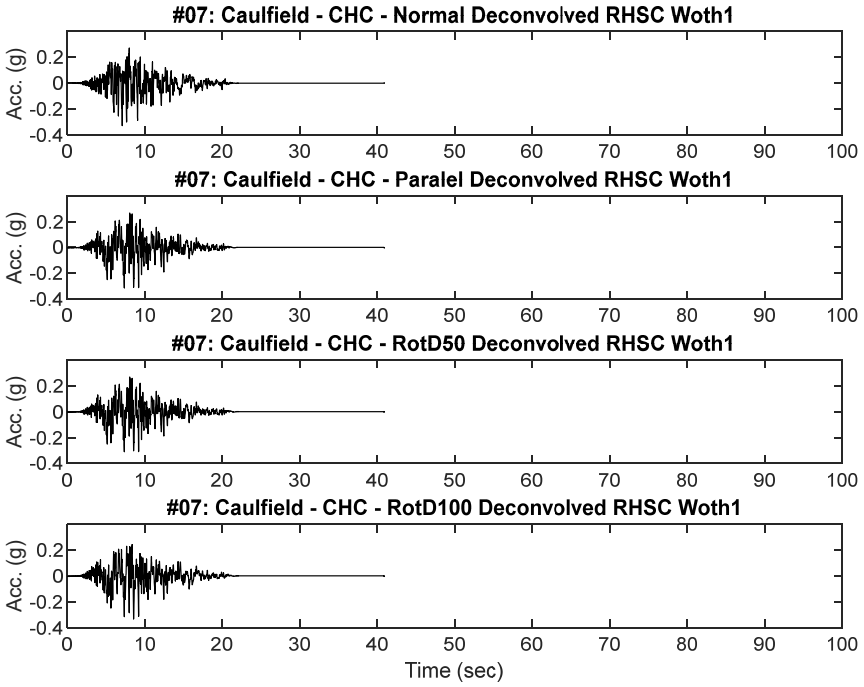


Figure B7.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)



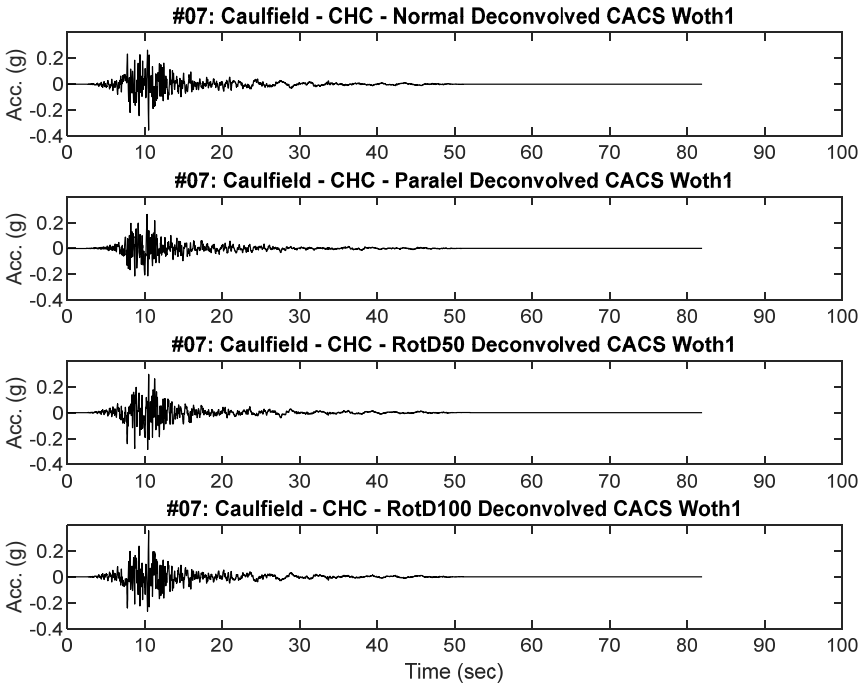


Figure B7.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

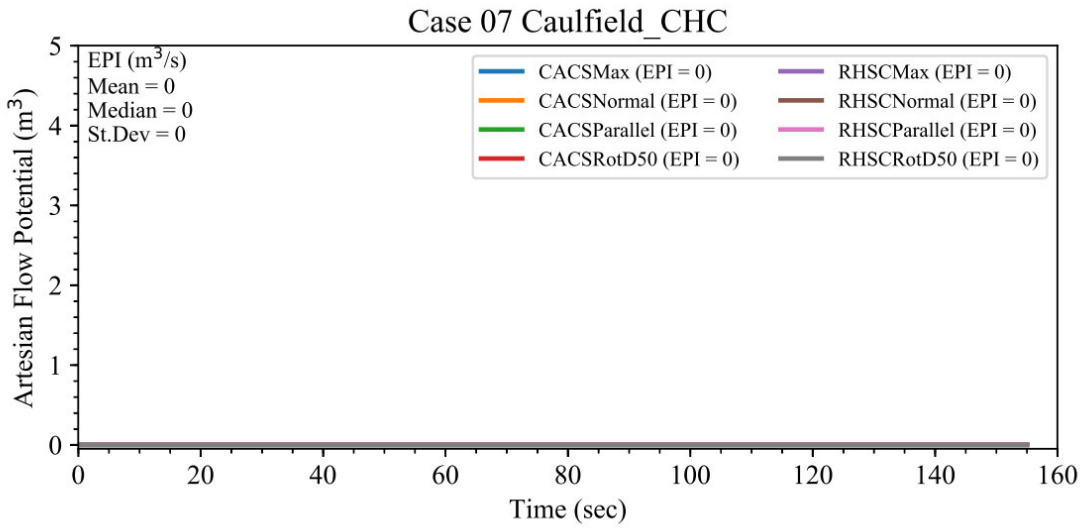


Figure B7.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #08: Caulfield-DAR (M_w7.1, R_{rup} 7.7 km, Riccarton Gravel V_{S30} = 400 m/s)

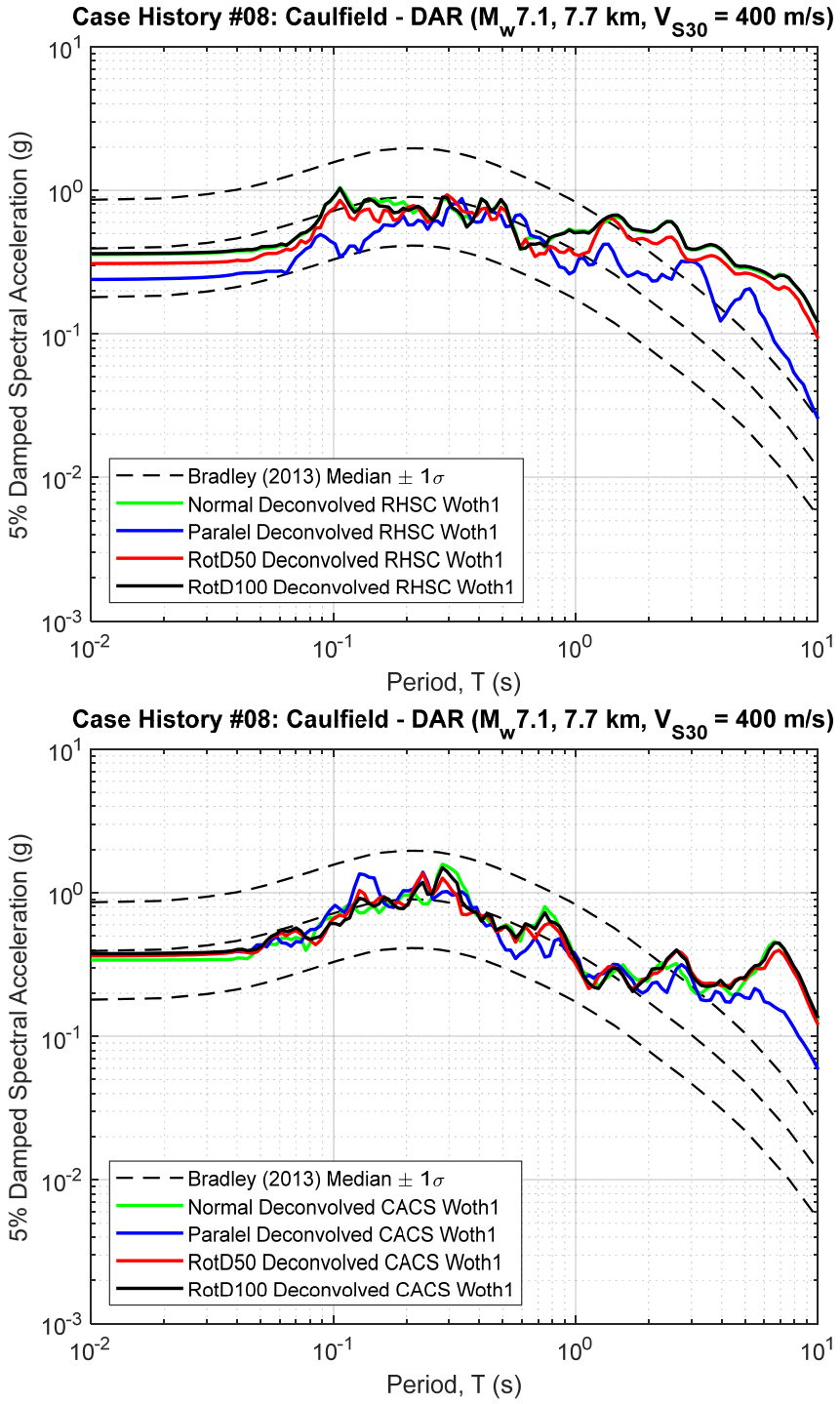
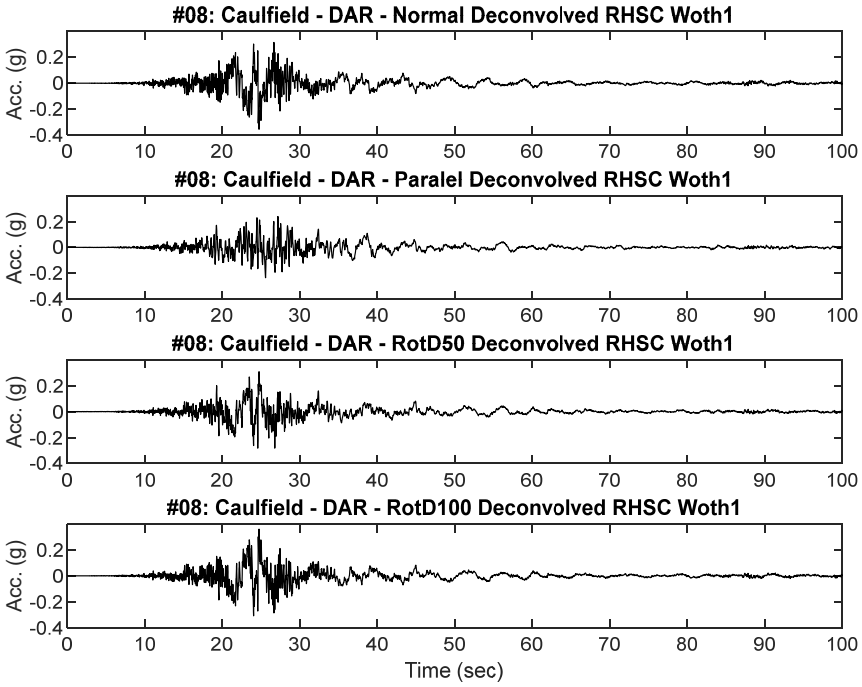


Figure B8.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)



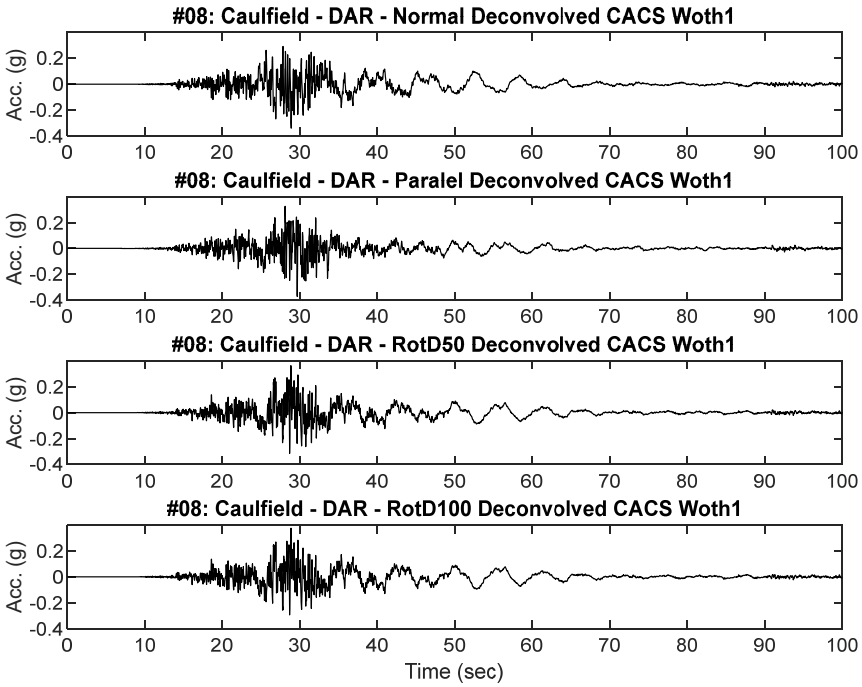


Figure B8.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

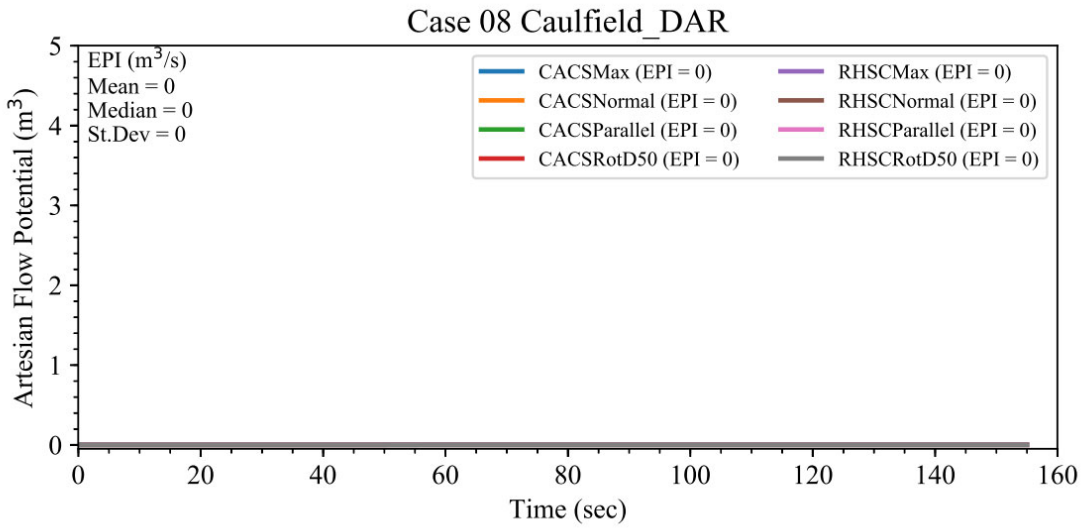


Figure B8.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #09: Caulfield-JUN (M_w6.2, R_{rup} 13.5 km, Riccarton Gravel V_{S30} = 400 m/s)

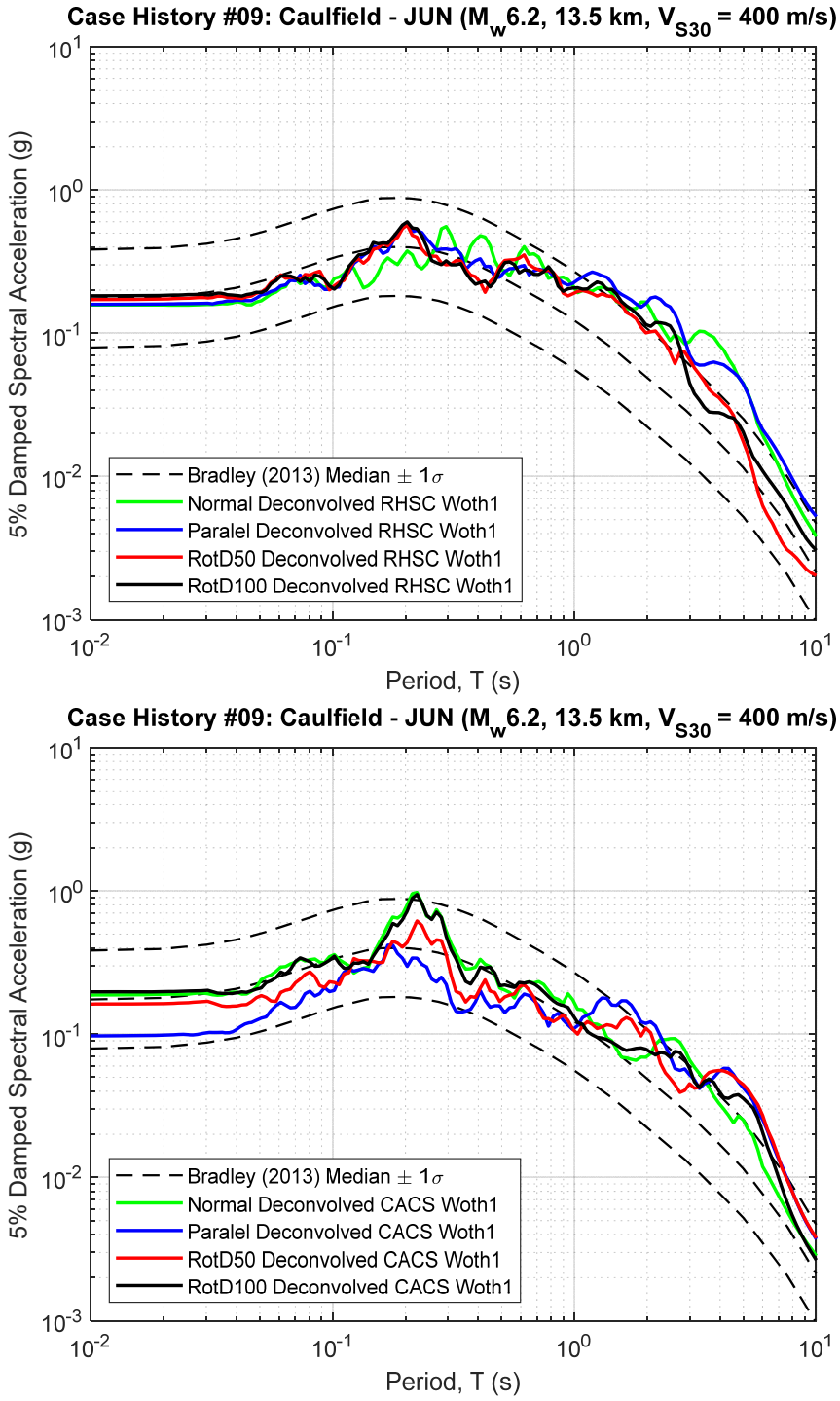
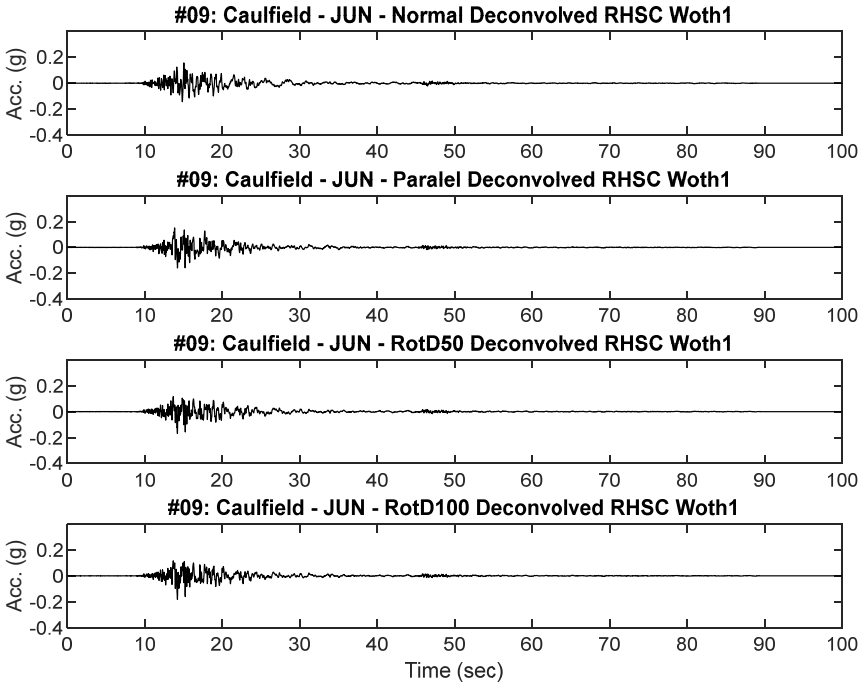


Figure B9.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



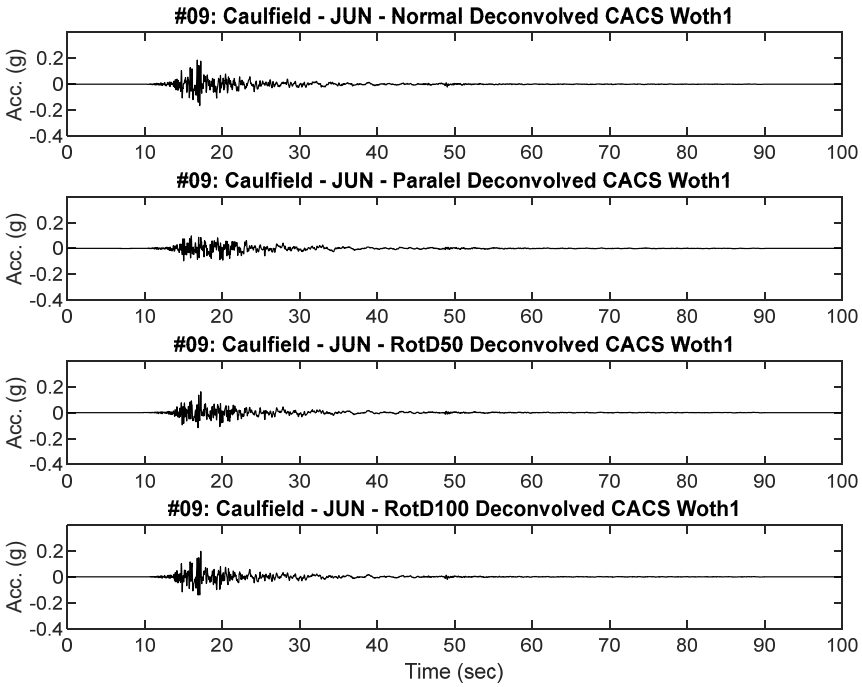


Figure B9.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

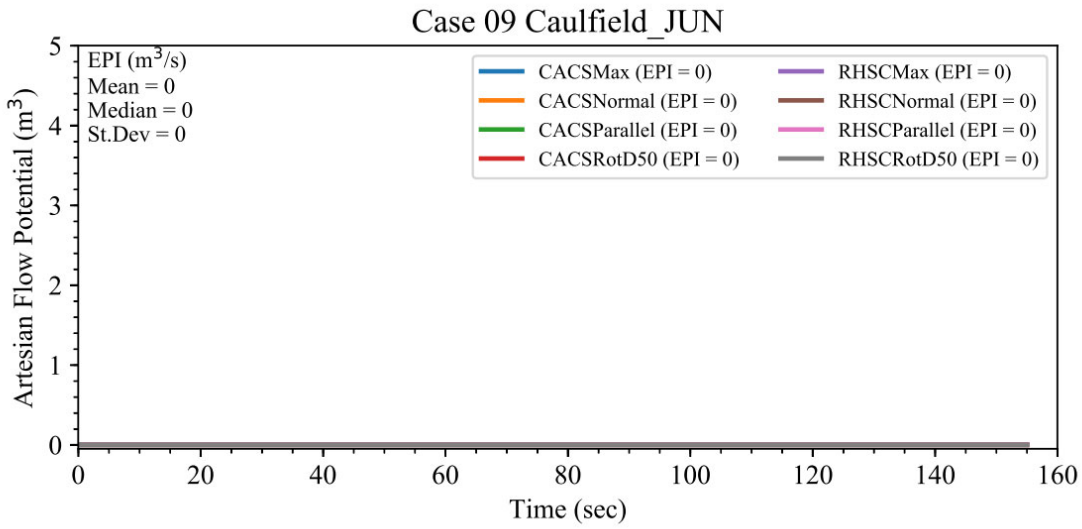


Figure B9.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #10: Gainsborough-DAR (M_w7.1, R_{rup} 12.1 km, Riccarton Gravel V_{S30} = 425 m/s)

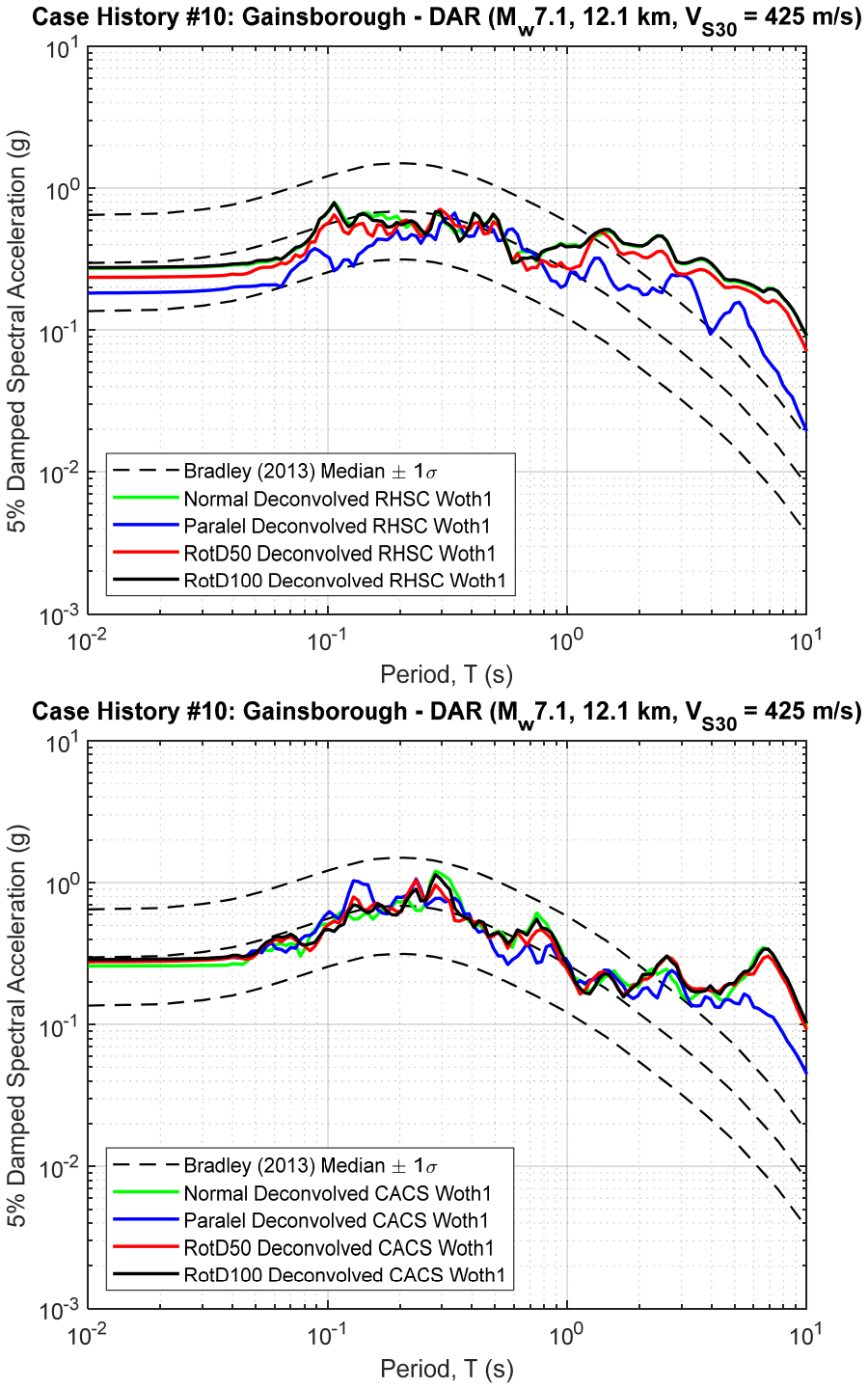
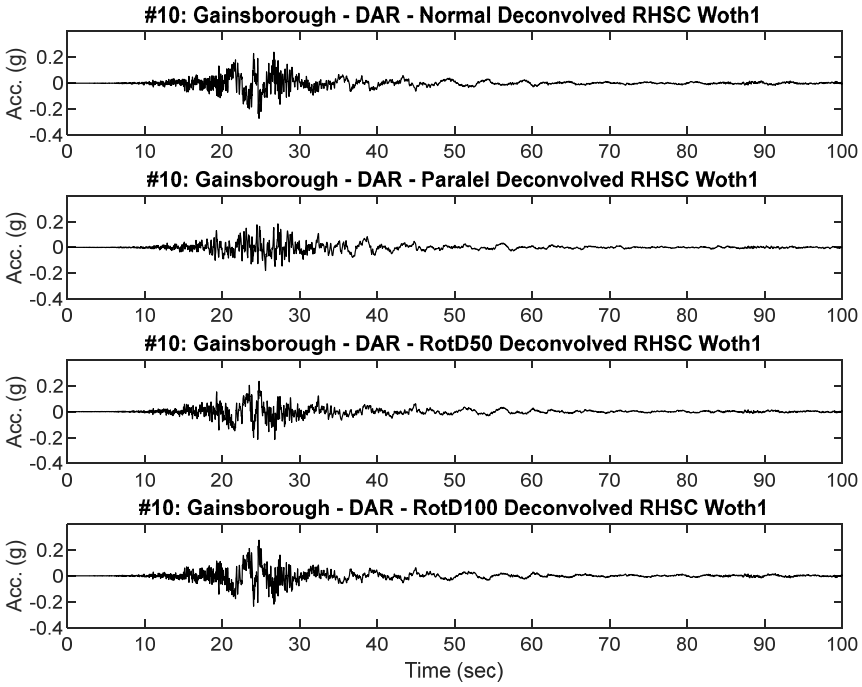


Figure B10.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



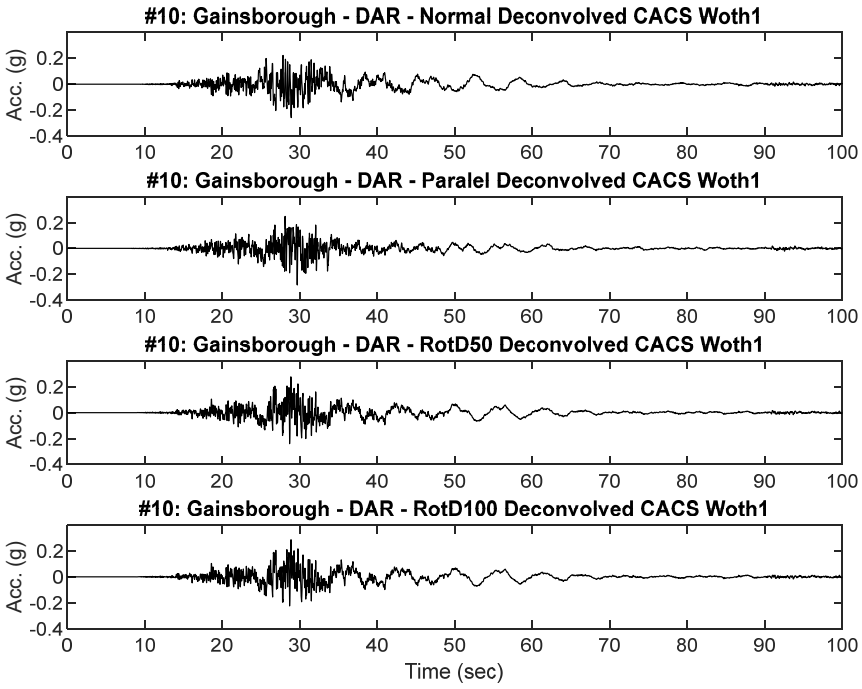


Figure B10.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

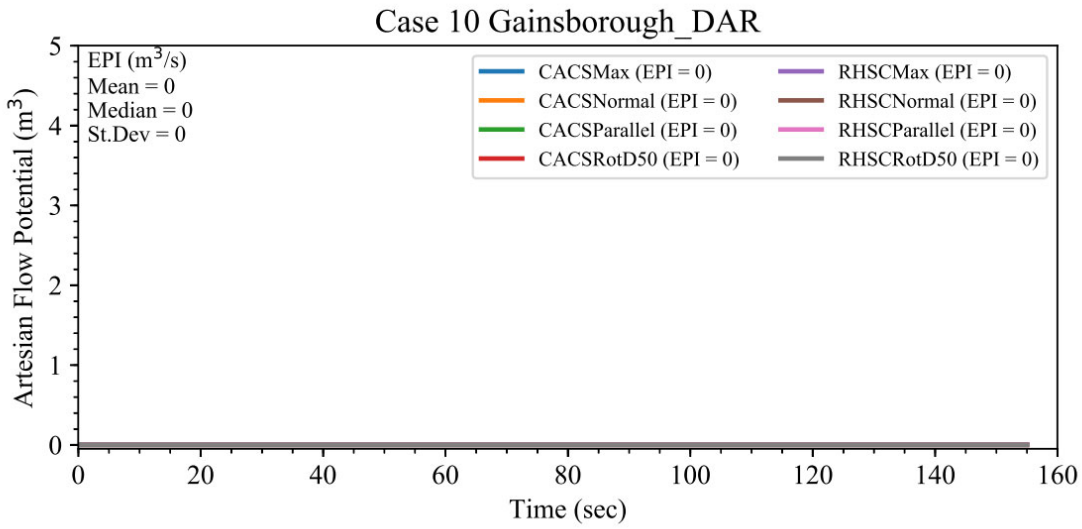


Figure B10.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #11: Gainsborough-JUN (M_w6.2, R_{rup} 8.5 km, Riccarton Gravel V_{S30} = 425 m/s)

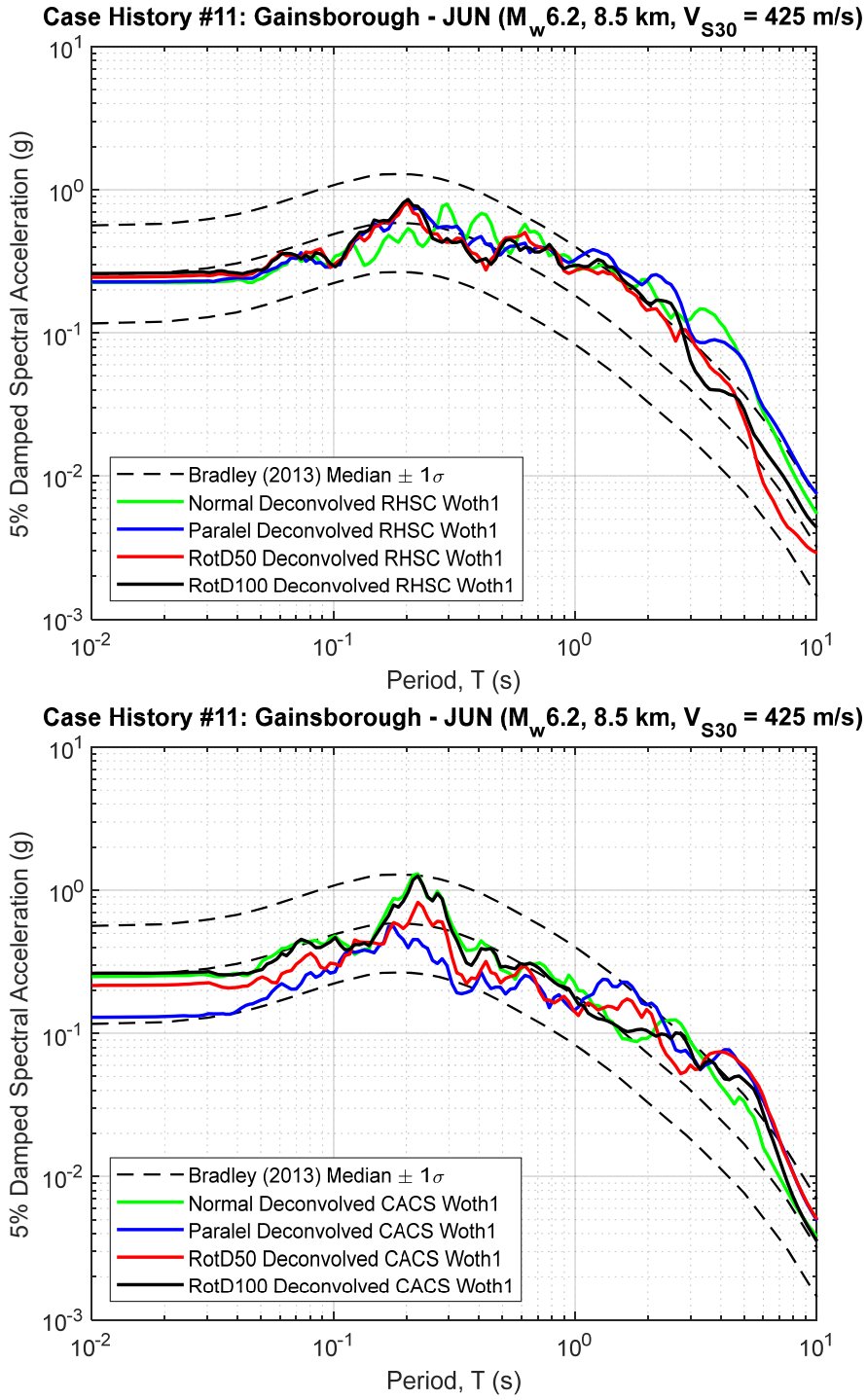
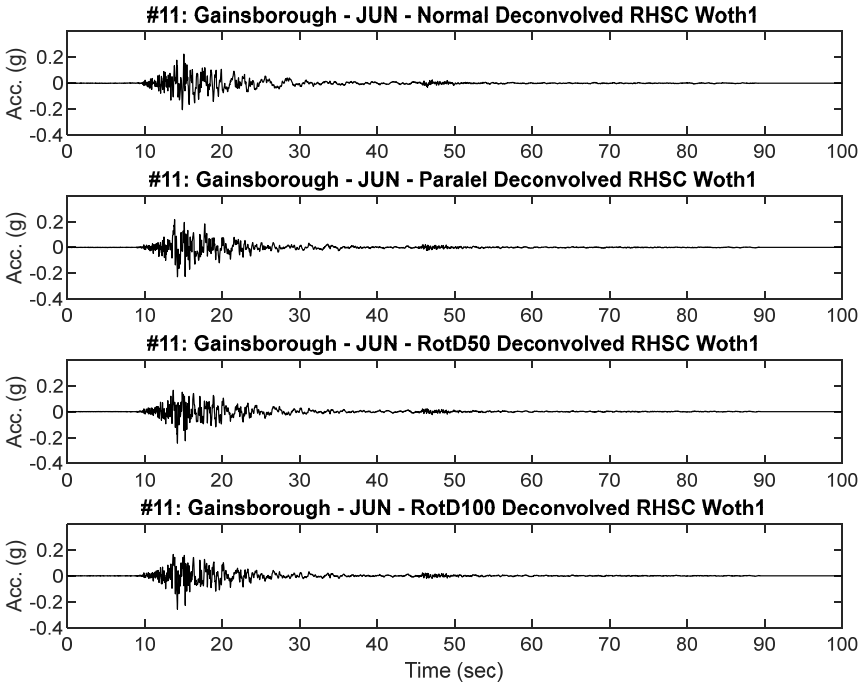


Figure B11.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



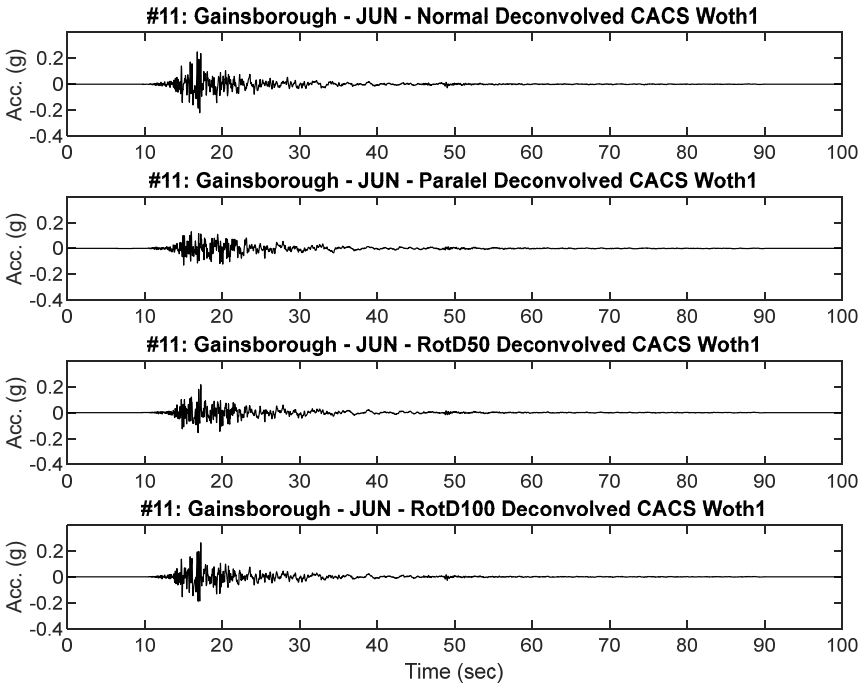


Figure B11.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

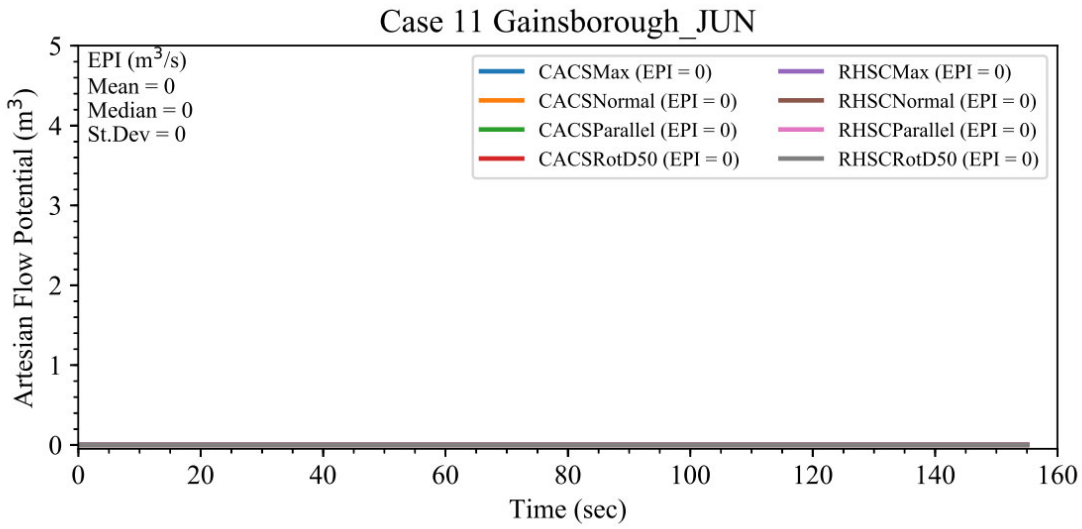


Figure B11.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #12: Gainsborough-CHC (M_w6.2, R_{rup} 2.8 km, Riccarton Gravel V_{S30} = 425 m/s)

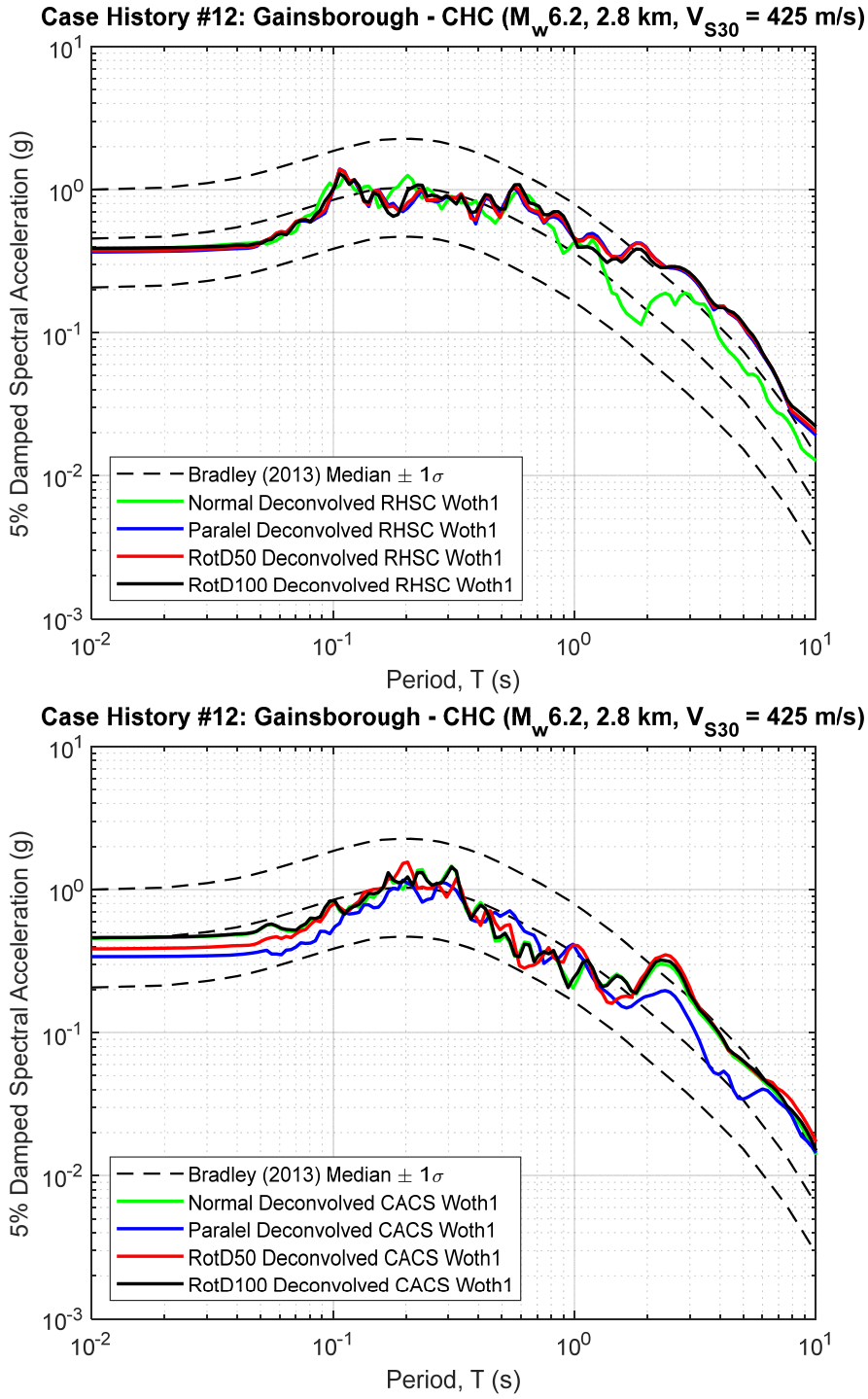


Figure B12.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

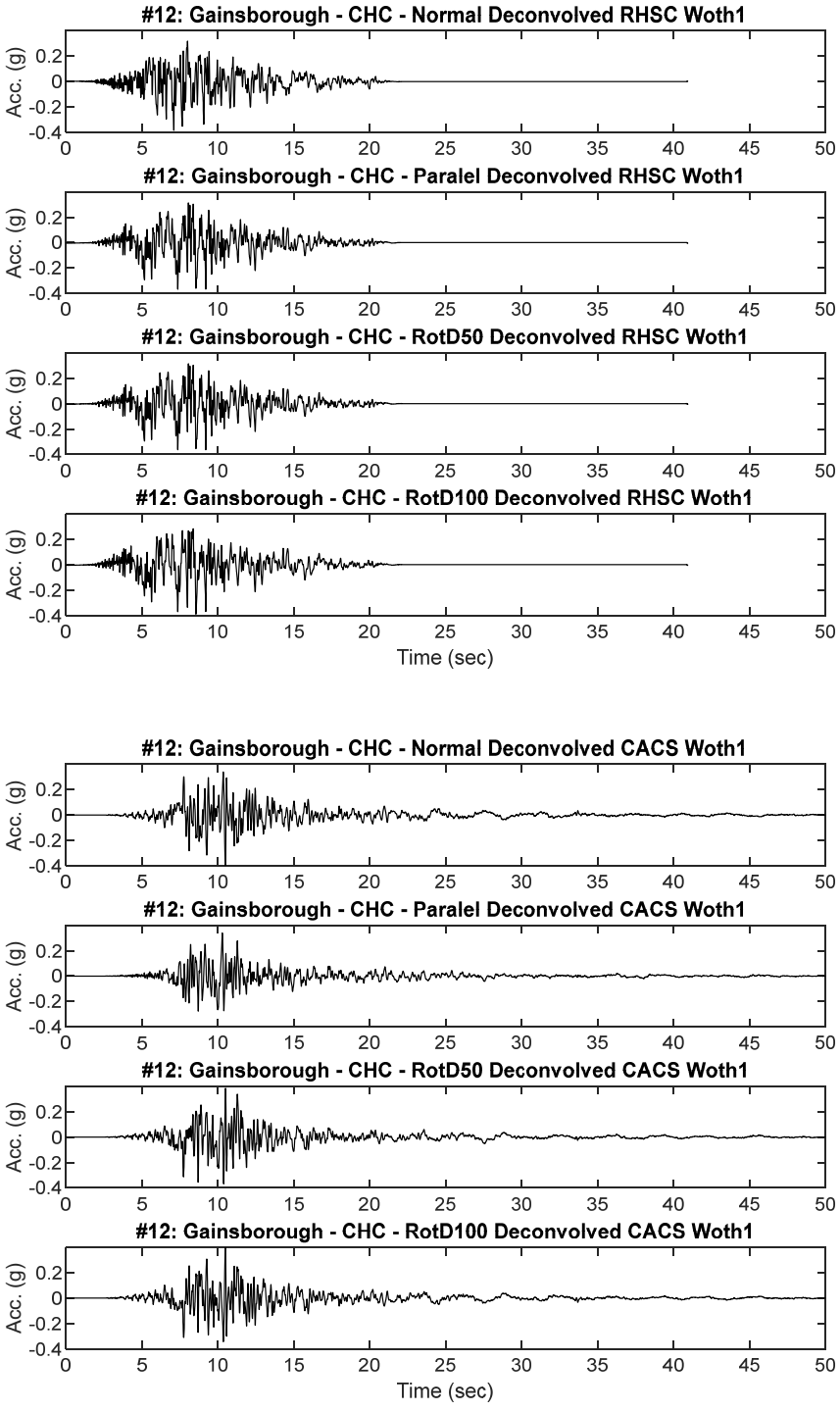


Figure B12.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

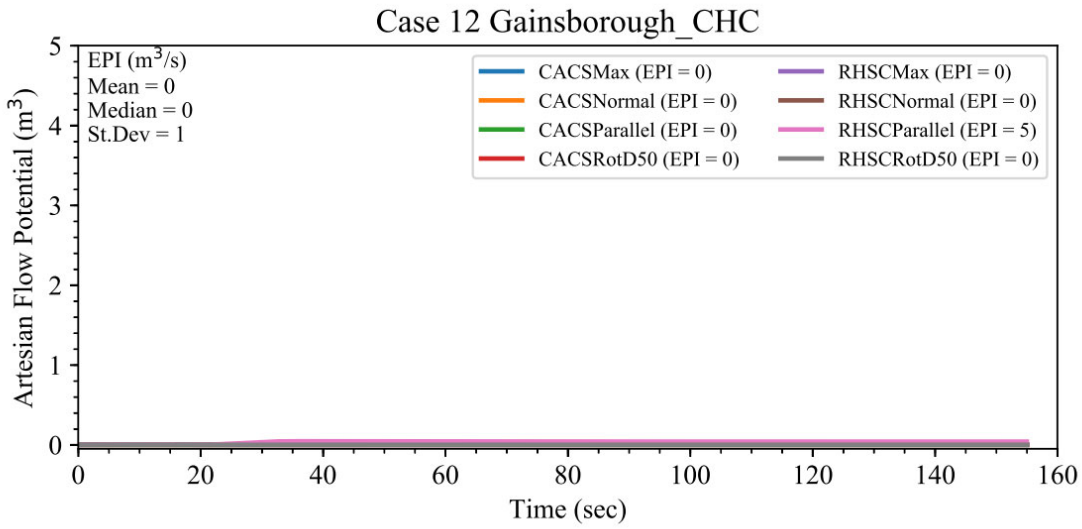


Figure B12.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #13: Hillsborough-DAR (M_w7.1, R_{rup} 18 km, Riccarton Gravel V_{S30} = 450 m/s)

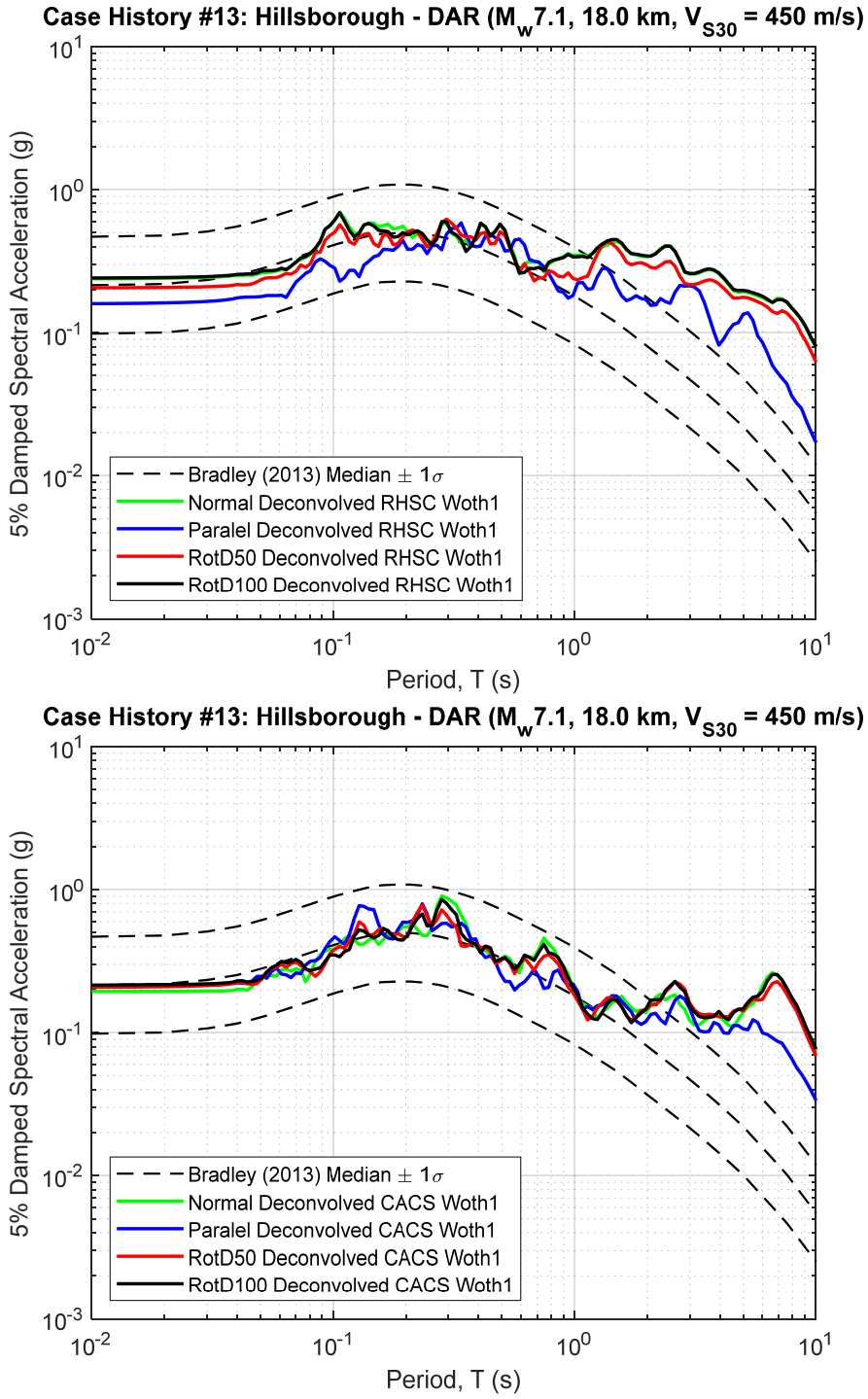
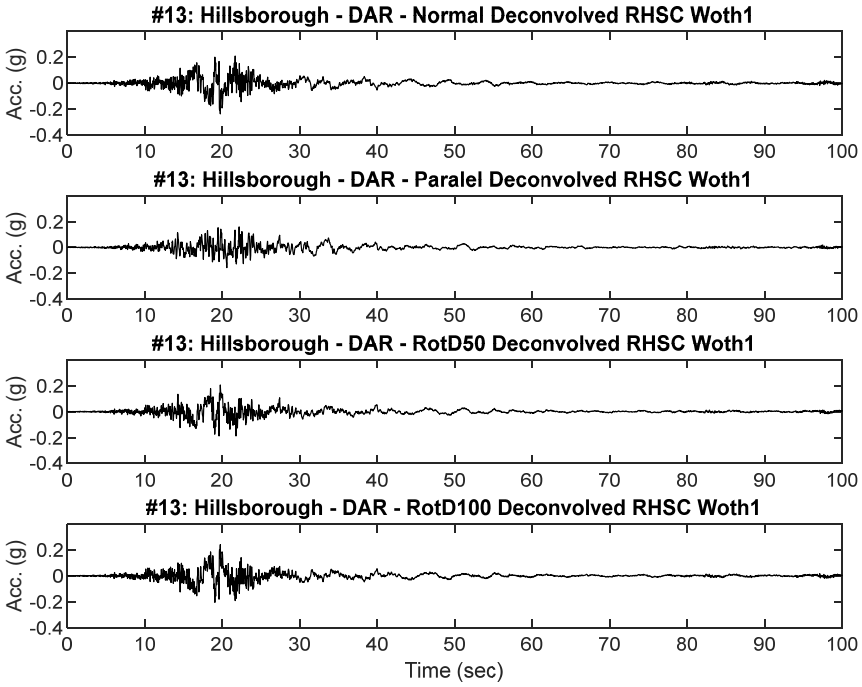


Figure B13.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



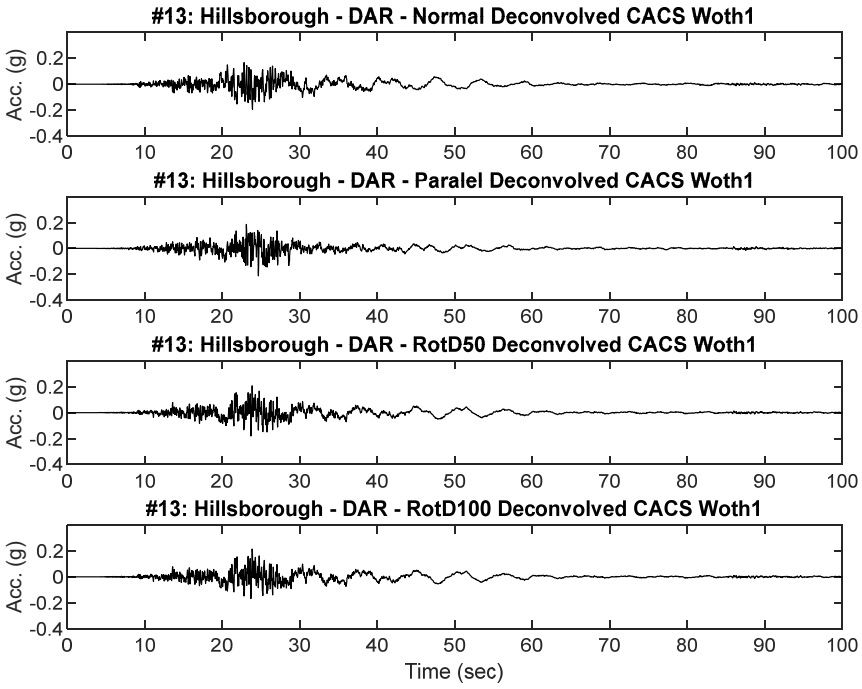


Figure B13.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

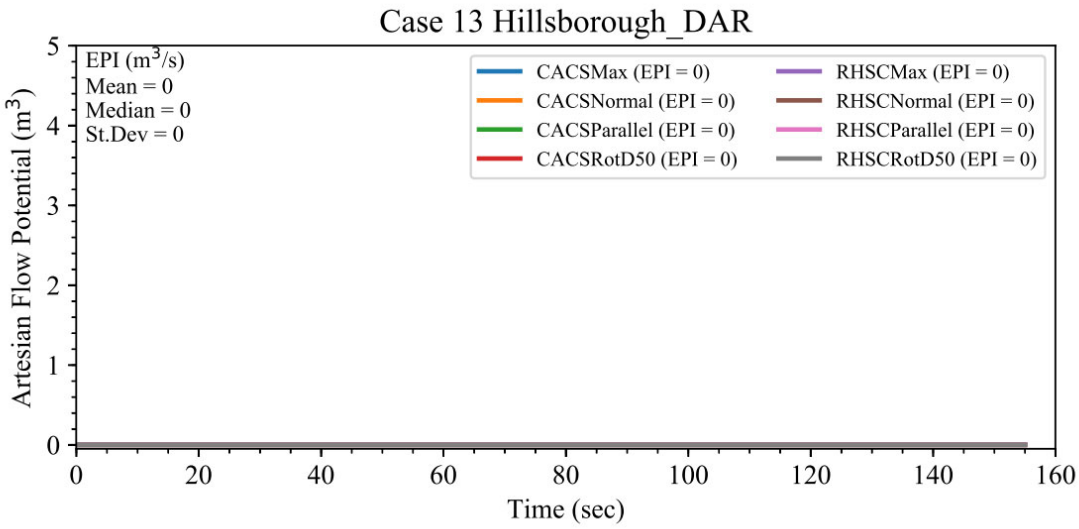


Figure B13.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #14: Hillsborough-JUN (M_w6.2, R_{rup} 18 km, Riccarton Gravel V_{S30} = 450 m/s)

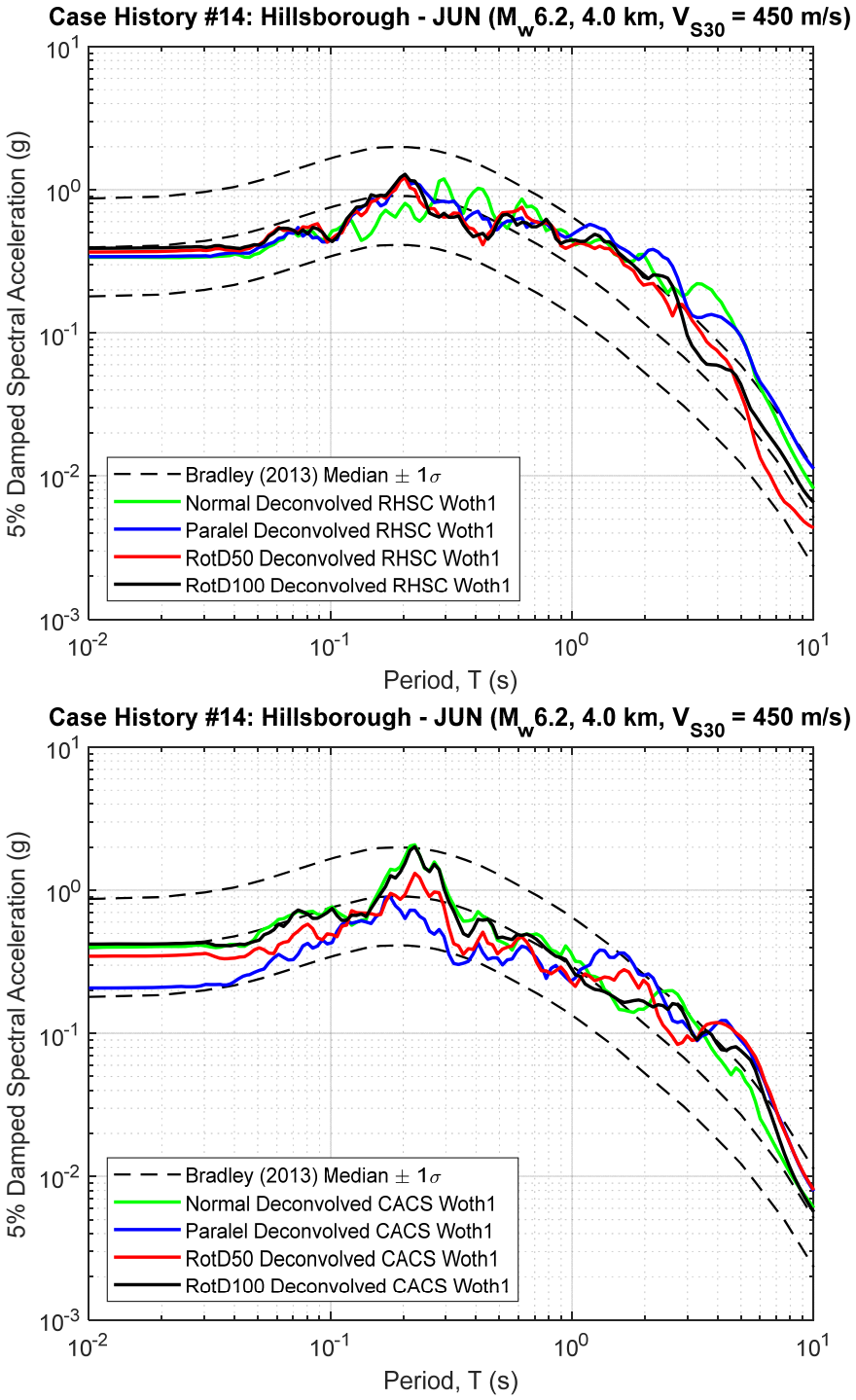
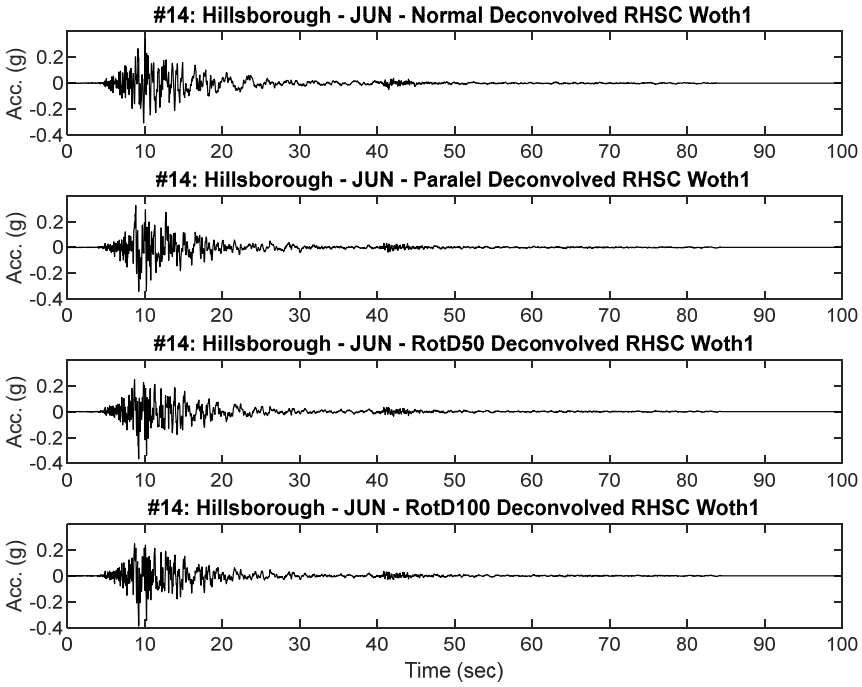


Figure B14.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



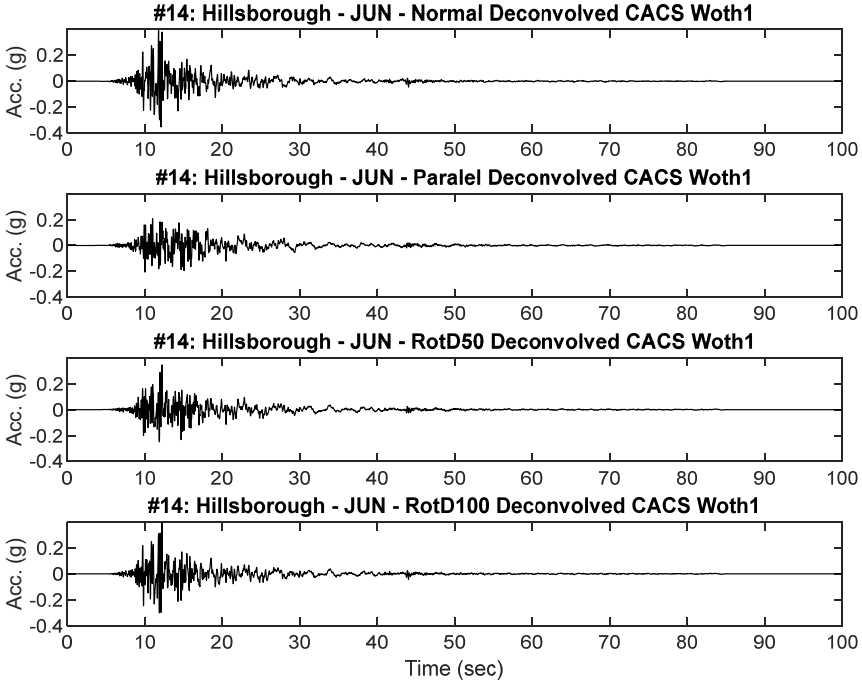


Figure B14.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

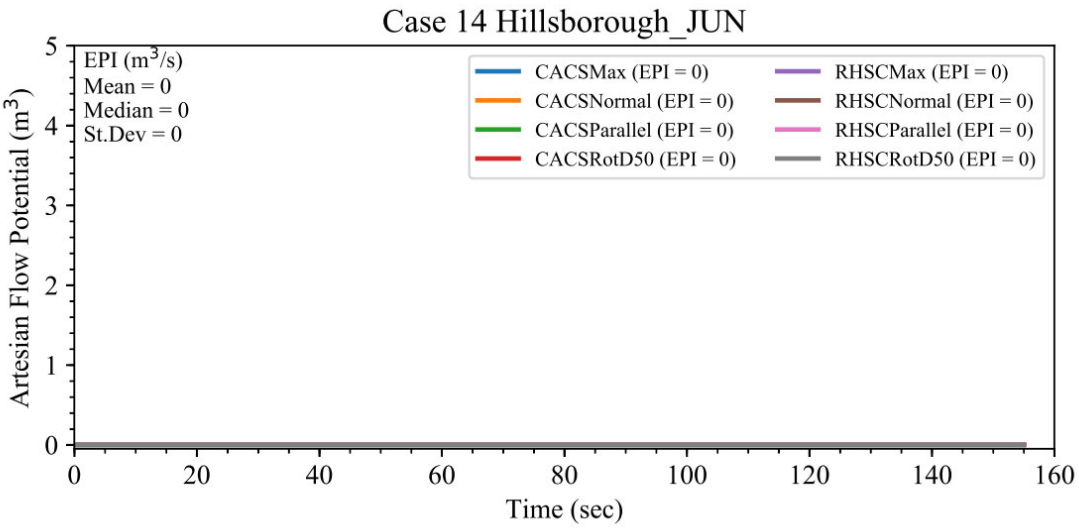


Figure B14.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #15: Hillsborough-CHC (M_w6.2, R_{rup} 18 km, Riccarton Gravel V_{S30} = 450 m/s)

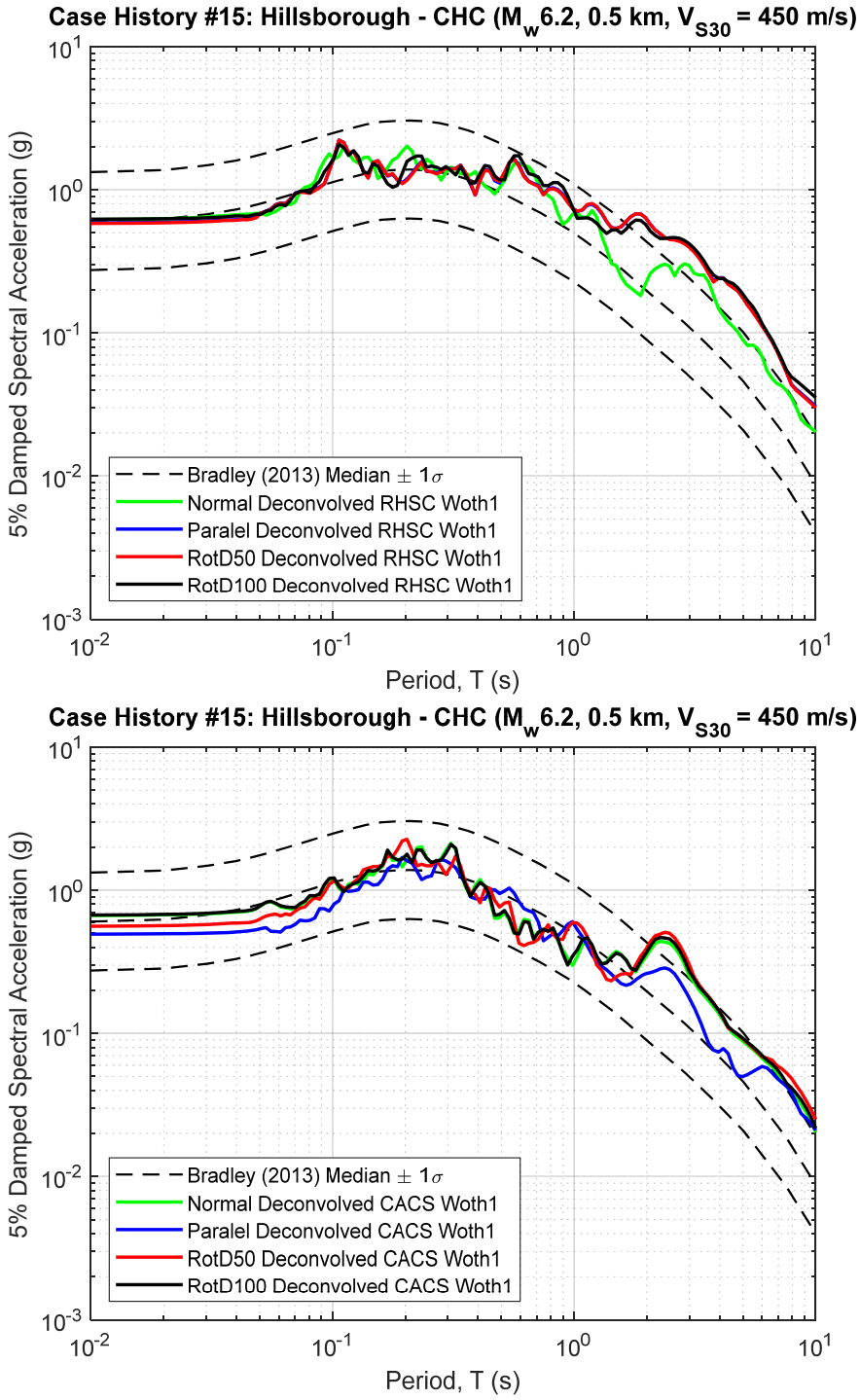
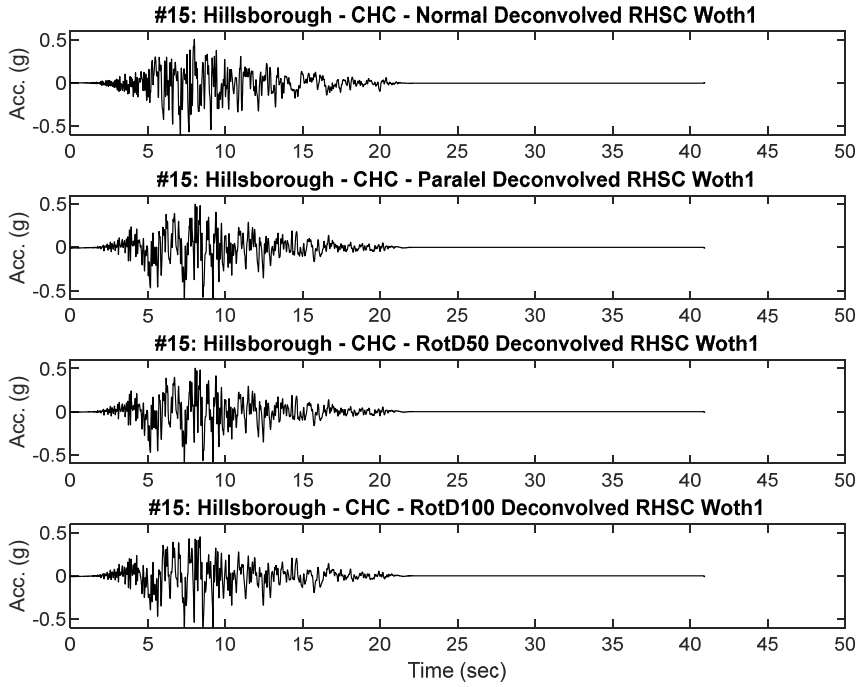


Figure B15.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



5

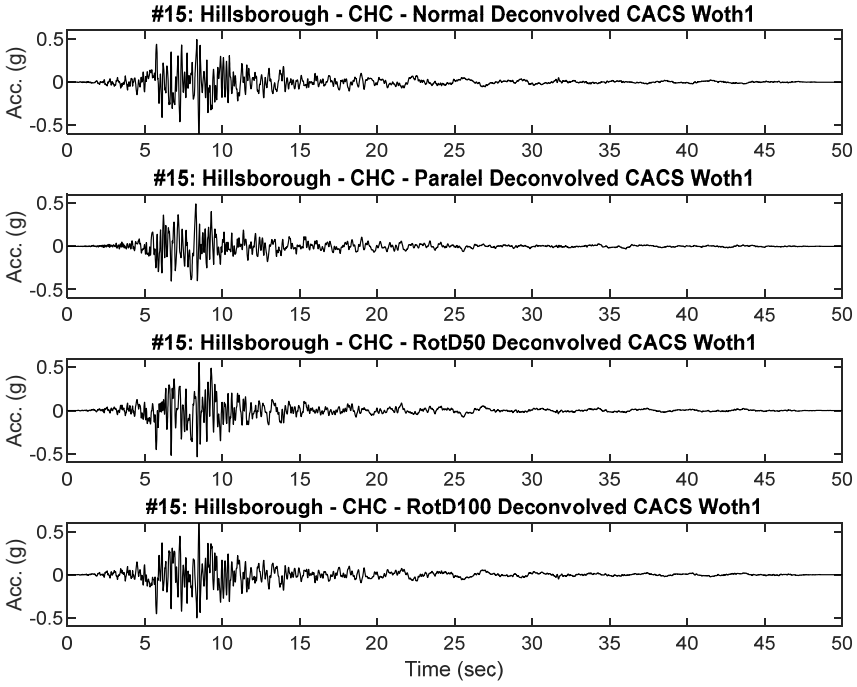


Figure B15.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

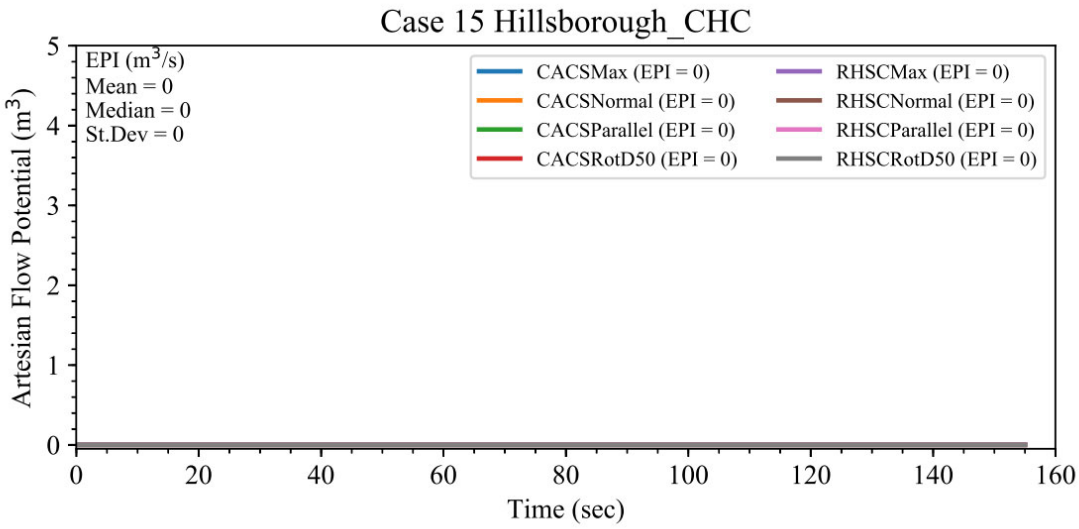


Figure B15.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #16: Paeroa-DAR (M_w7.1, R_{rup} 12.1 km, Riccarton Gravel V_{S30} = 400 m/s)

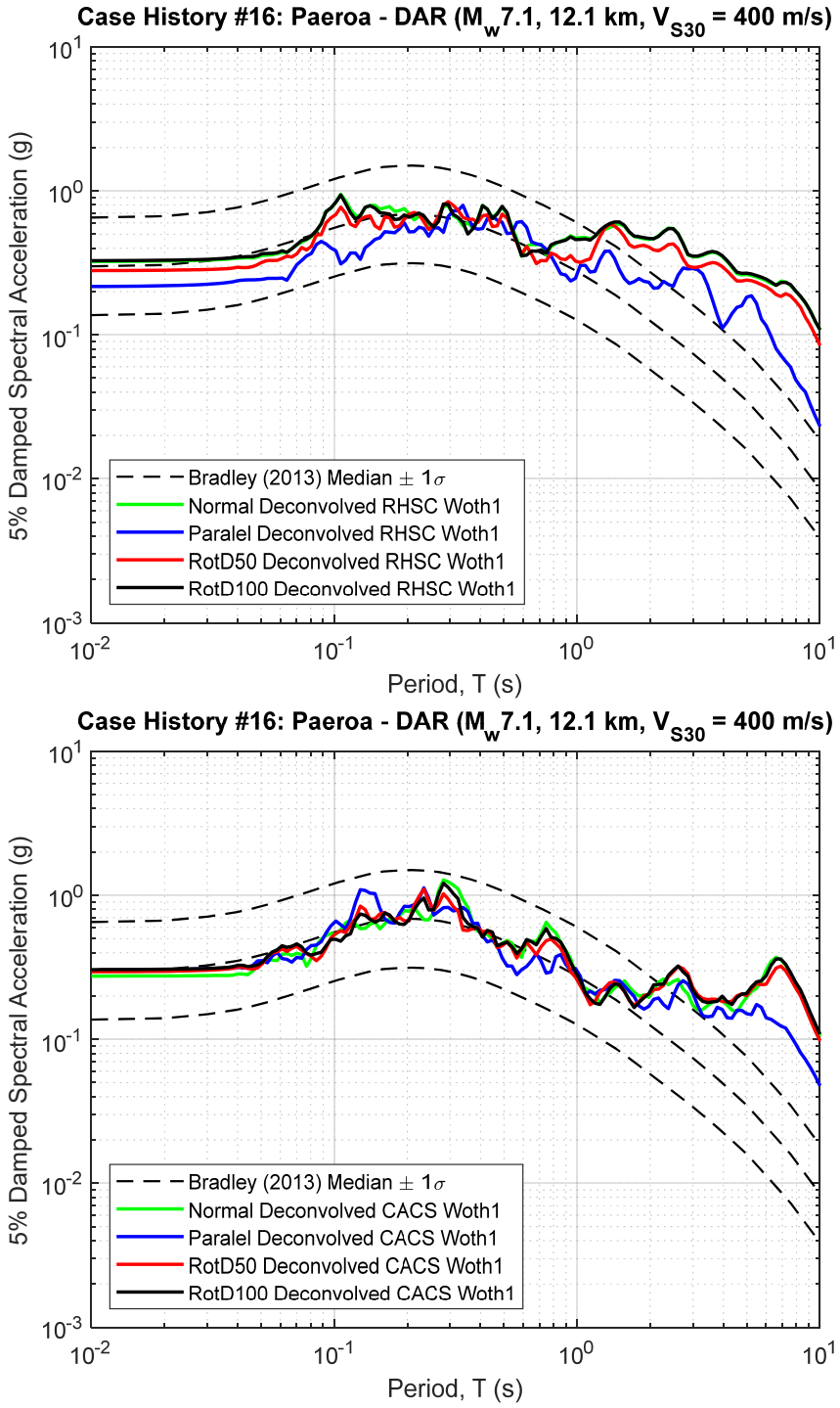
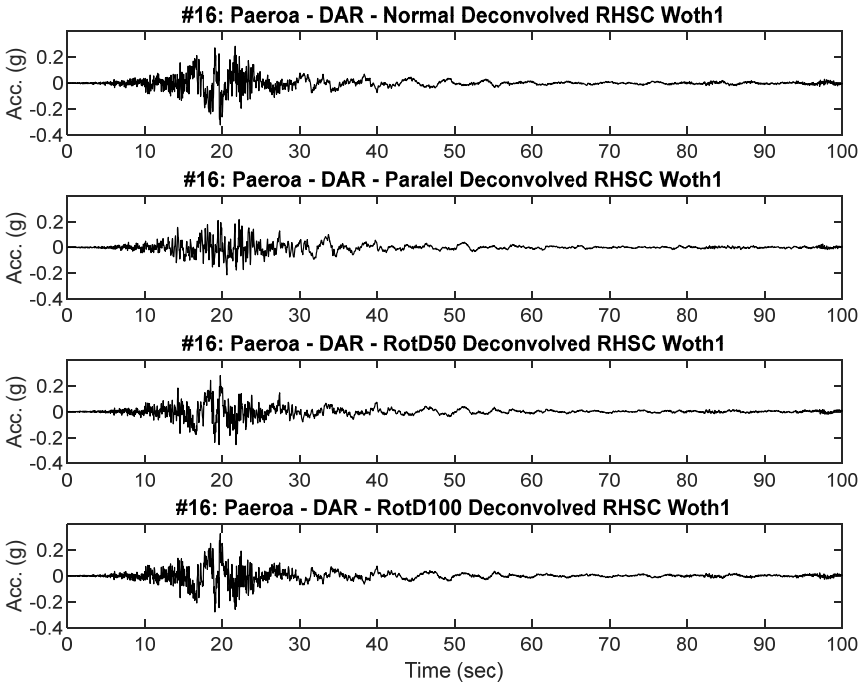


Figure B16.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



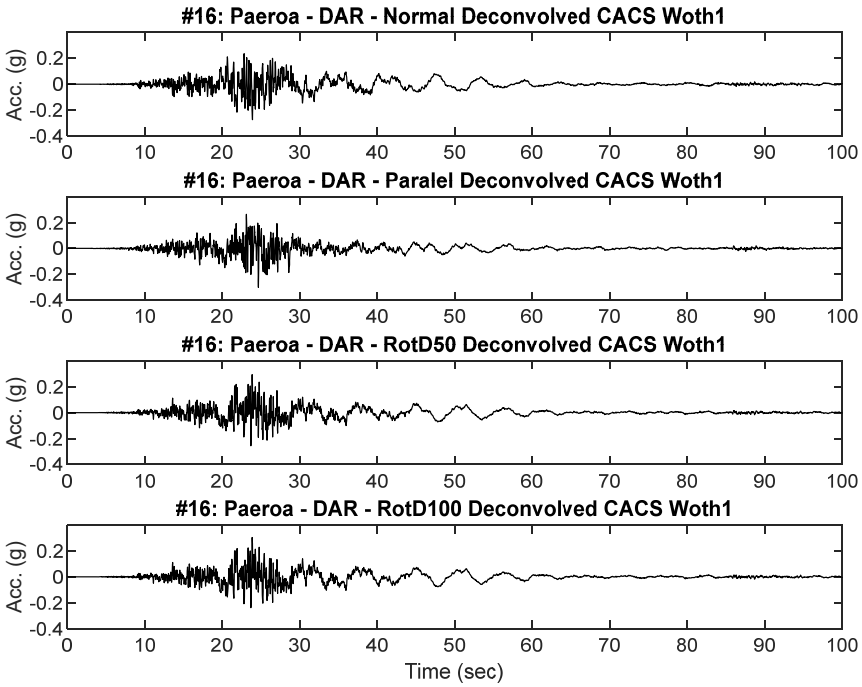


Figure B16.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

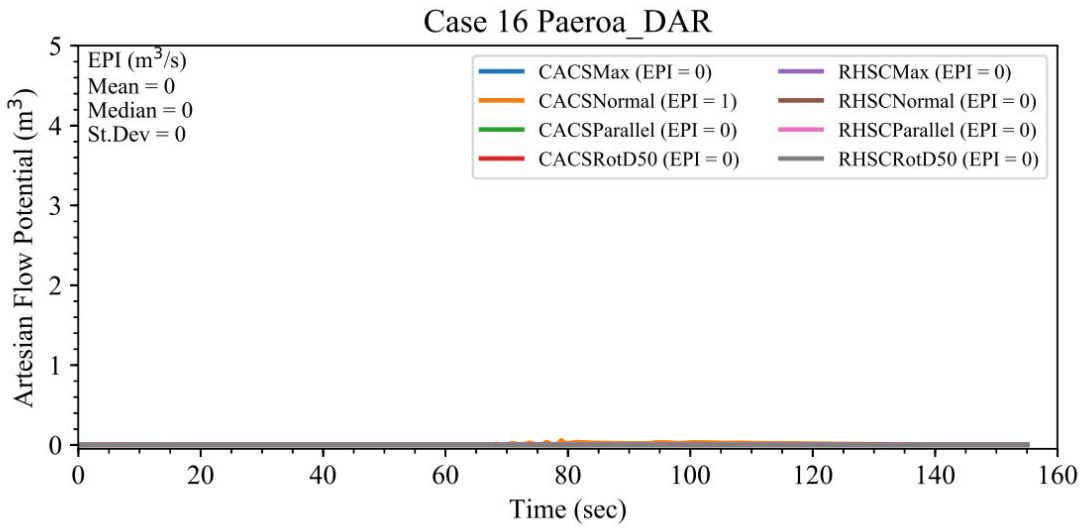


Figure B16.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #17: Paeroa-JUN (M_w6.2, R_{rup} 9.5 km, Riccarton Gravel V_{S30} = 400 m/s)

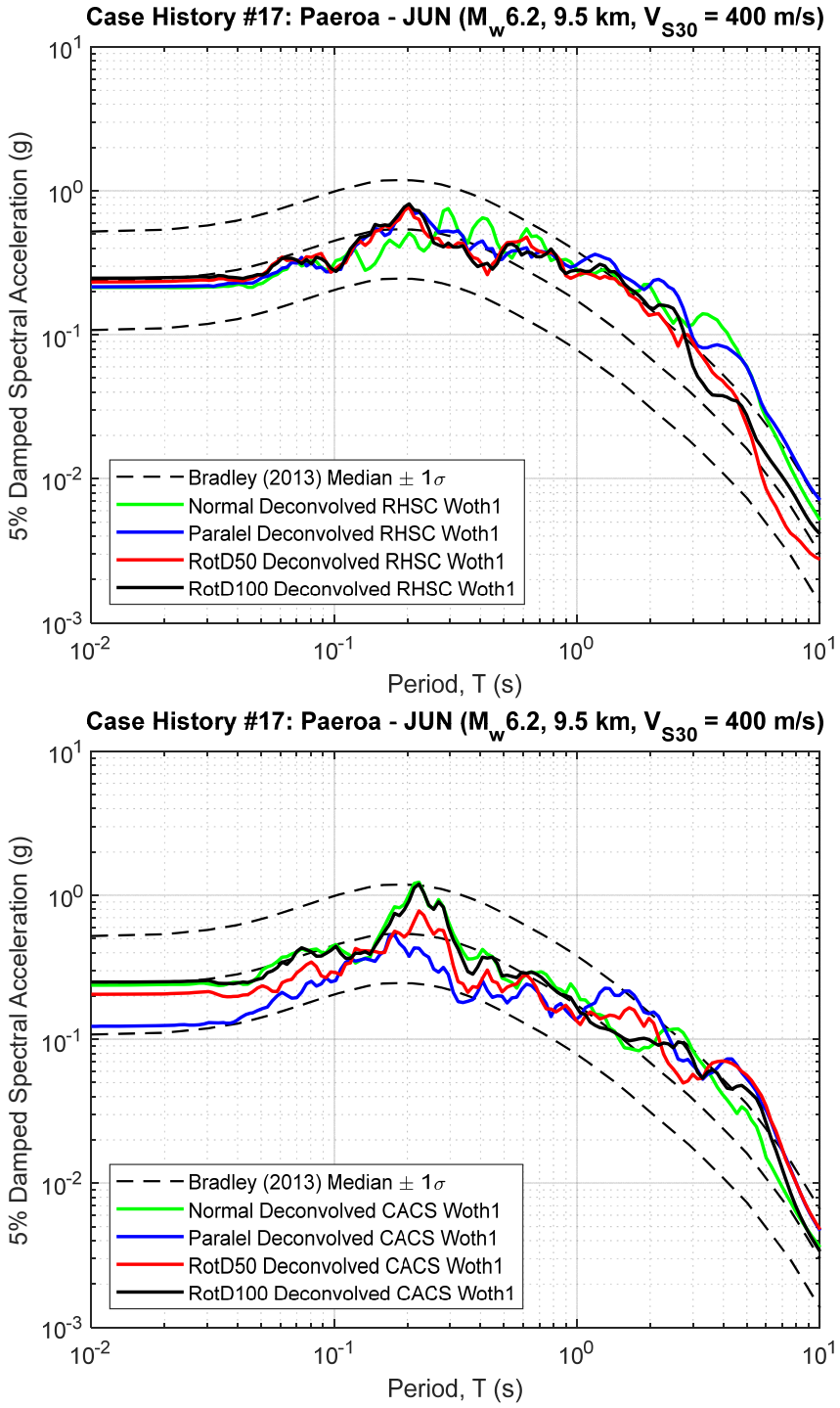


Figure B17.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

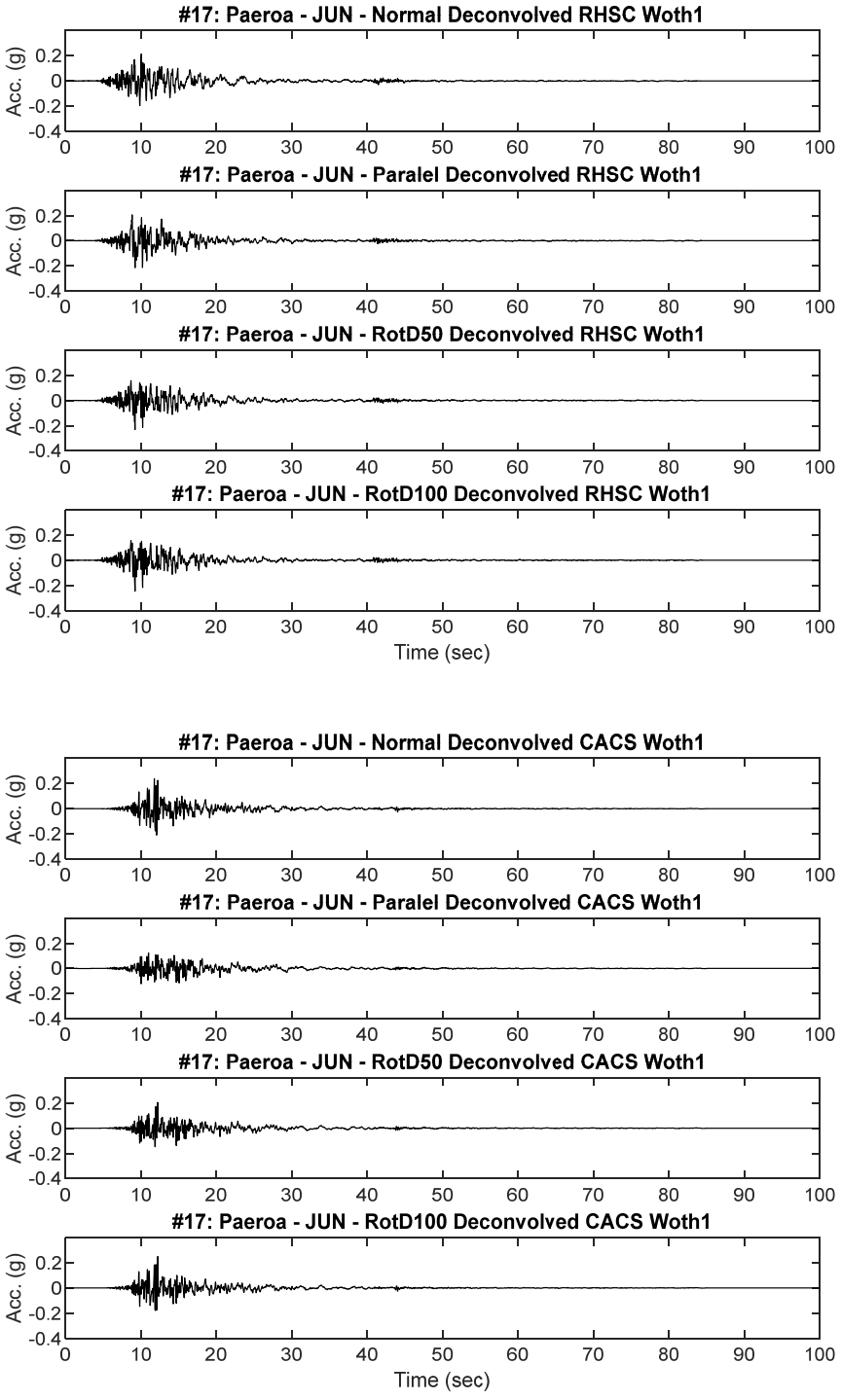


Figure B17.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

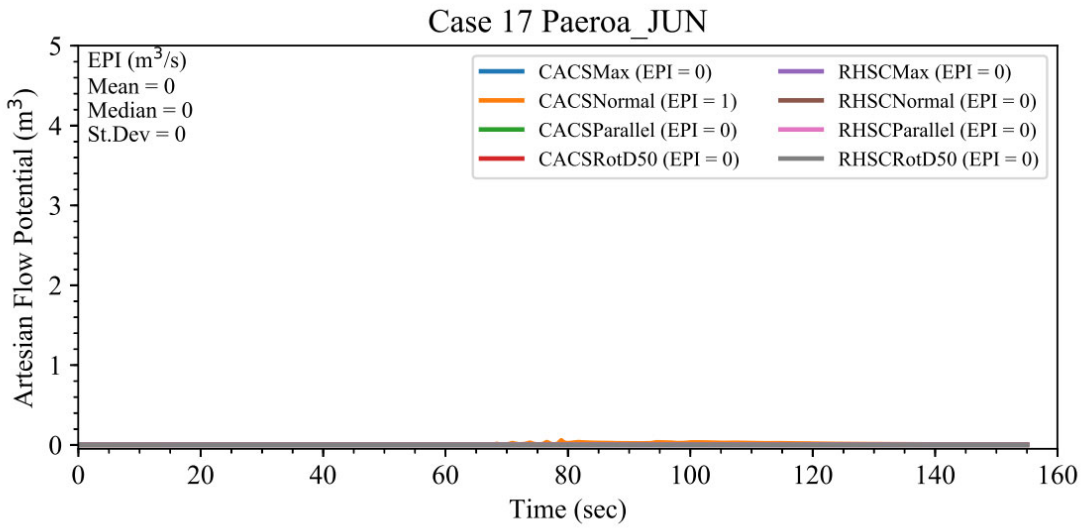


Figure B17.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #18: Barrington-DAR (M_w6.2, R_{rup} 13.5 km, Riccarton Gravel V_{S30} = 400 m/s)

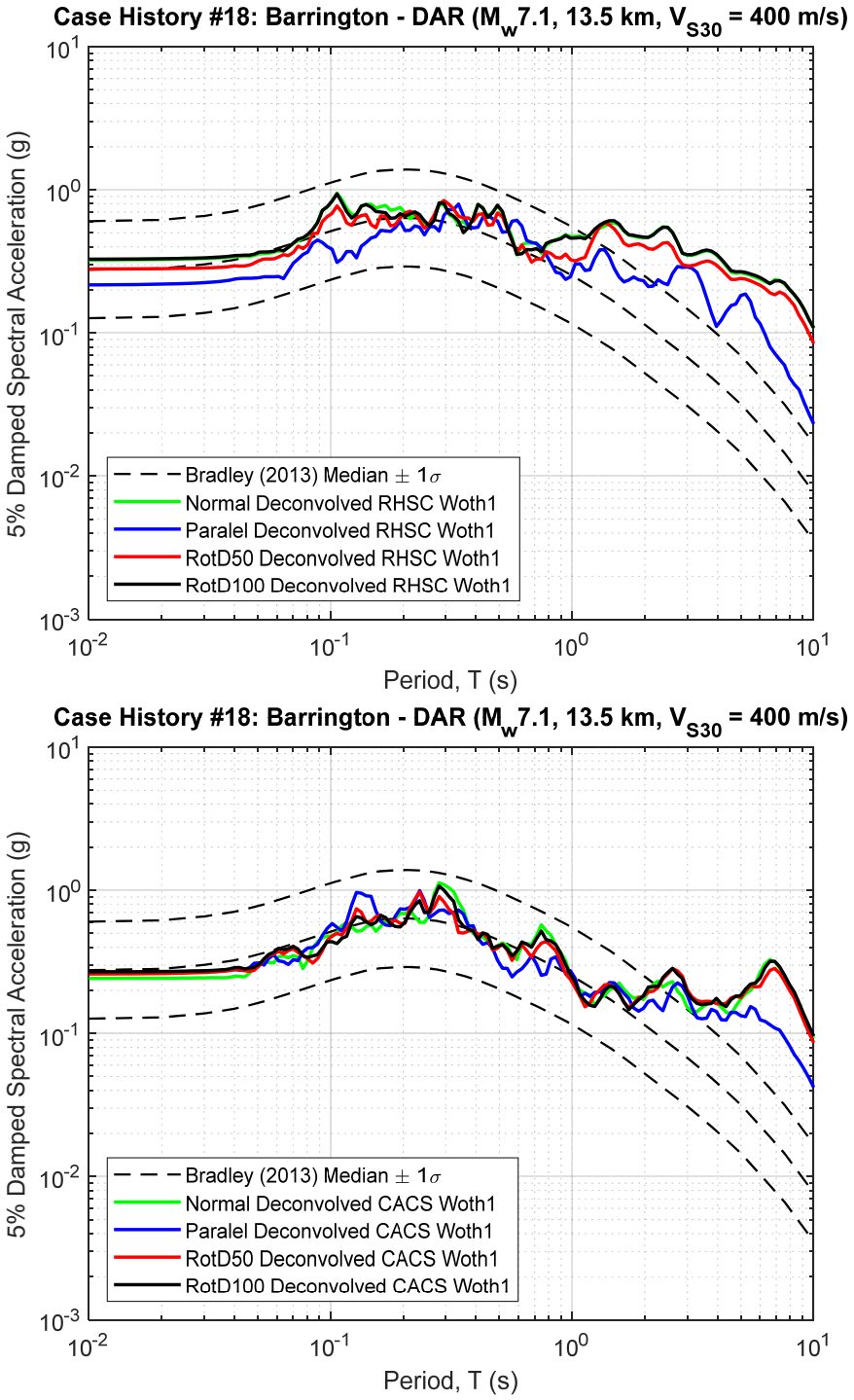


Figure B18.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

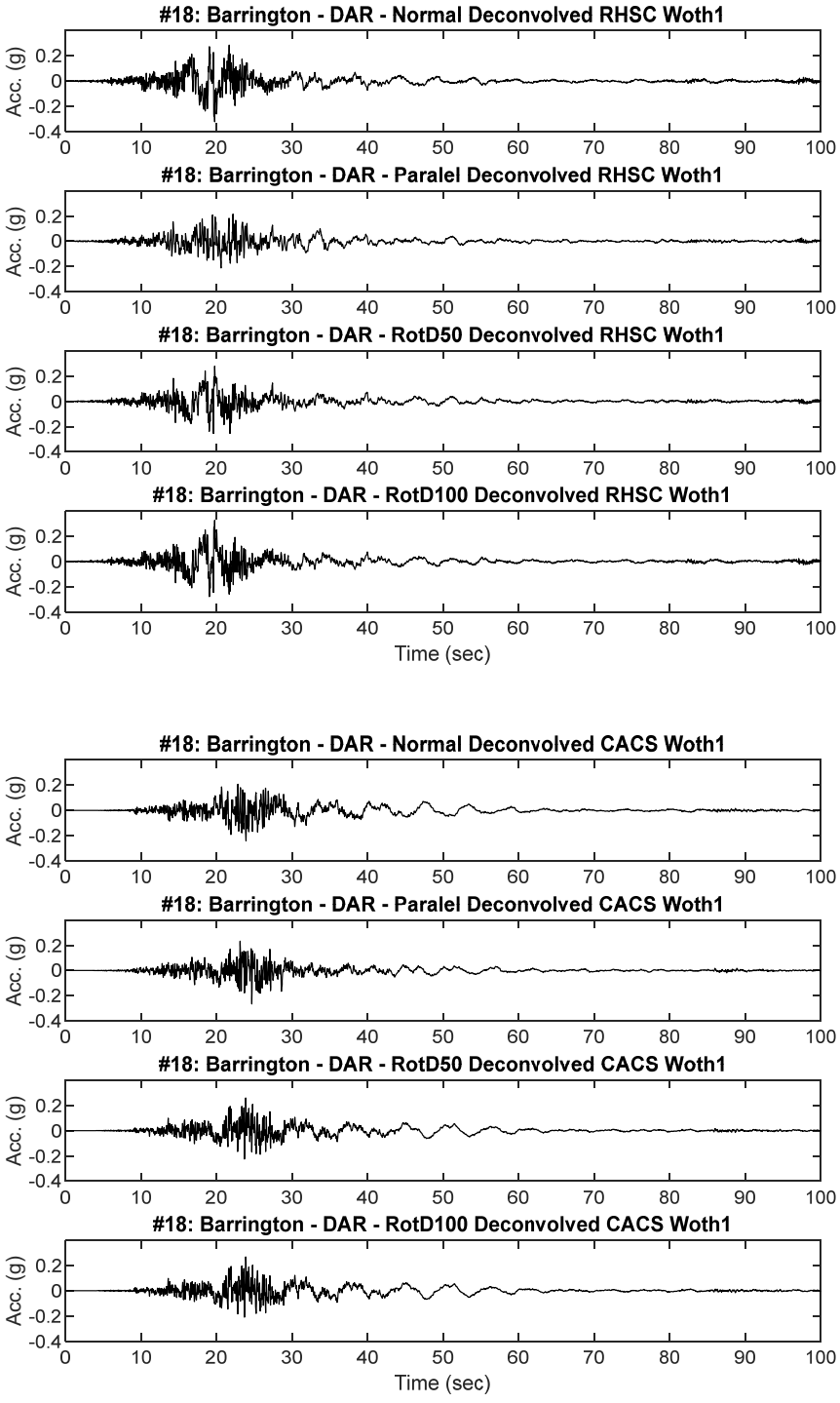


Figure B18.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

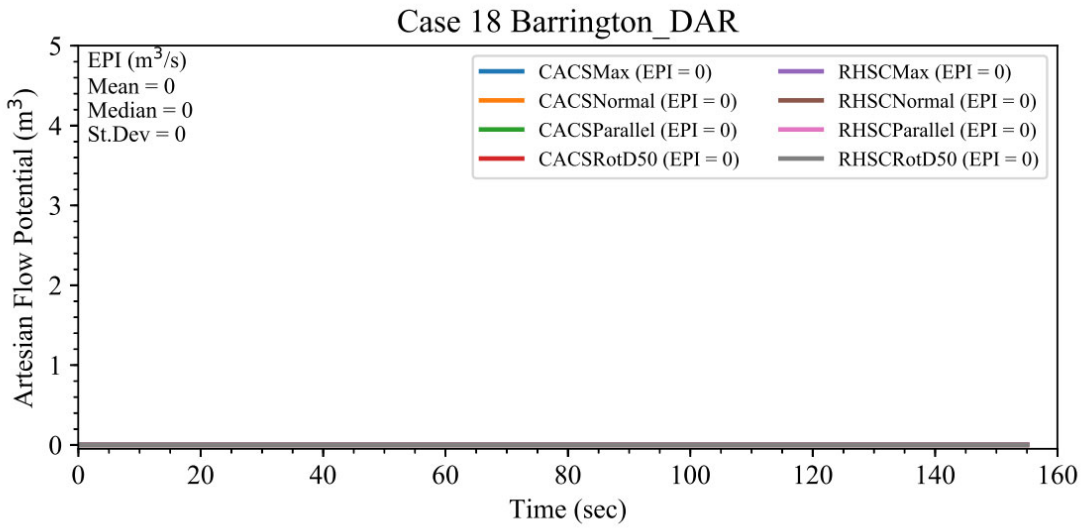


Figure B18.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #19: Barrington-DAR (M_w6.2, R_{rup} 7.4 km, Riccarton Gravel V_{S30} = 400 m/s)

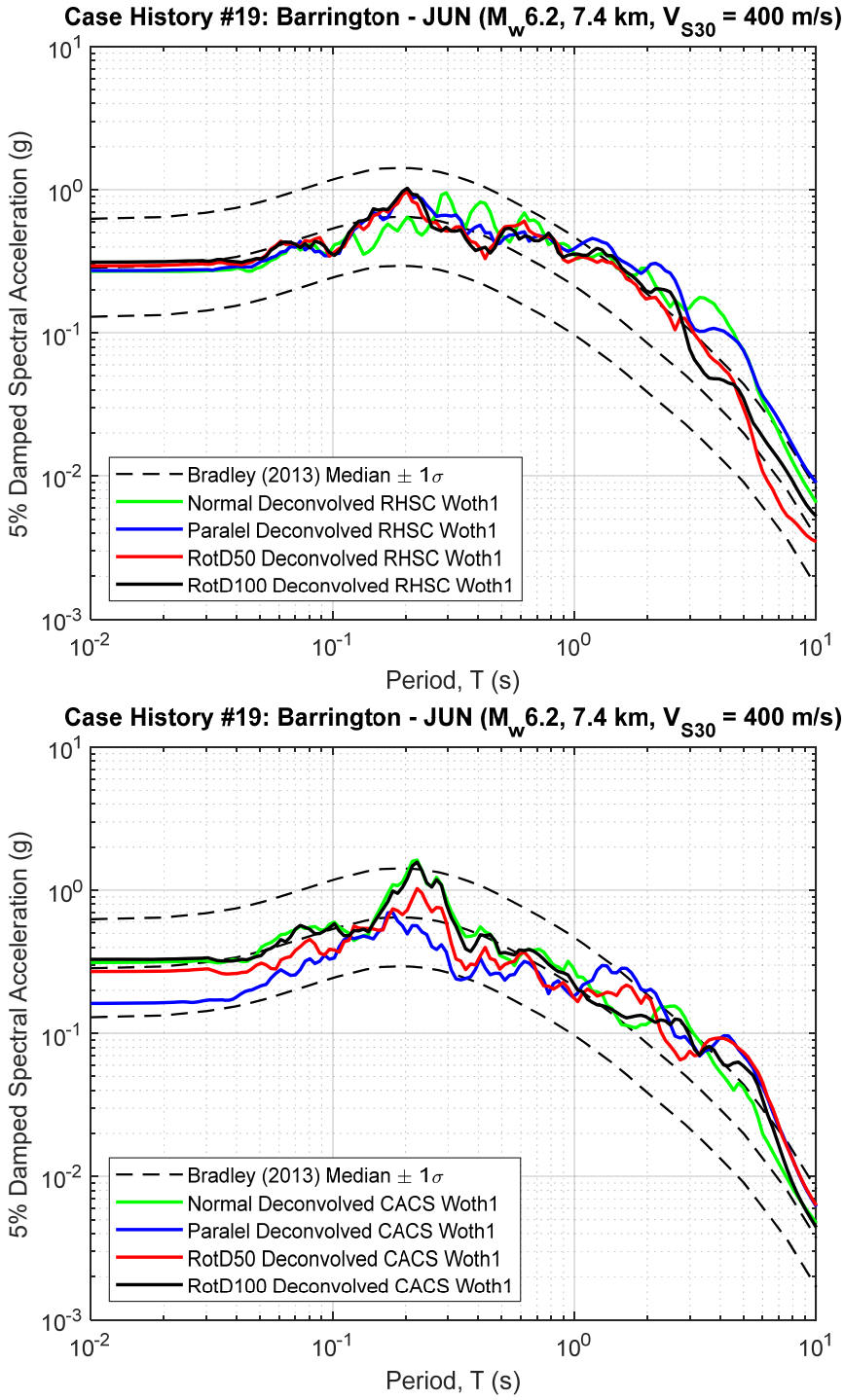
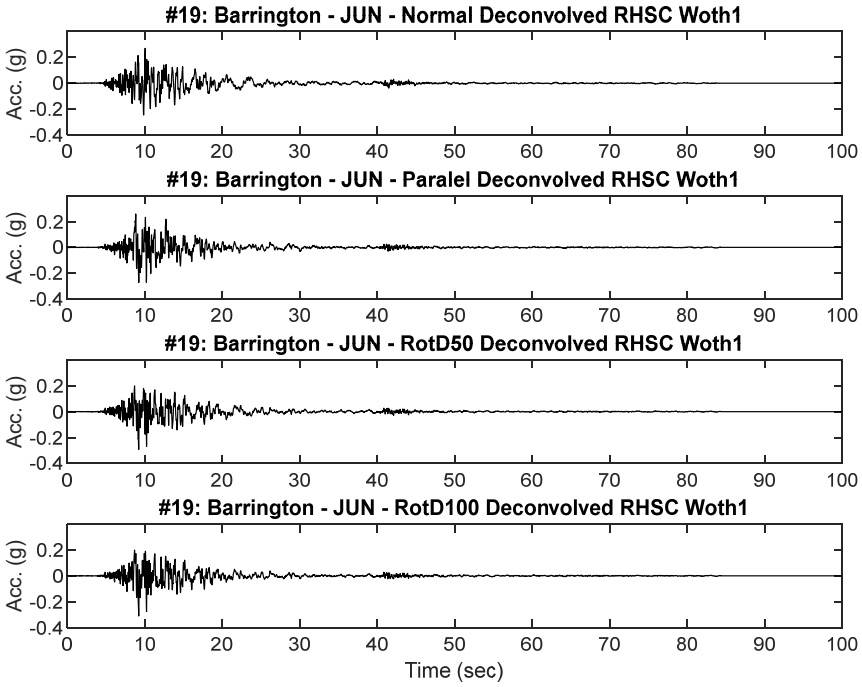


Figure B18.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



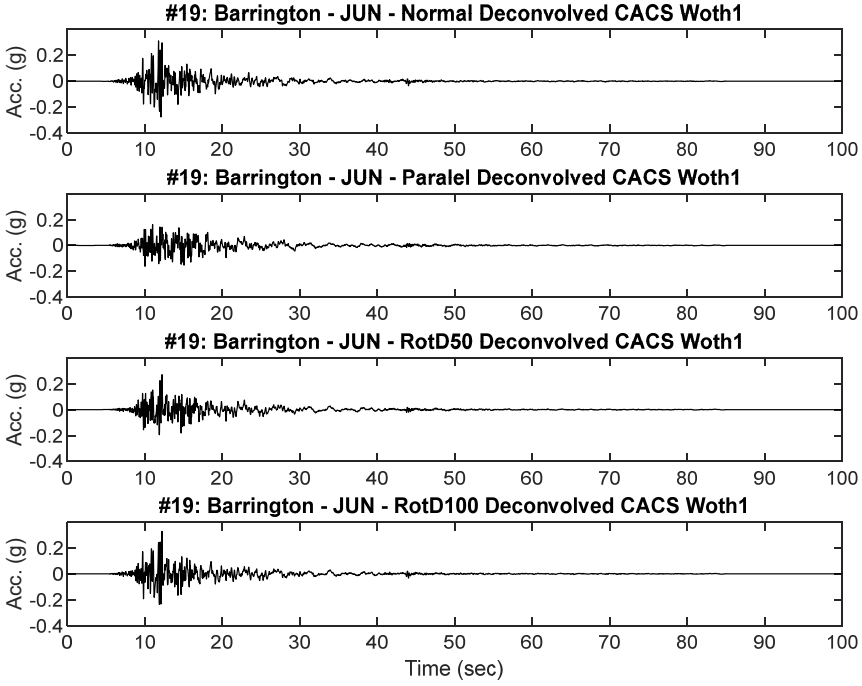


Figure B19.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

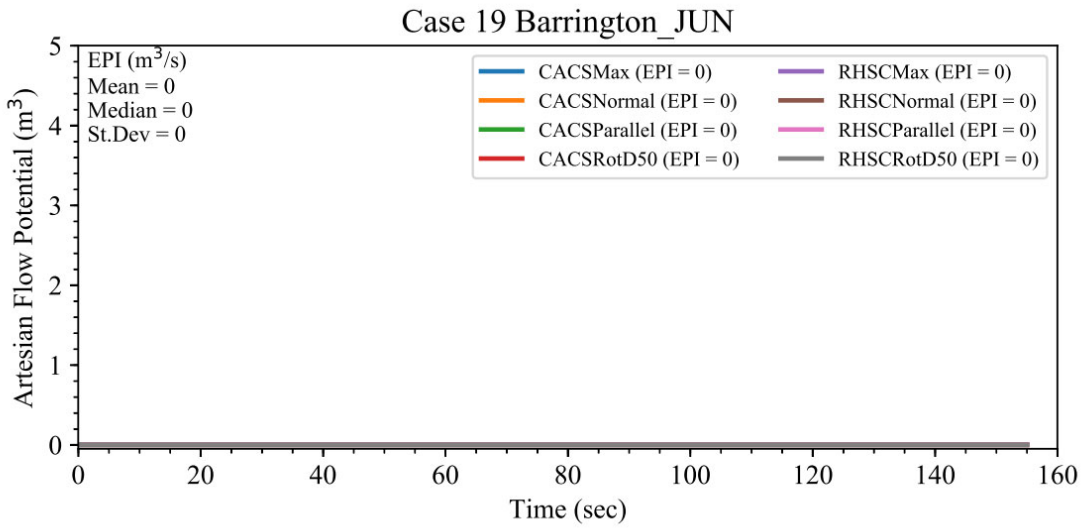


Figure B19.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #20: Shirley-DAR (M_w7.1, R_{rup} 18.3 km, Riccarton Gravel V_{S30} = 450 m/s)

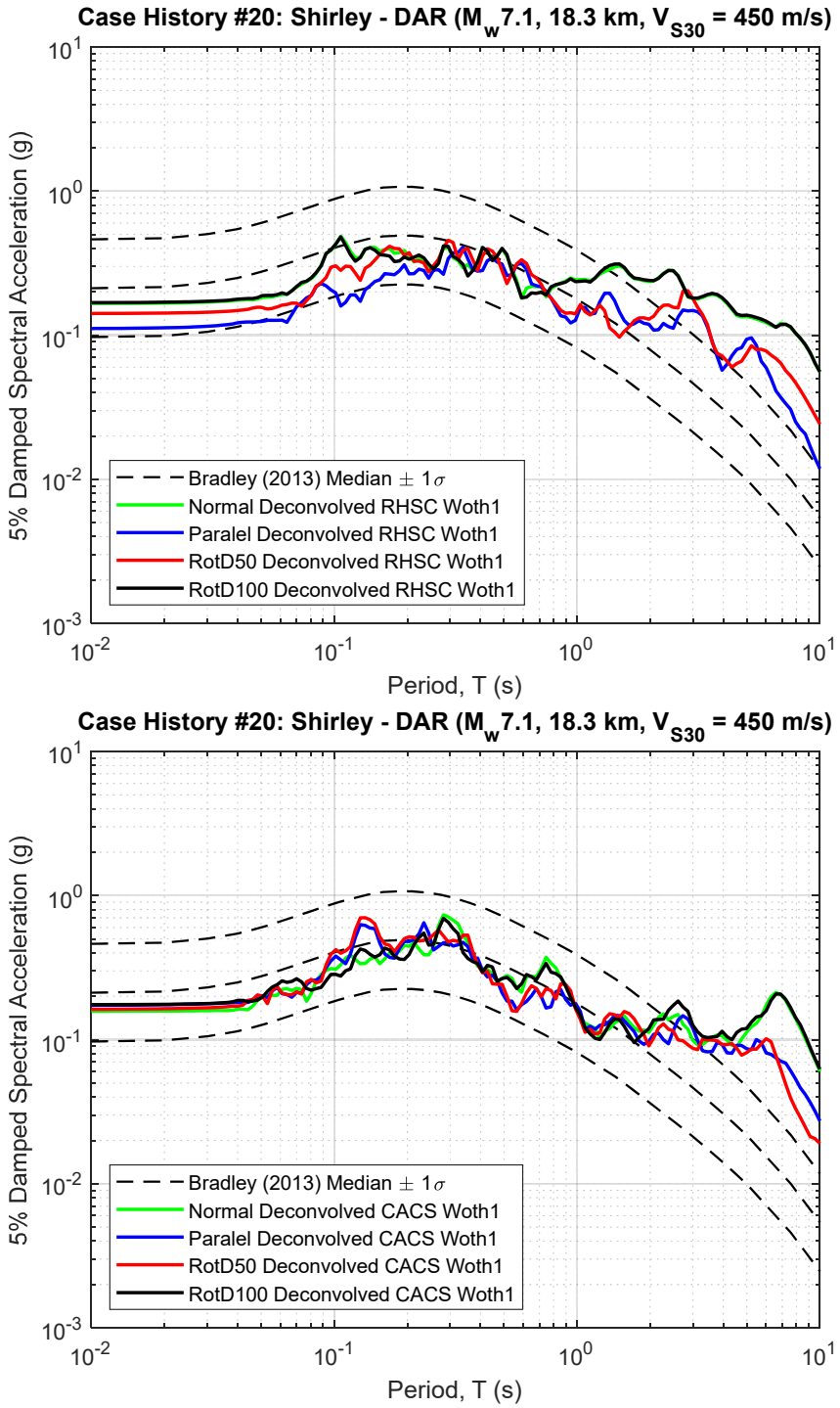


Figure B20.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

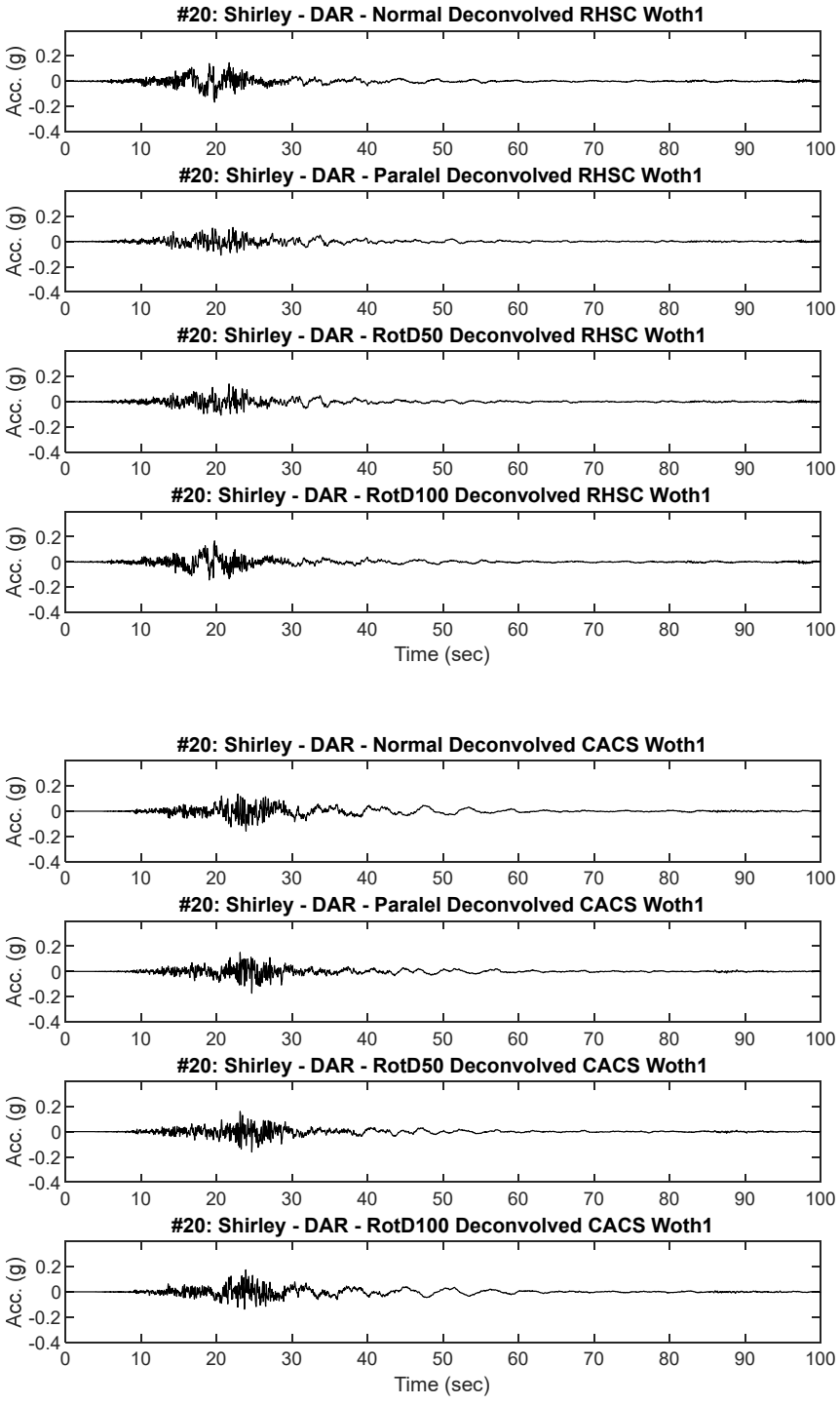


Figure B20.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

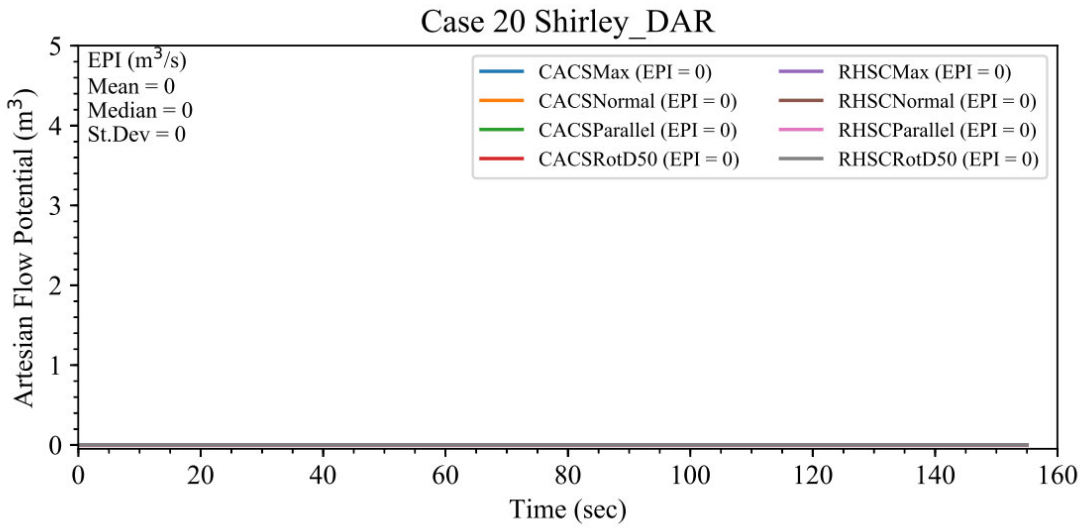


Figure B20.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #21: Palinurus1-CHC (M_w6.2, R_{rup} 0.5 km, Riccarton Gravel V_{S30} = 450 m/s)

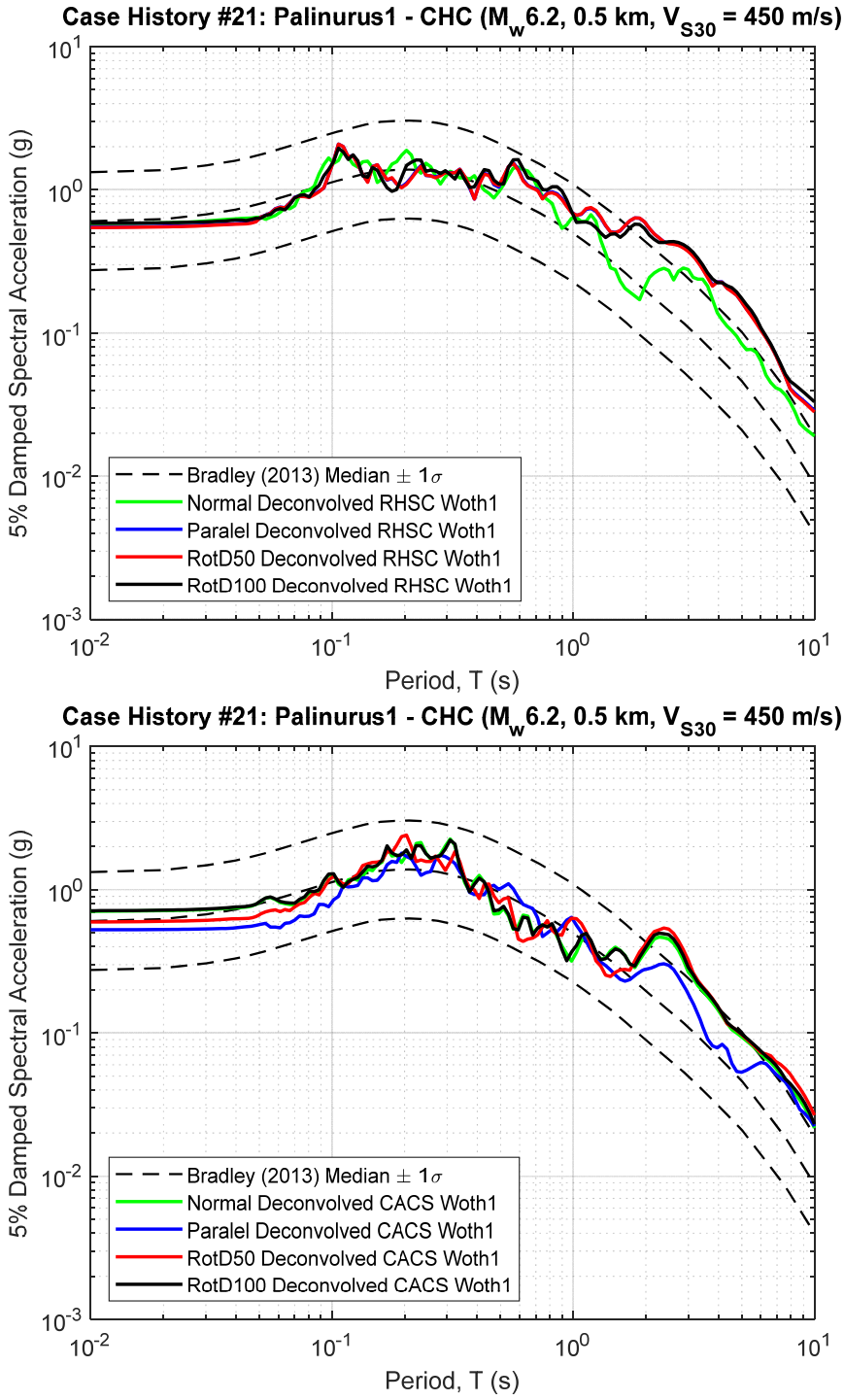


Figure B21.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)

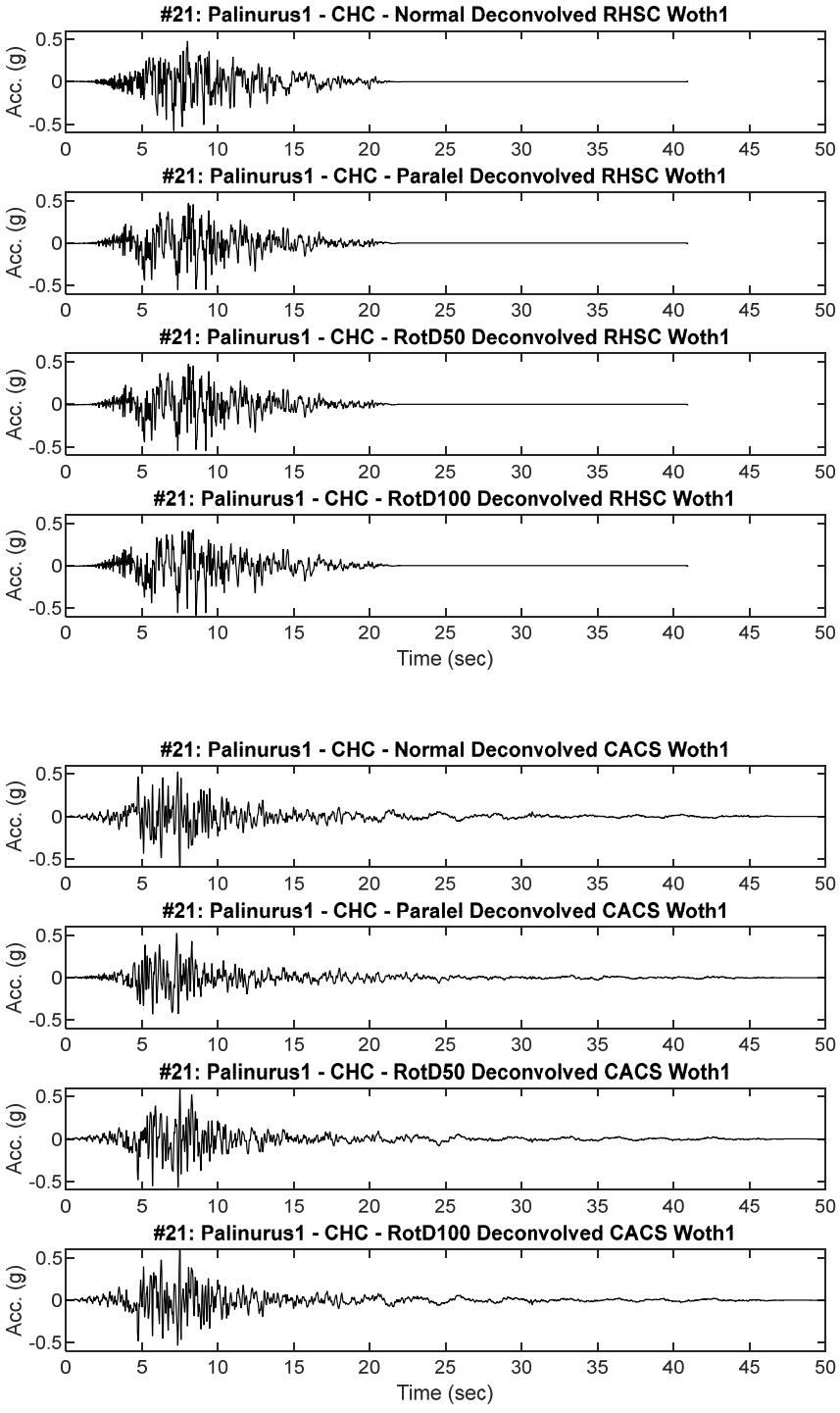


Figure B21.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

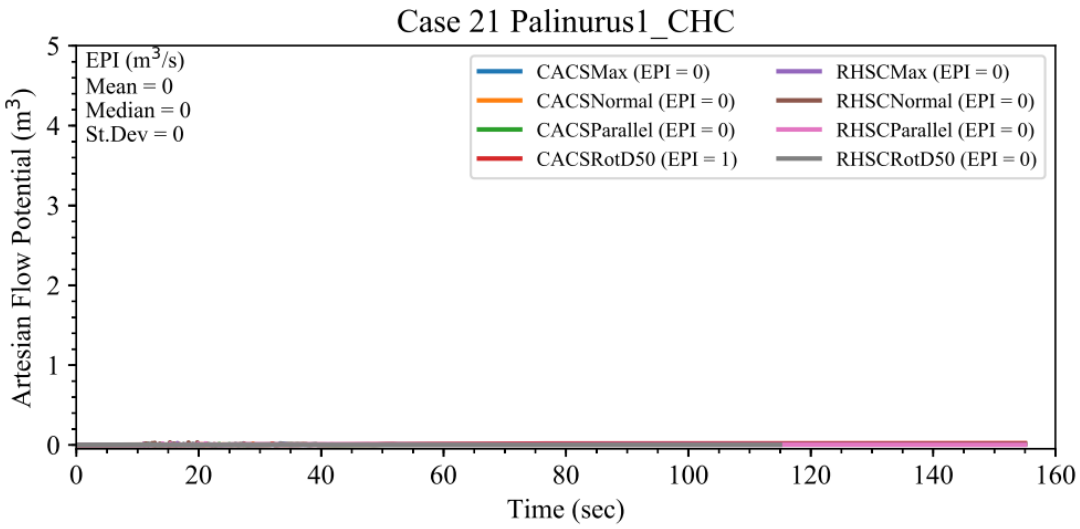


Figure B21.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #22: Paeroa-JUN (M_w6.2, R_{rup} 1.5 km, Riccarton Gravel V_{S30} = 450 m/s)

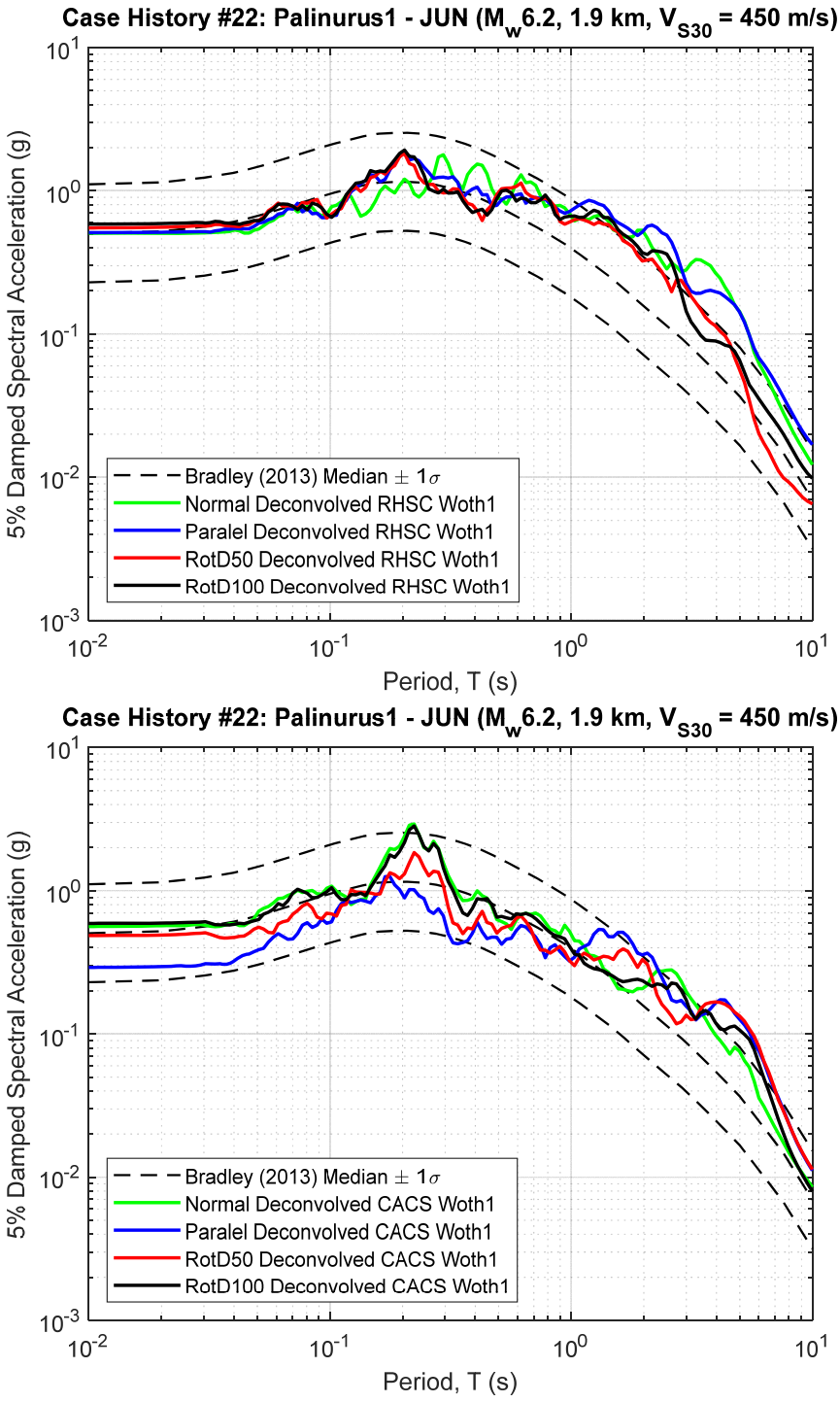


Figure B22.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

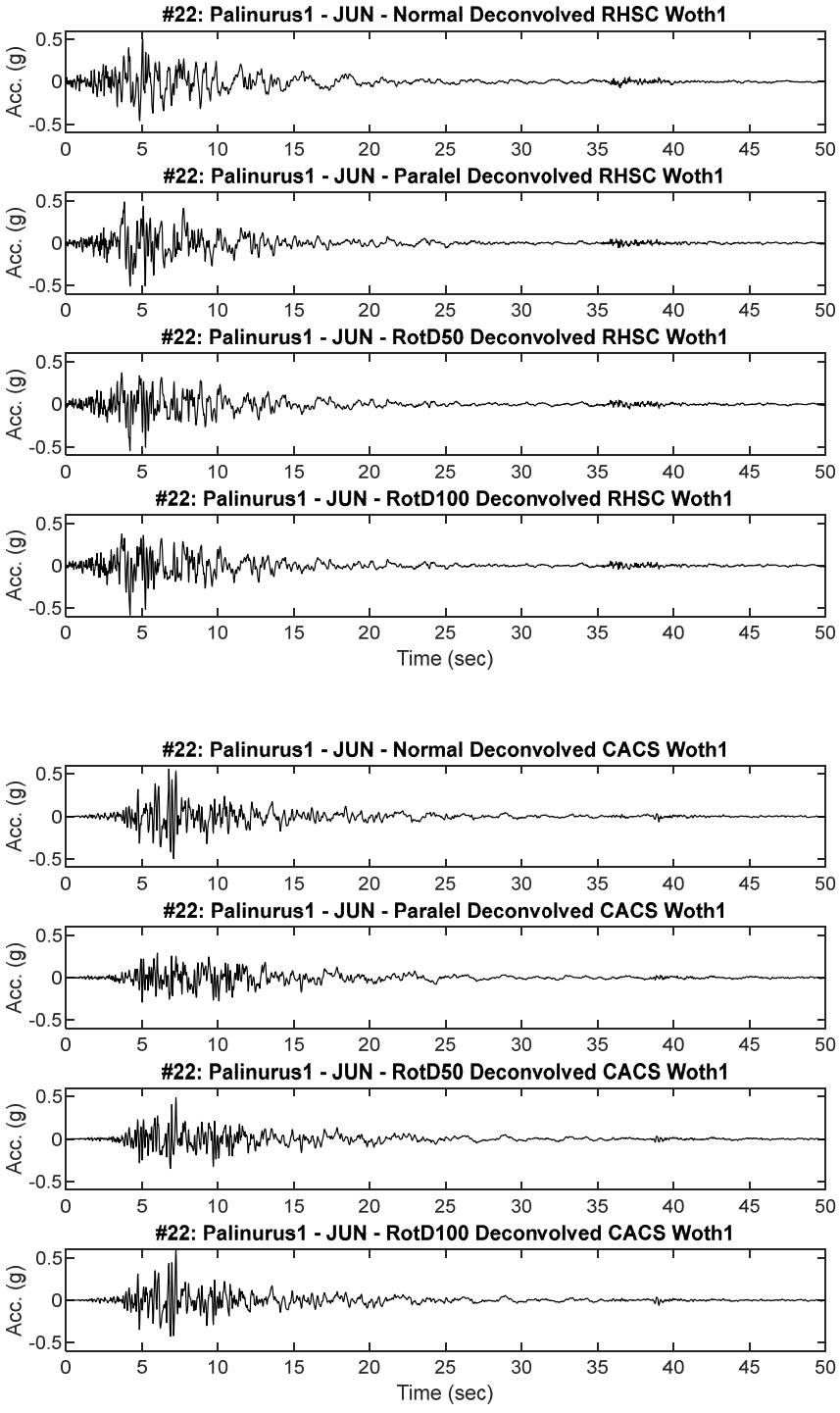


Figure B22.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

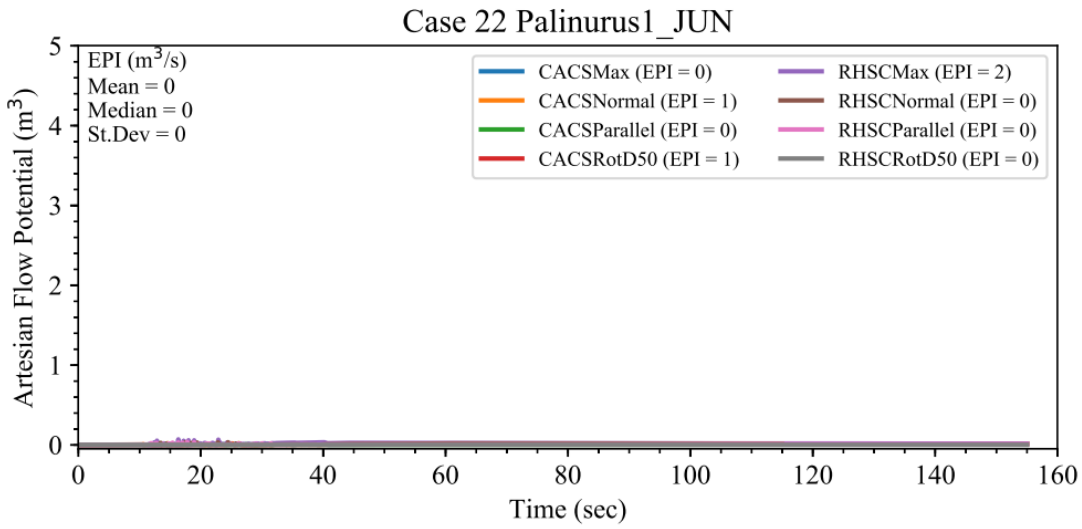


Figure B22.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #23: CMHS-CHC (M_w6.2, R_{rup} 1.4 km, Riccarton Gravel V_{S30} = 400 m/s)

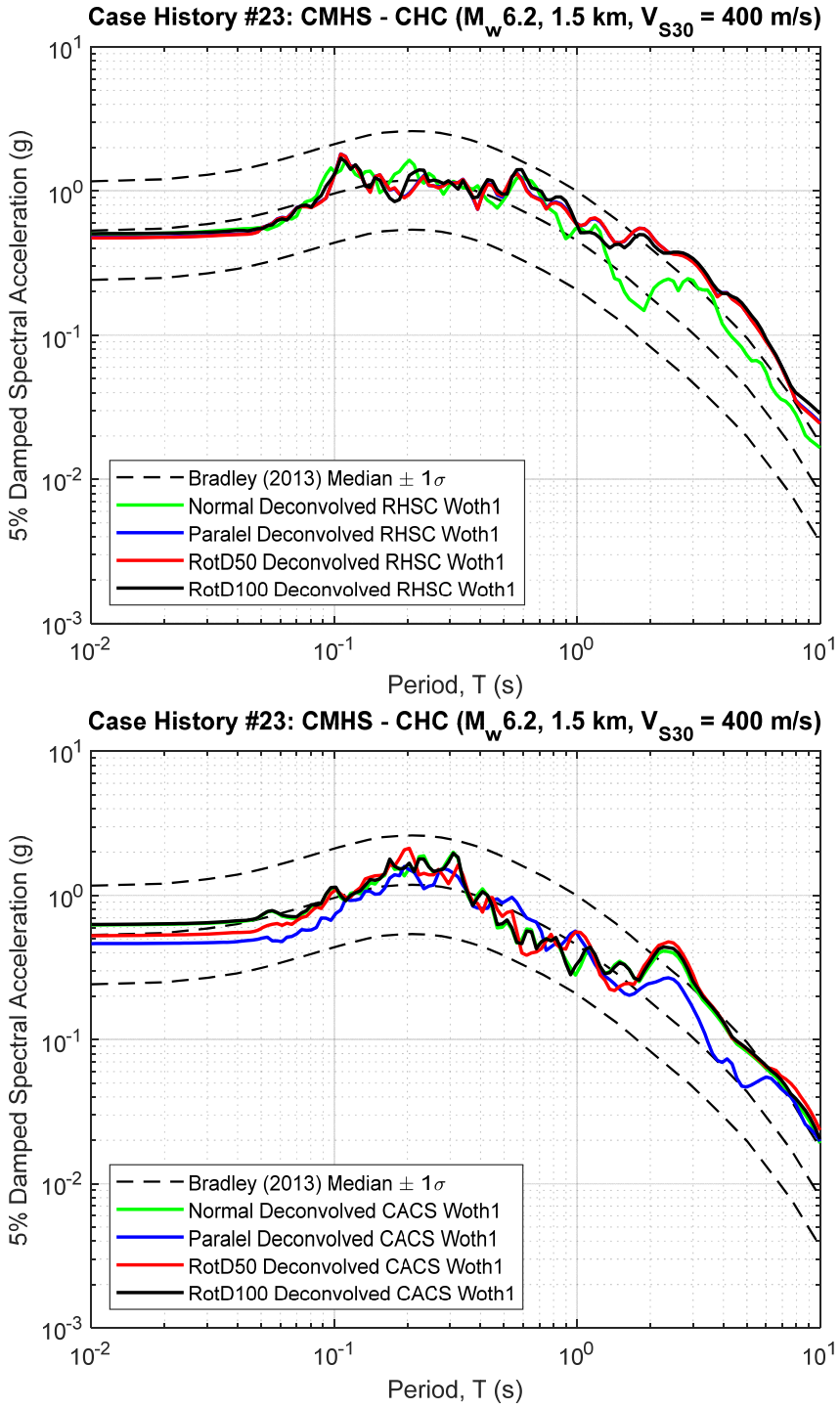


Figure B23.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)

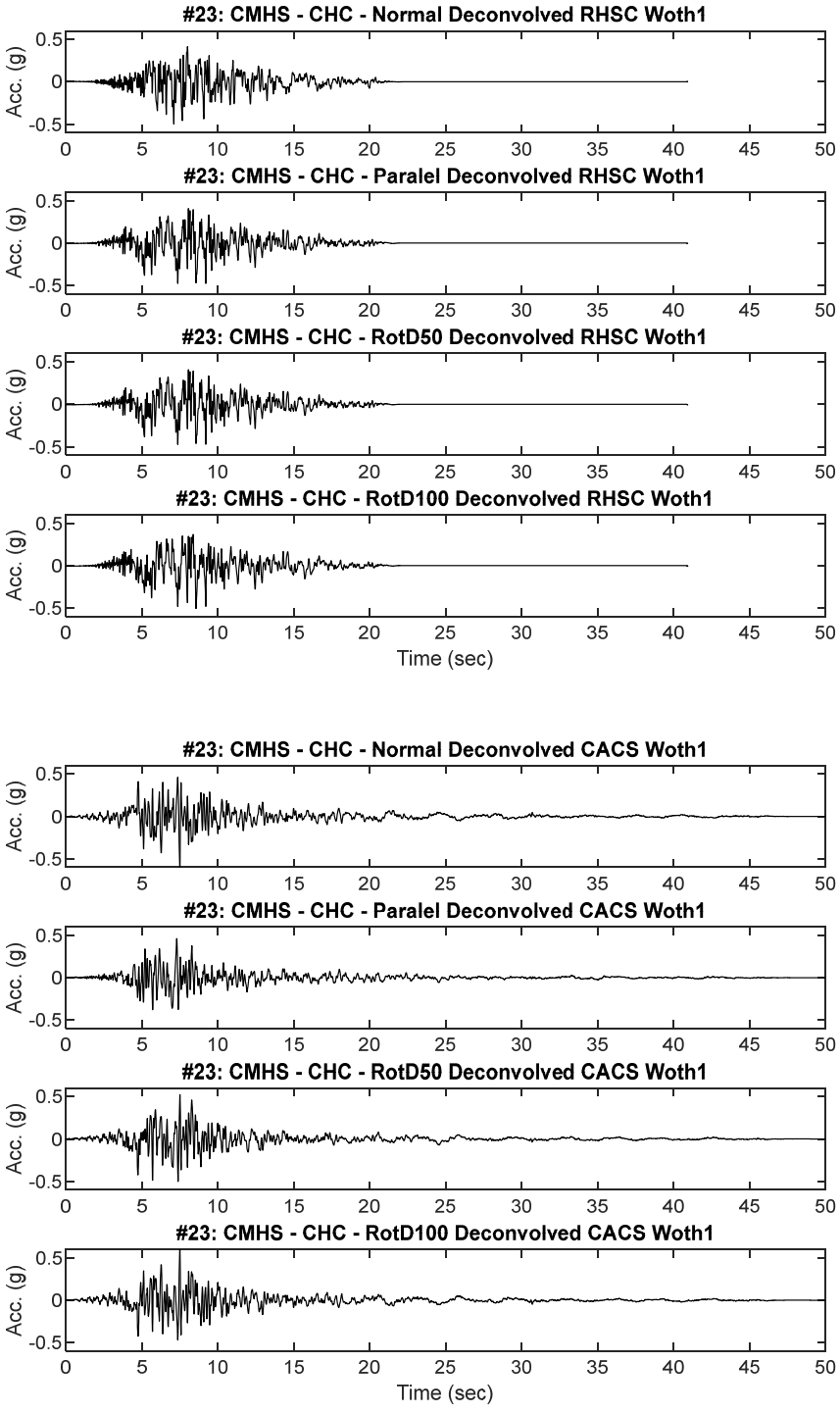


Figure B23.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

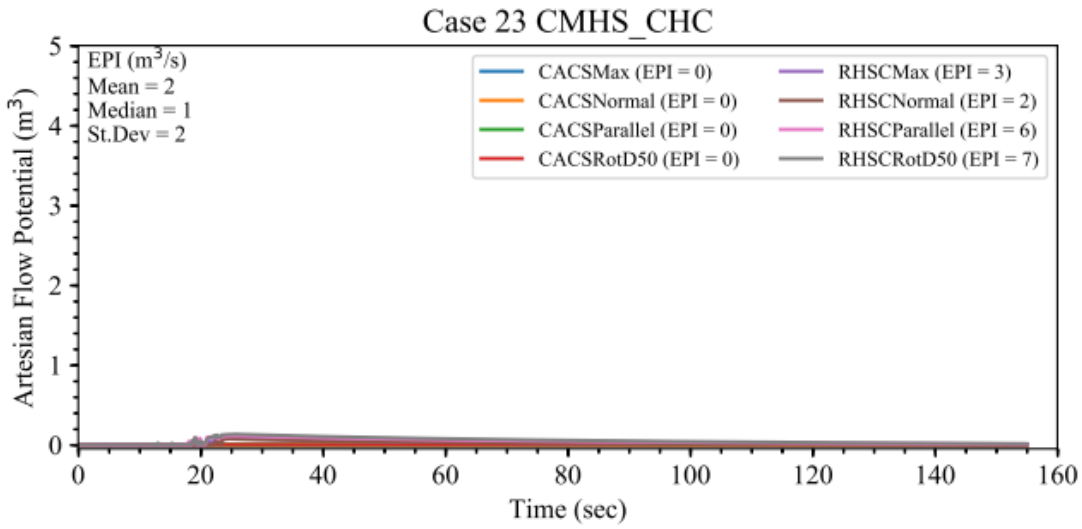


Figure B23.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #24: Paeroa-CHC (M_w6.2, R_{rup} 5.5 km, Riccarton Gravel V_{S30} = 400 m/s)

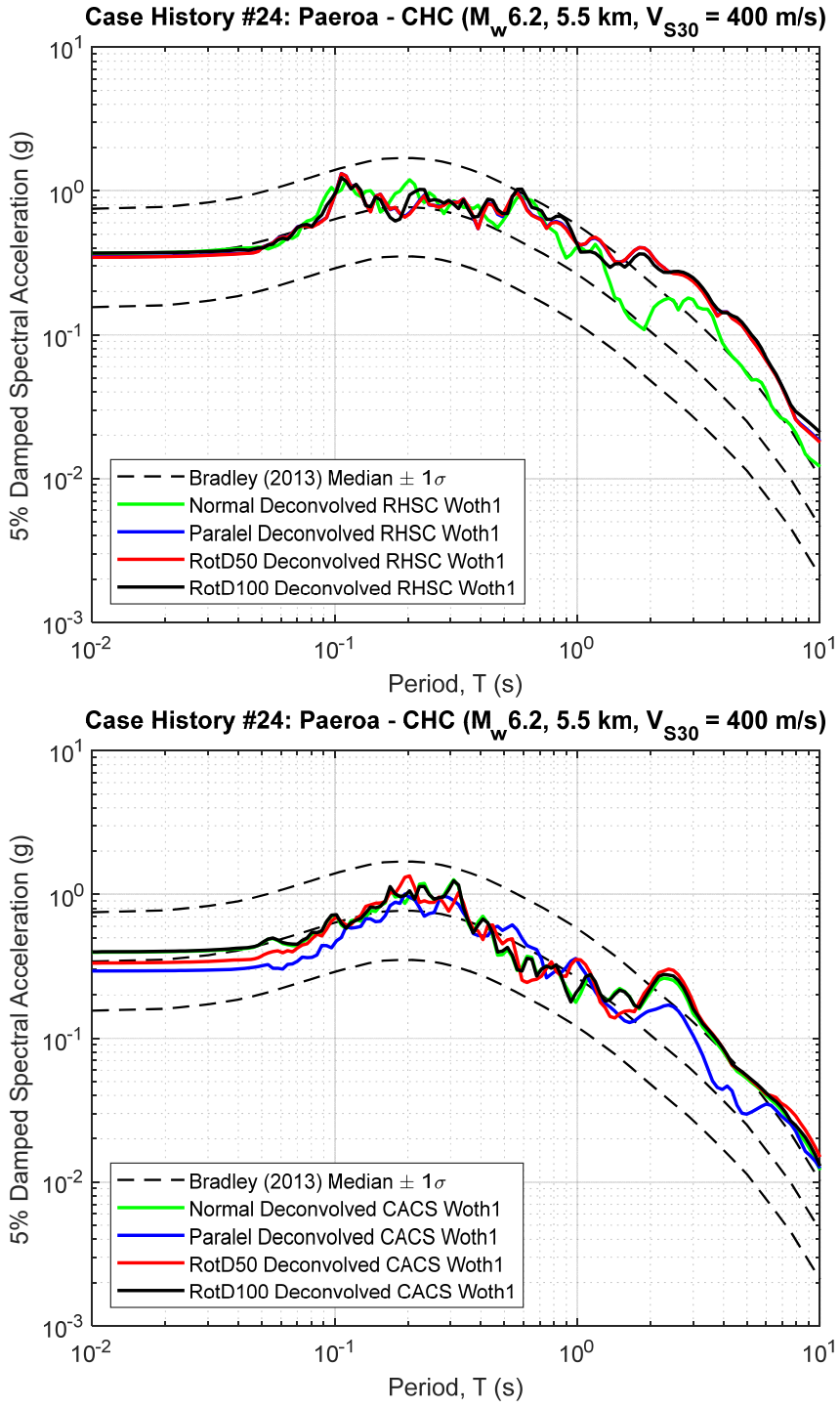


Figure B24.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

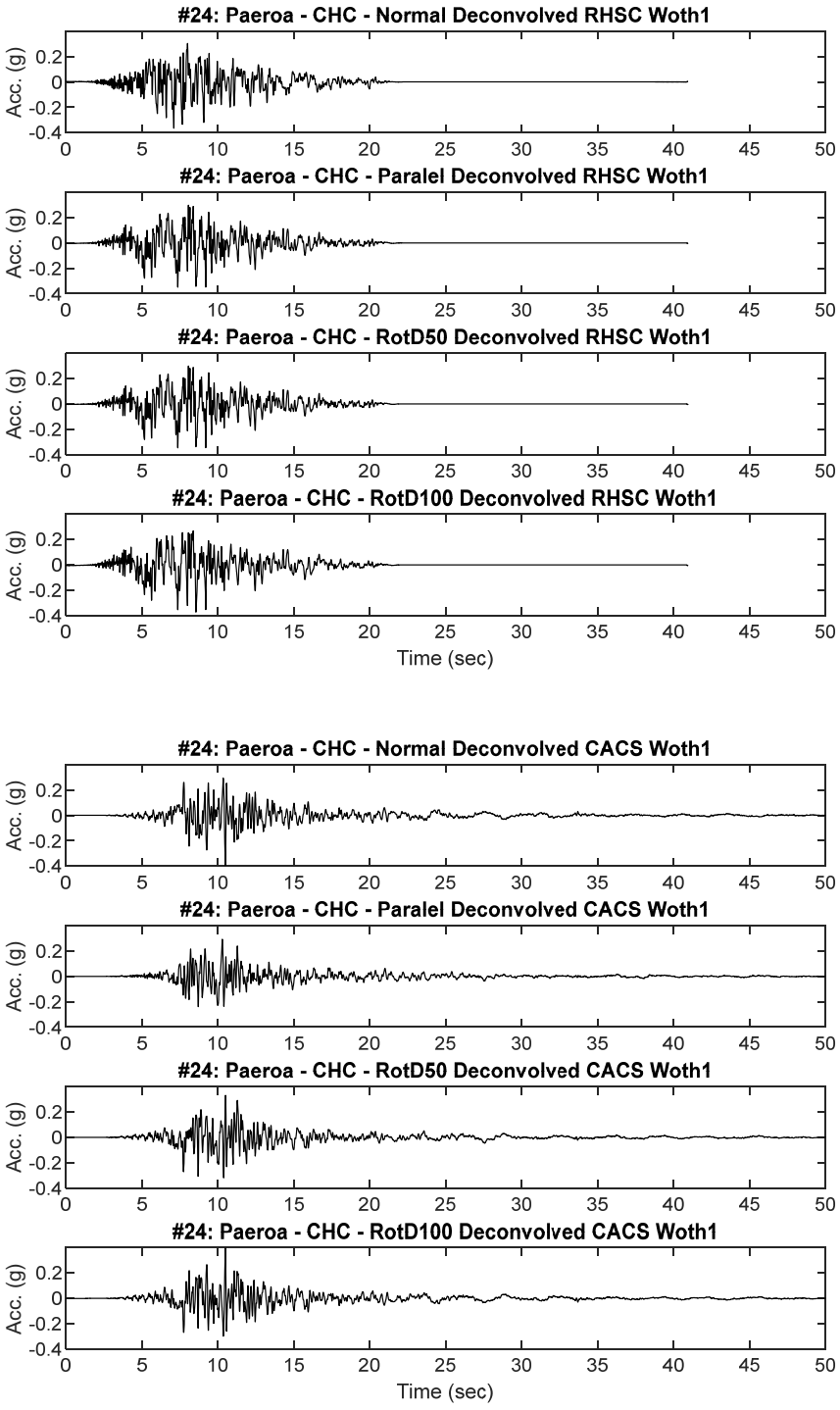


Figure B24.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

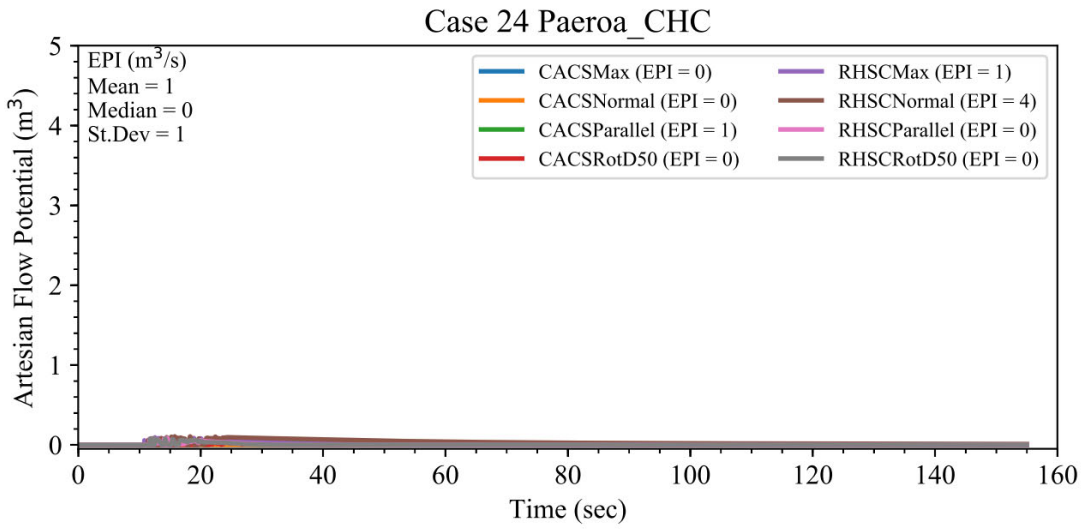


Figure B24.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #25: Carisbrooke-CHC (M_w6.2, R_{rup} 2.8 km, Riccarton Gravel V_{S30} = 450 m/s)

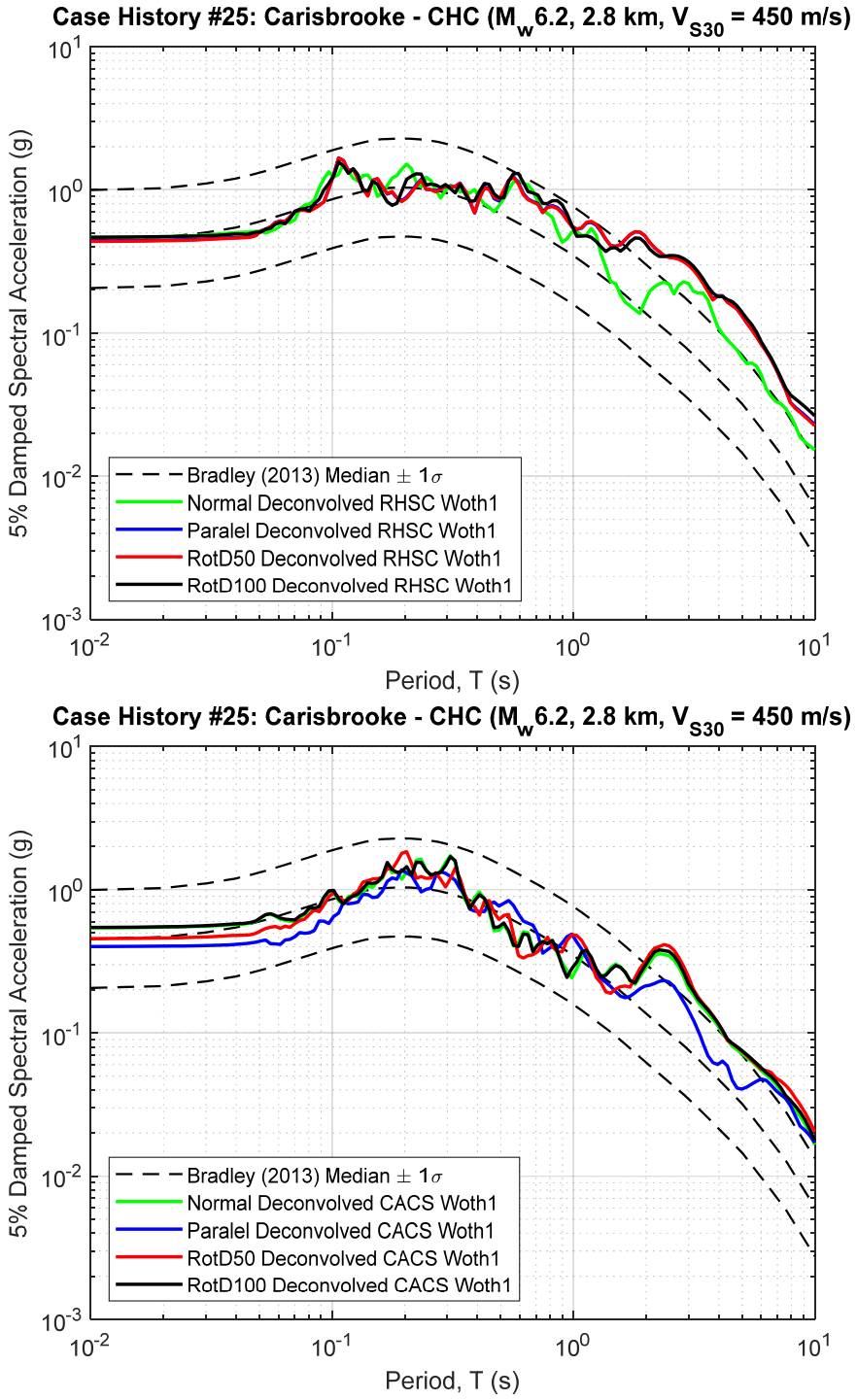


Figure B25.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)

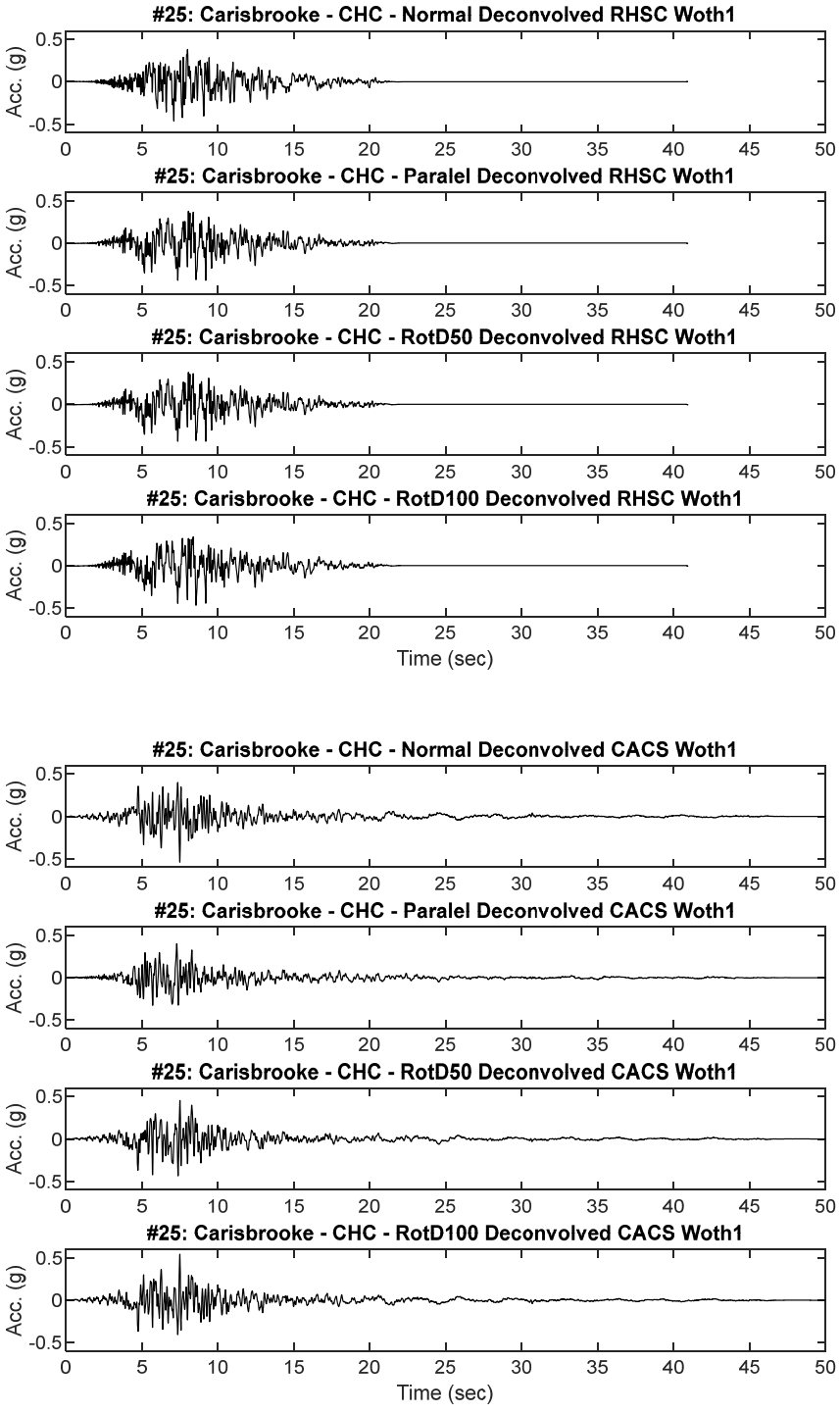


Figure B25.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

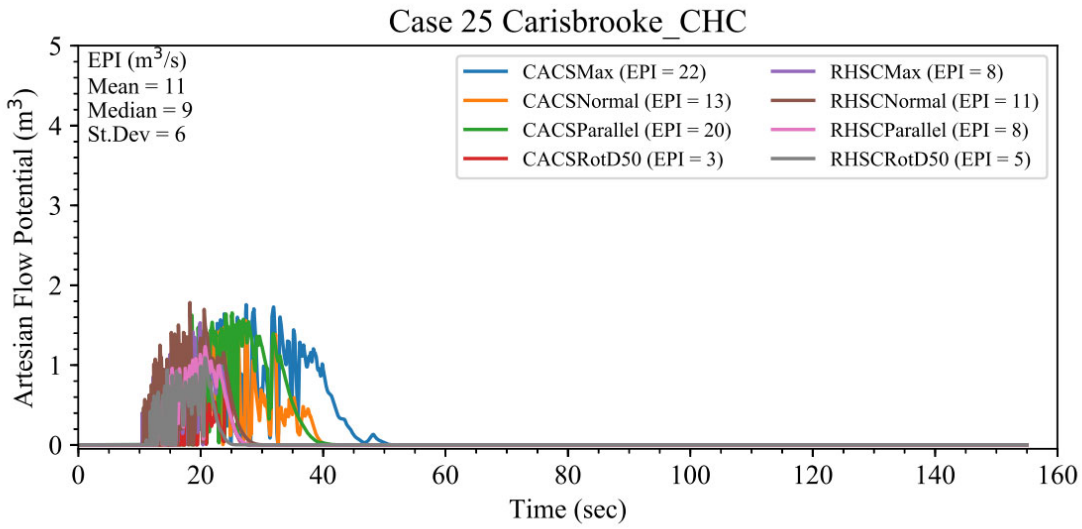


Figure B25.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #26: Brougham St.-CHC (M_w6.2, R_{rup} 2.9 km, Riccarton Gravel V_{S30} = 450 m/s)

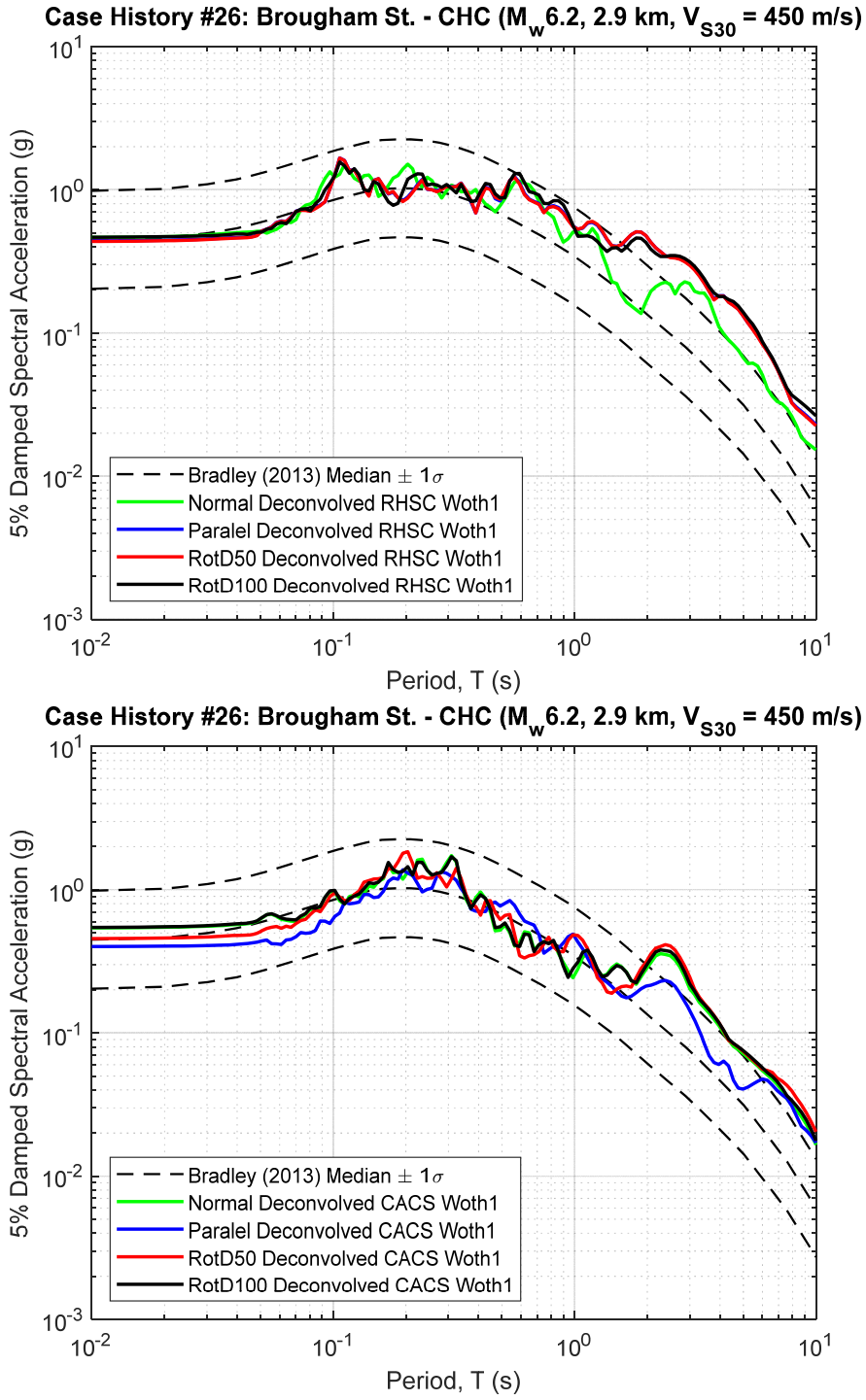


Figure B26.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)

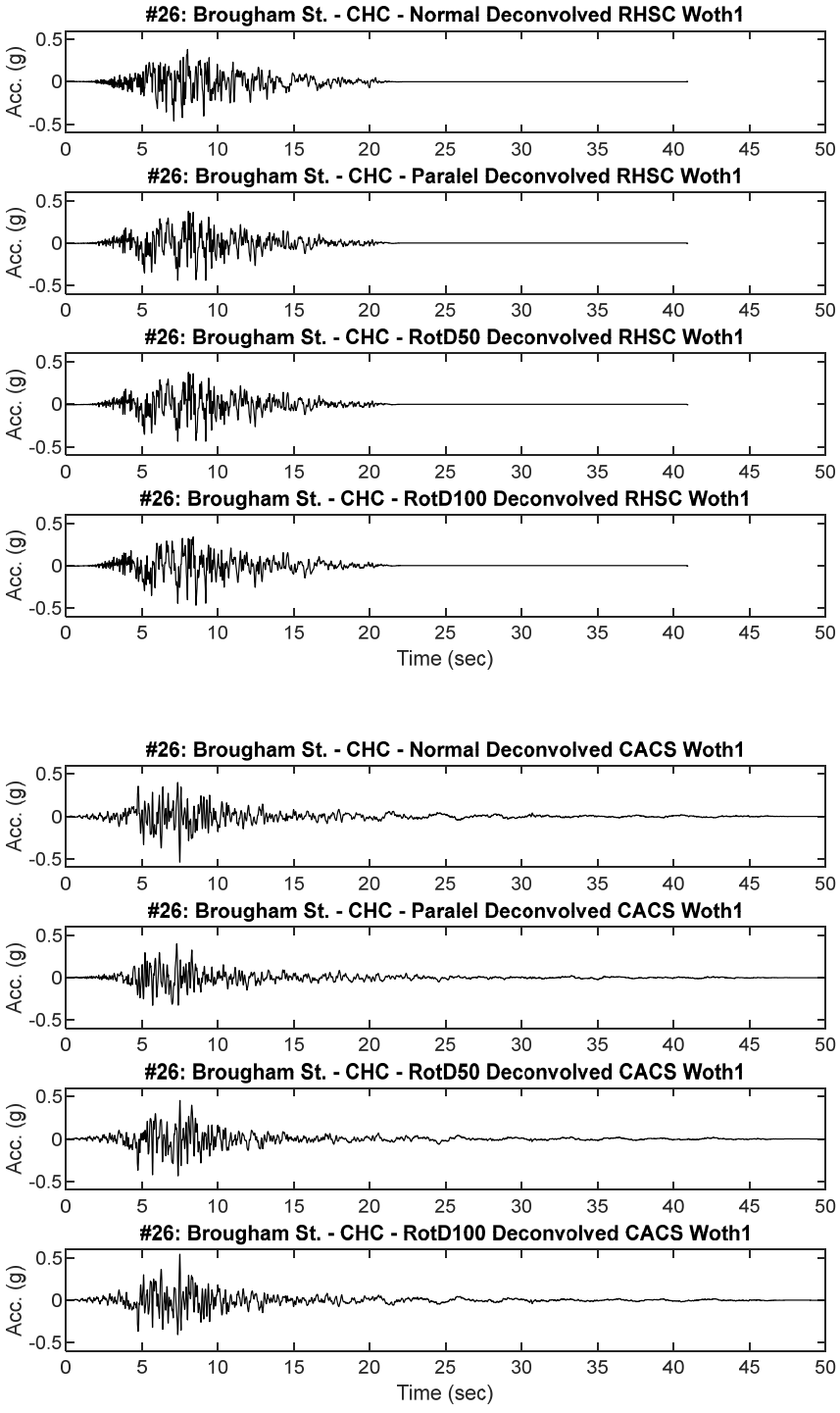


Figure B26.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

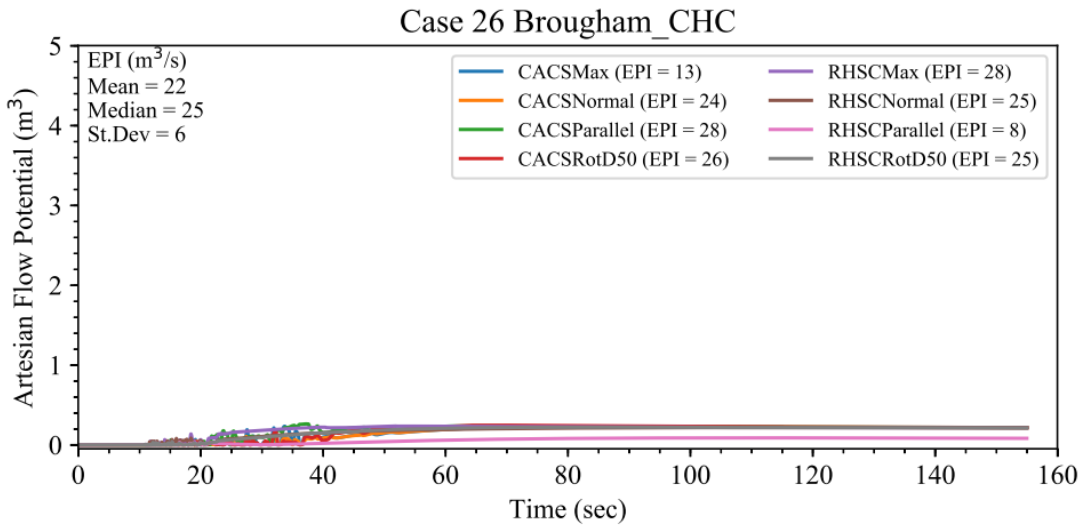


Figure B26.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #27: Rydal-DAR (M_w7.1, R_{rup} 12.7 km, Riccarton Gravel V_{S30} = 400 m/s)

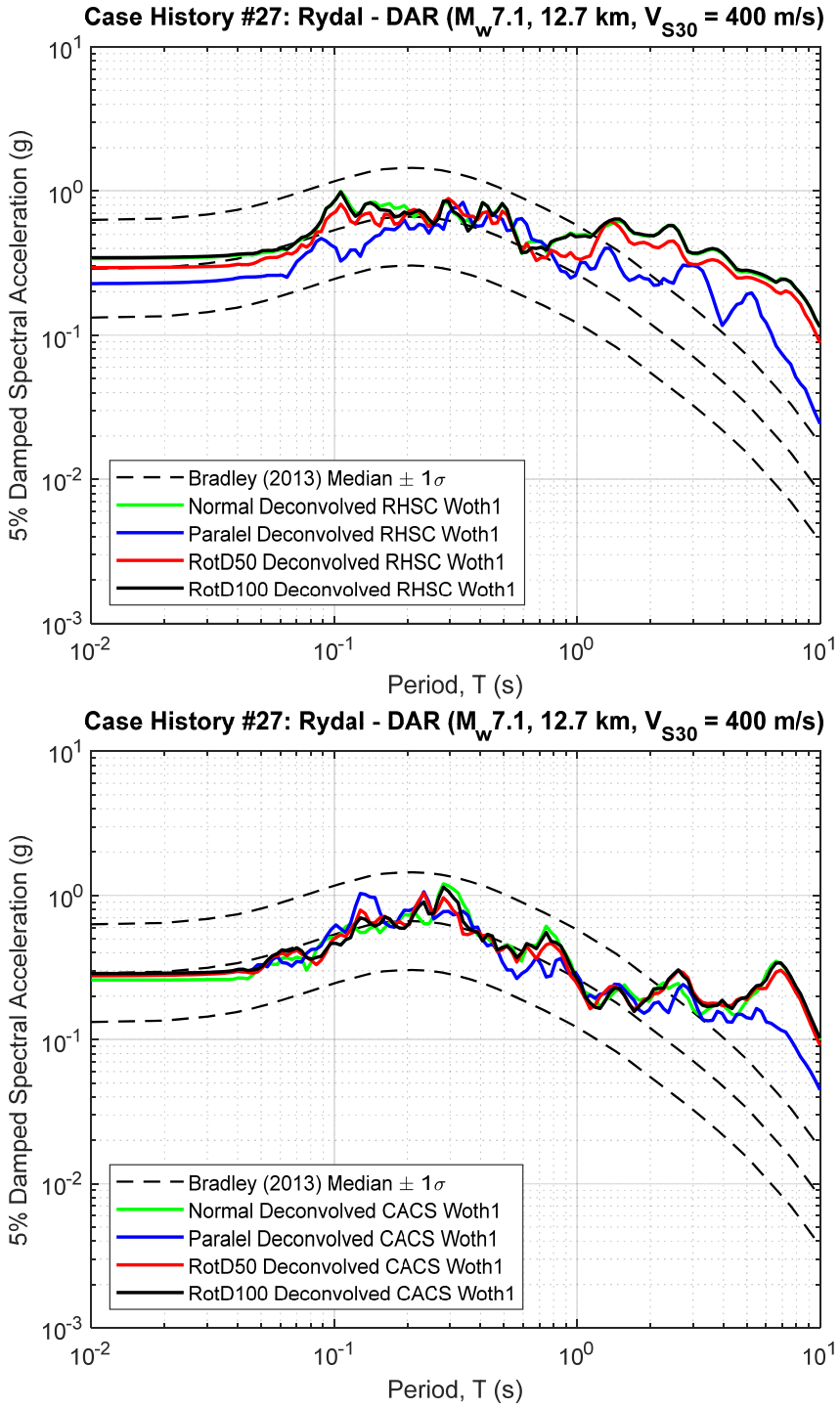


Figure B27.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)

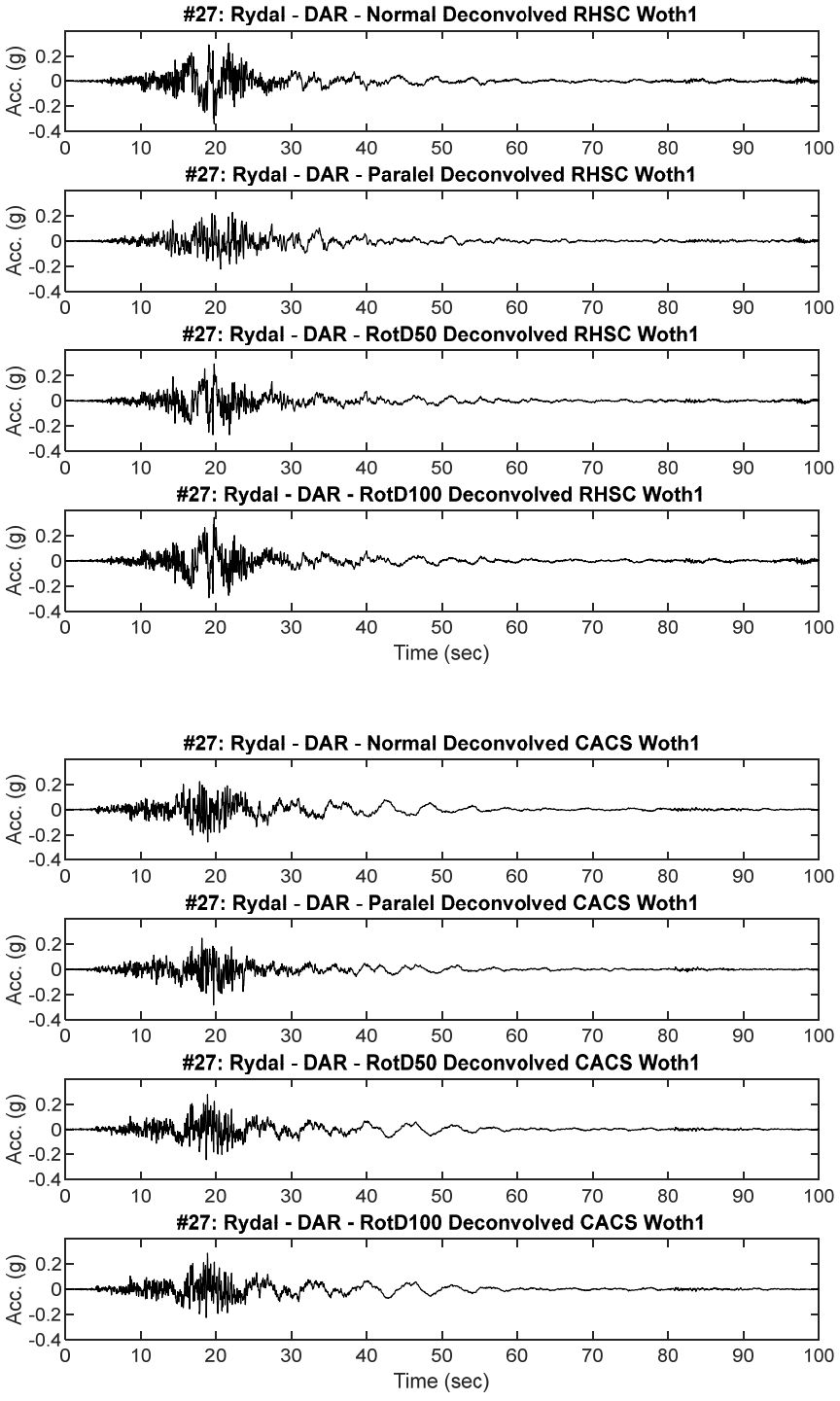


Figure B27.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

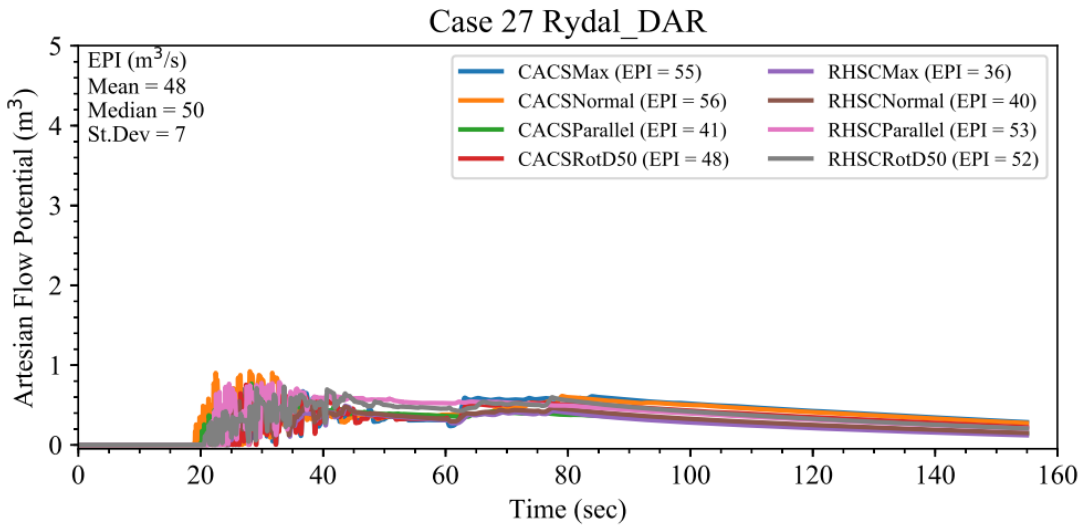
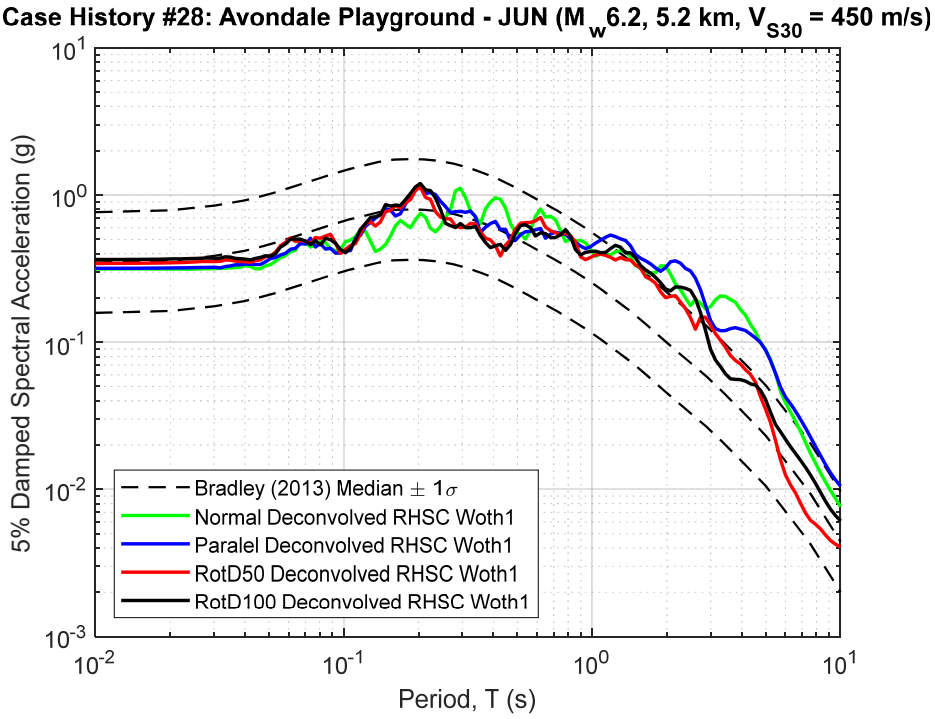


Figure B27.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #28: Avondale Playground-JUN (M_w6.2, R_{rup} 5.2 km, Riccarton Gravel V_{S30} = 400 m/s)



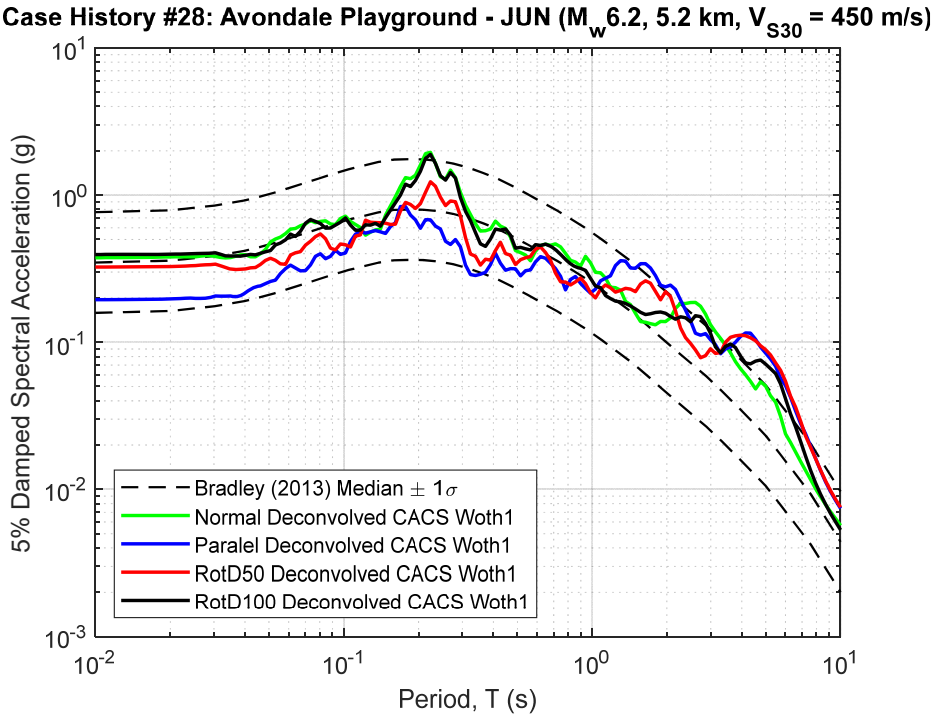


Figure B28.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

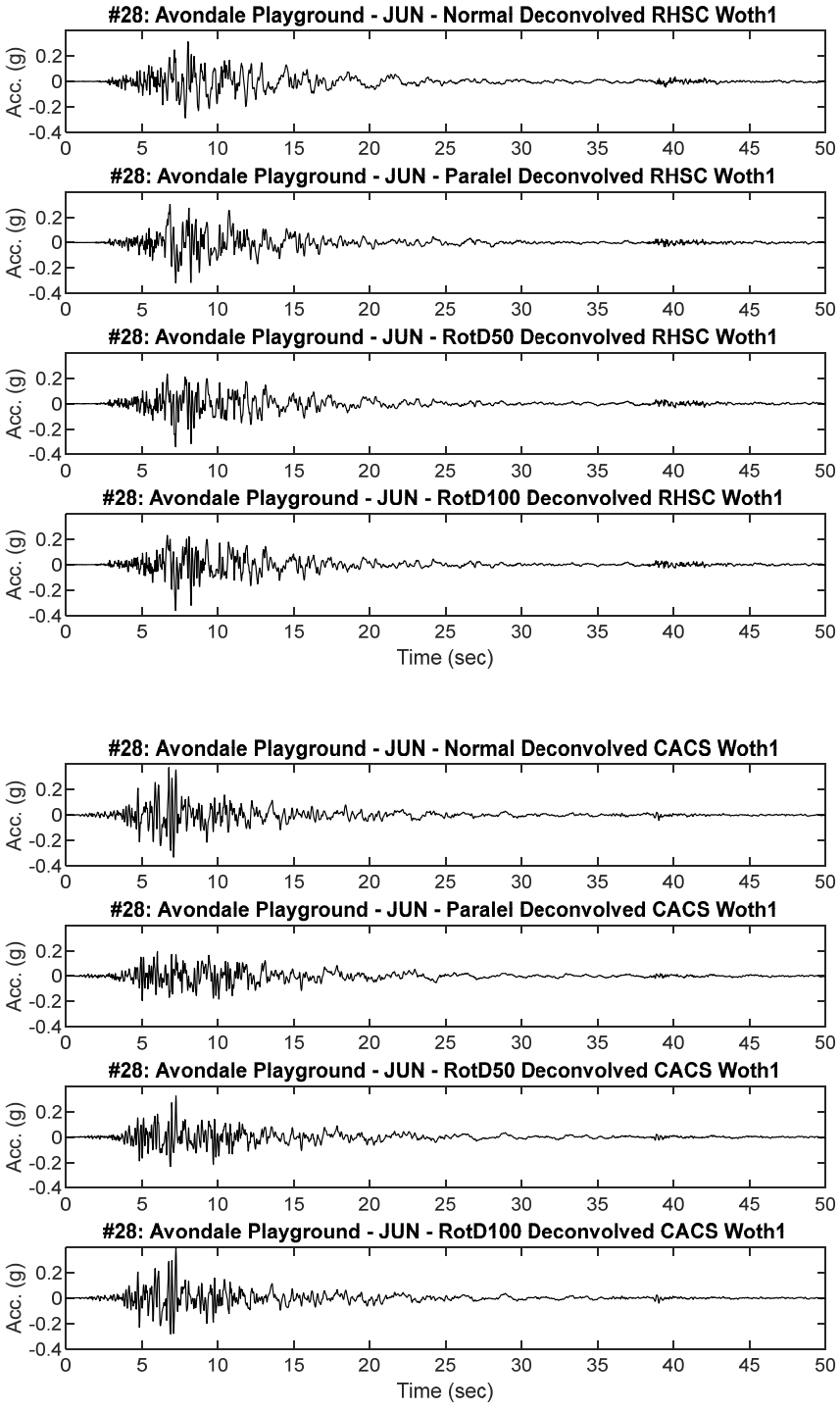


Figure B28.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

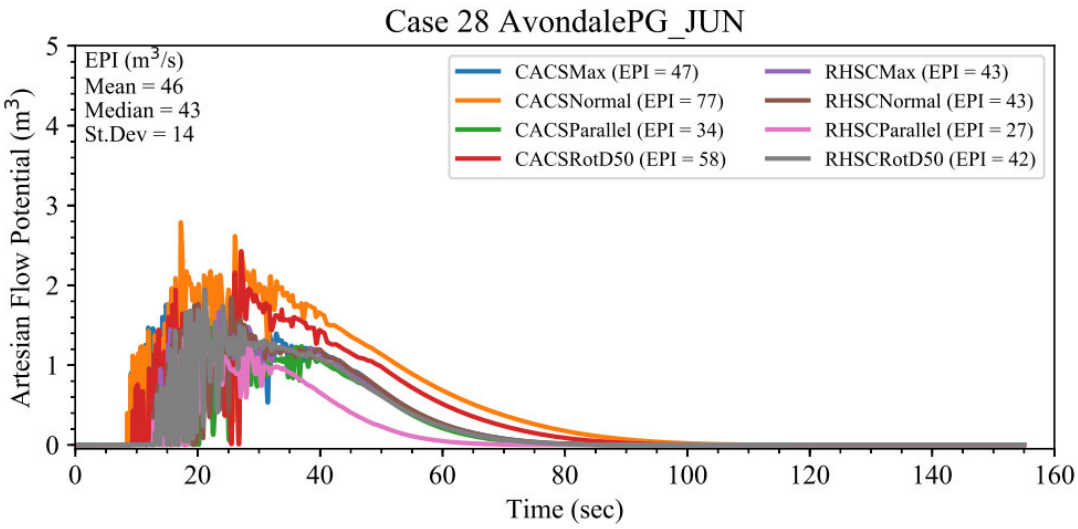


Figure B28.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #29: Cresselly-JUN (M_w6.2, R_{rup} 4.7 km, Riccarton Gravel V_{S30} = 400 m/s)

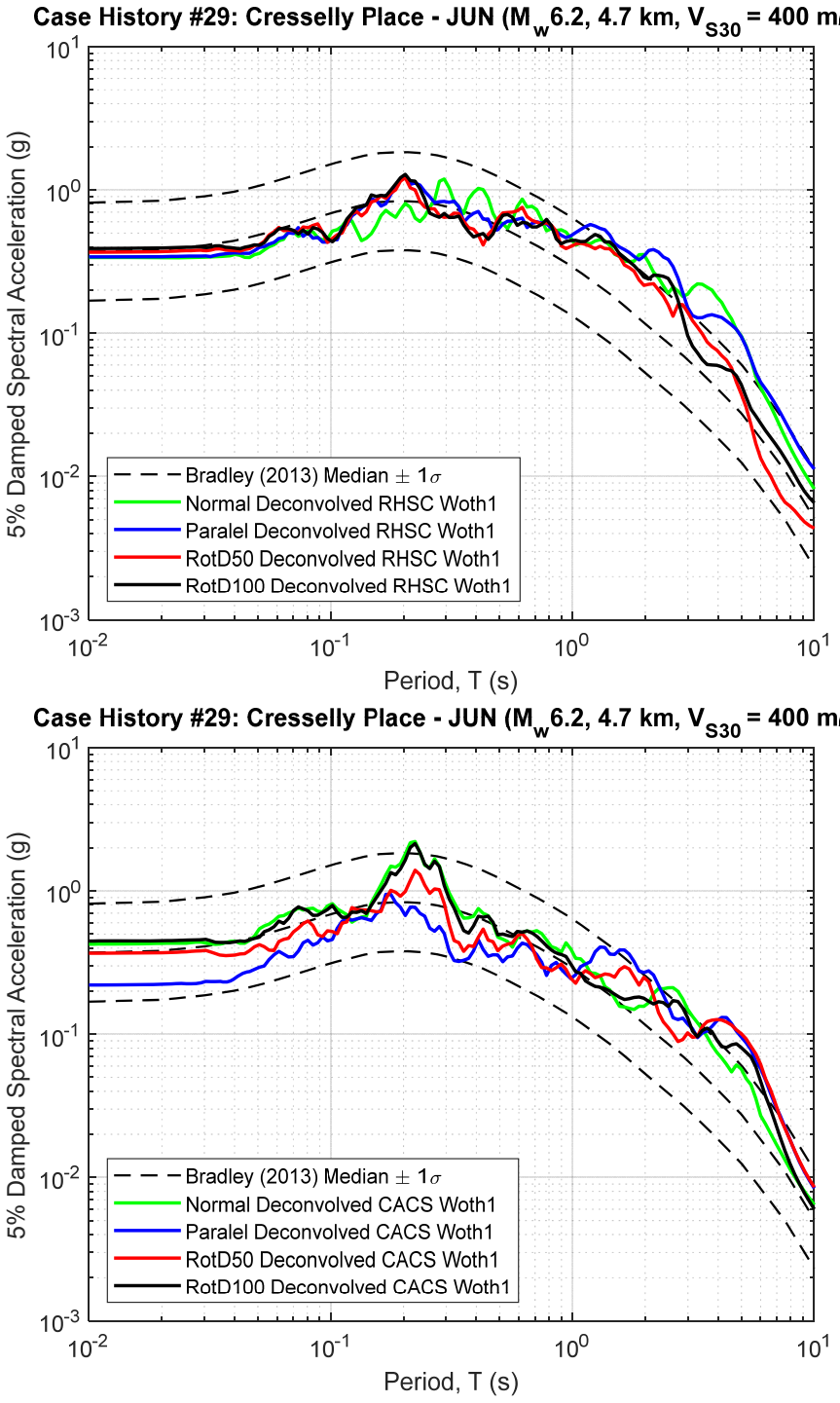


Figure B29.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the *R_{rup}* and *V_{S30}* of studied site)

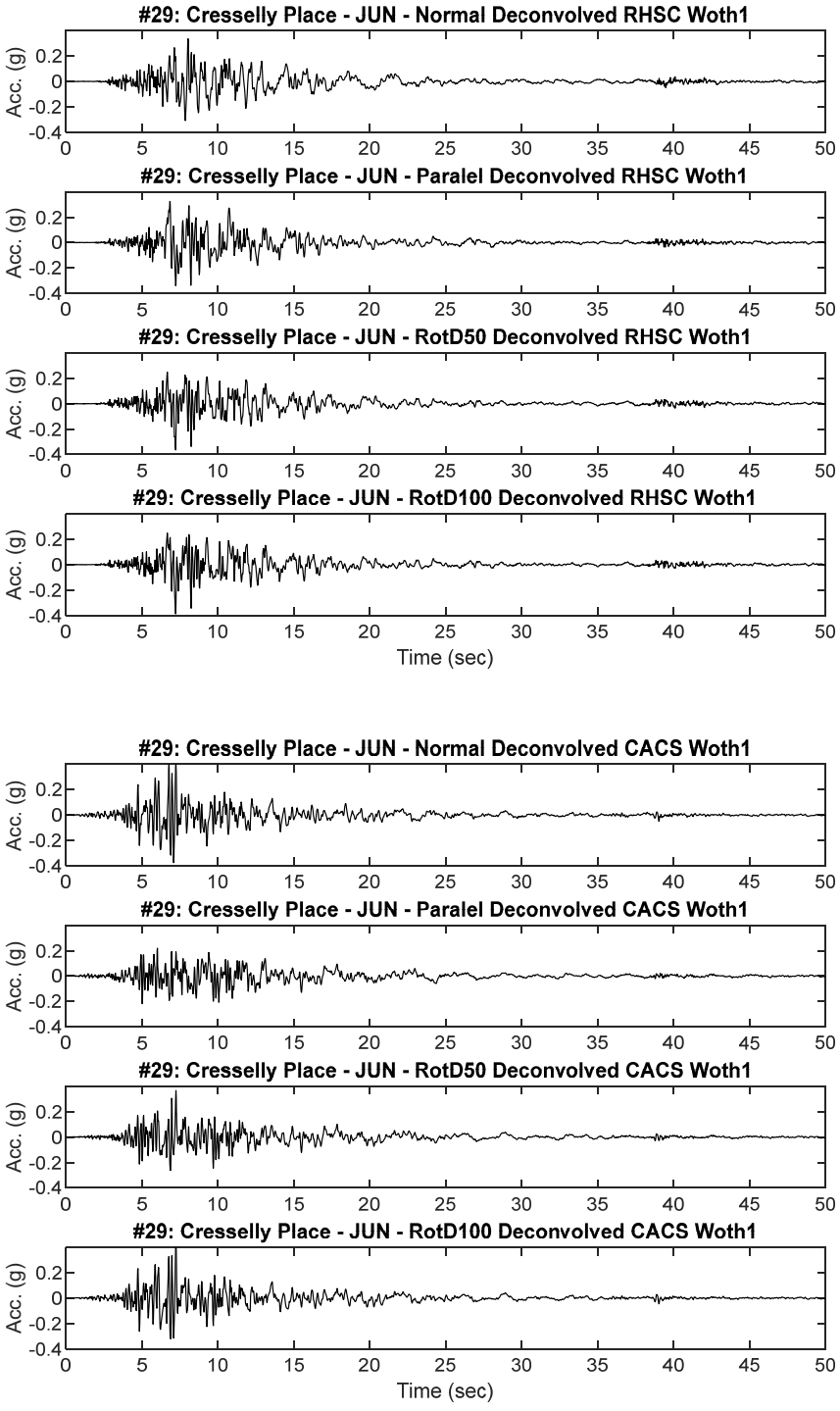


Figure B29.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

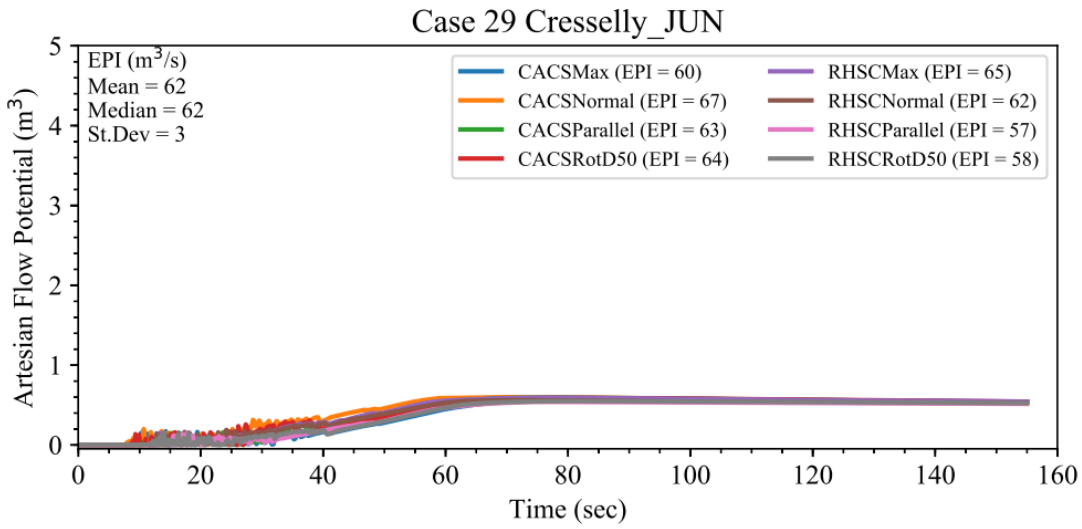


Figure B29.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #30: Barrington-CHC (M_w6.2, R_{rup} 3.0 km, Riccarton Gravel V_{S30} = 400 m/s)

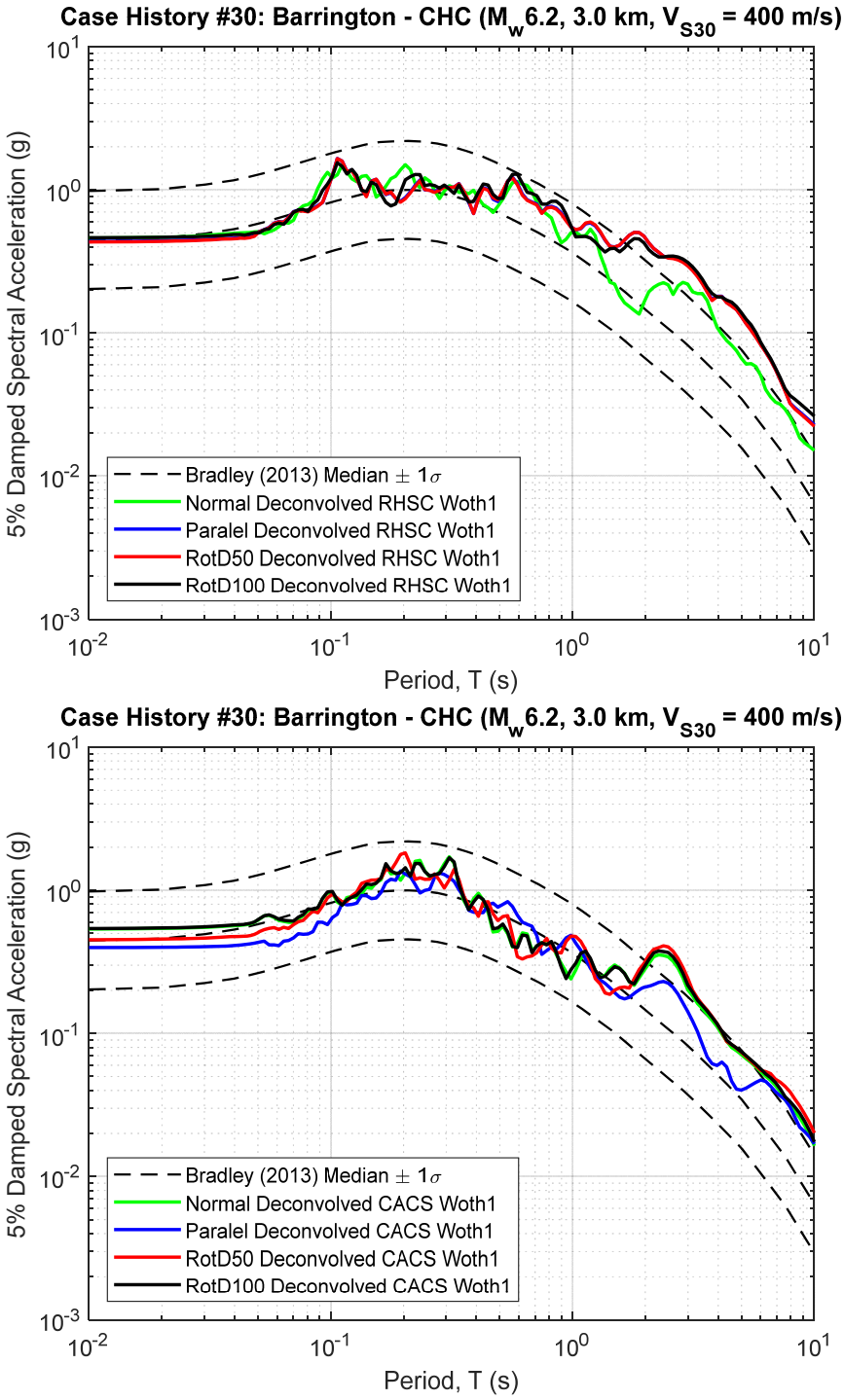


Figure B30.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

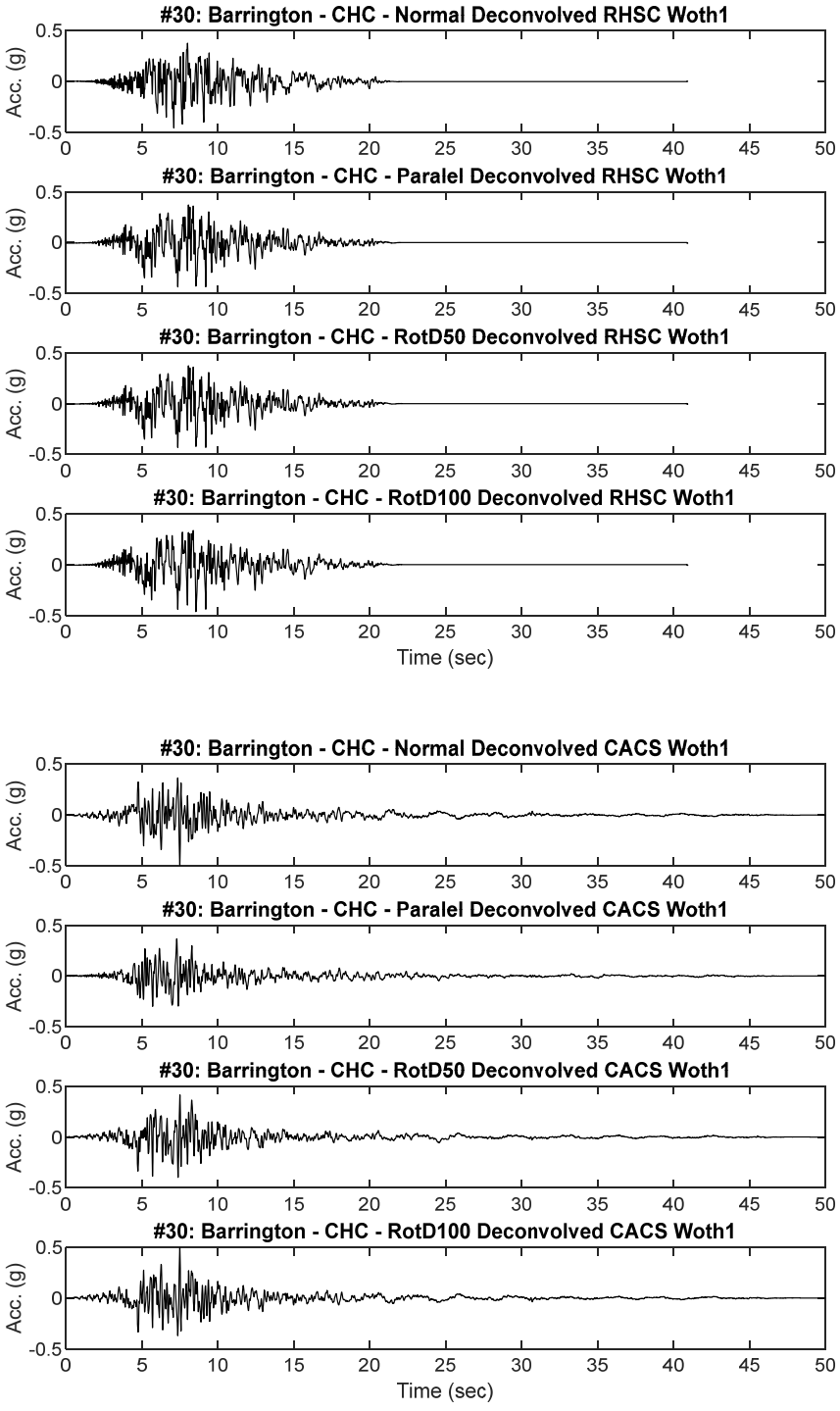


Figure B30.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

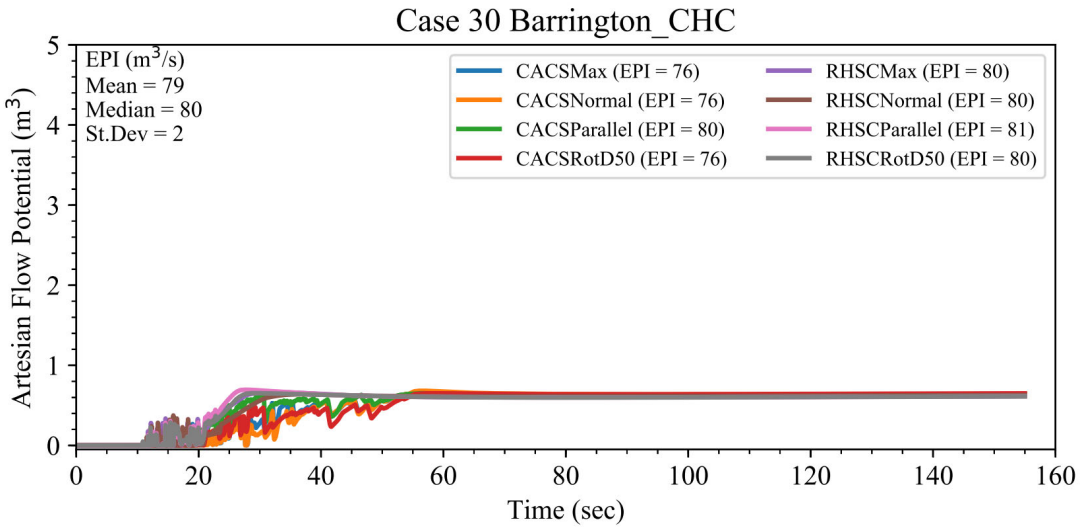


Figure B30.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #31: Avondale Playground-CHC (M_w6.2, R_{rup} 3.9 km, Riccarton Gravel V_{S30} = 450 m/s)

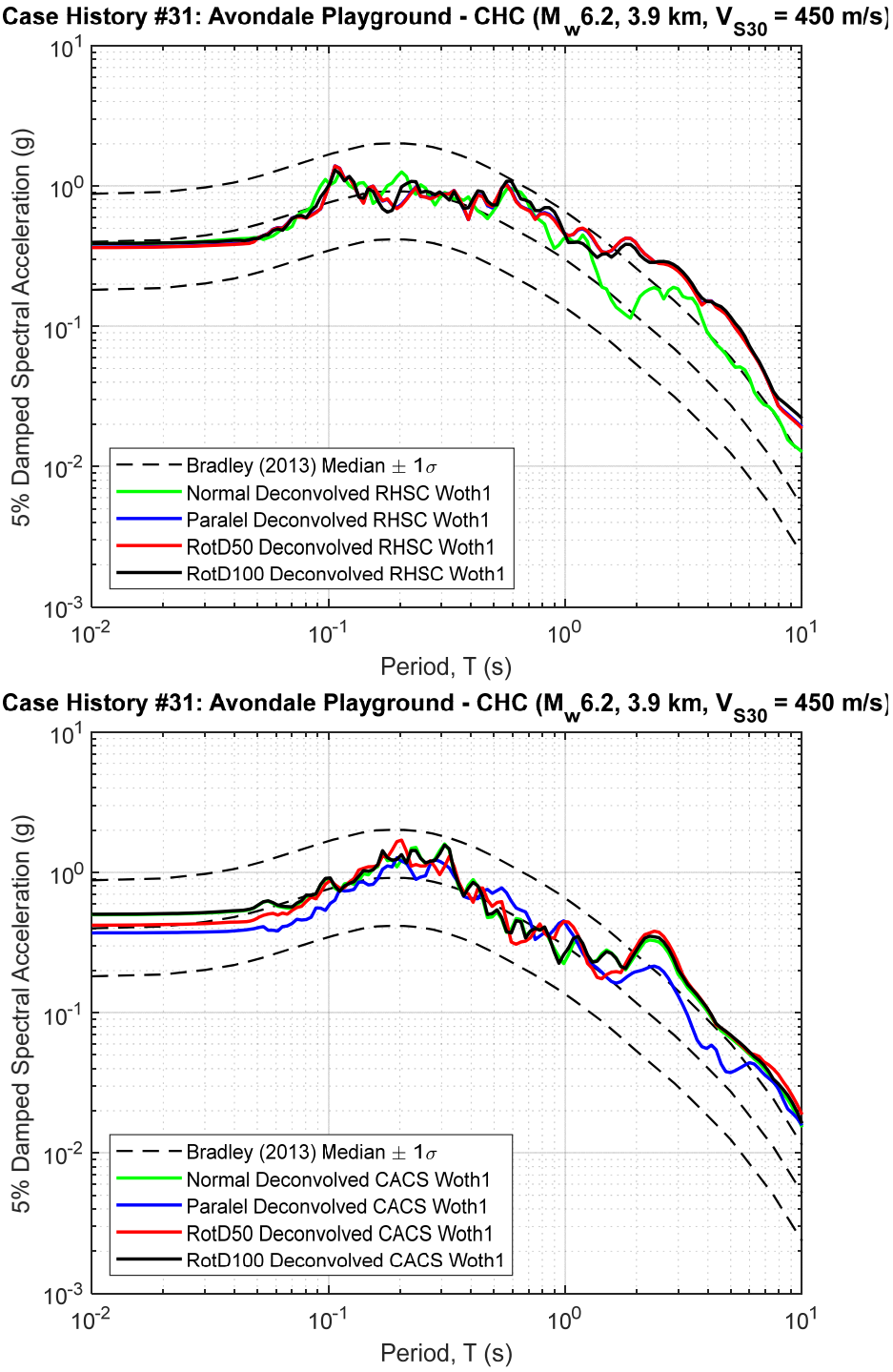
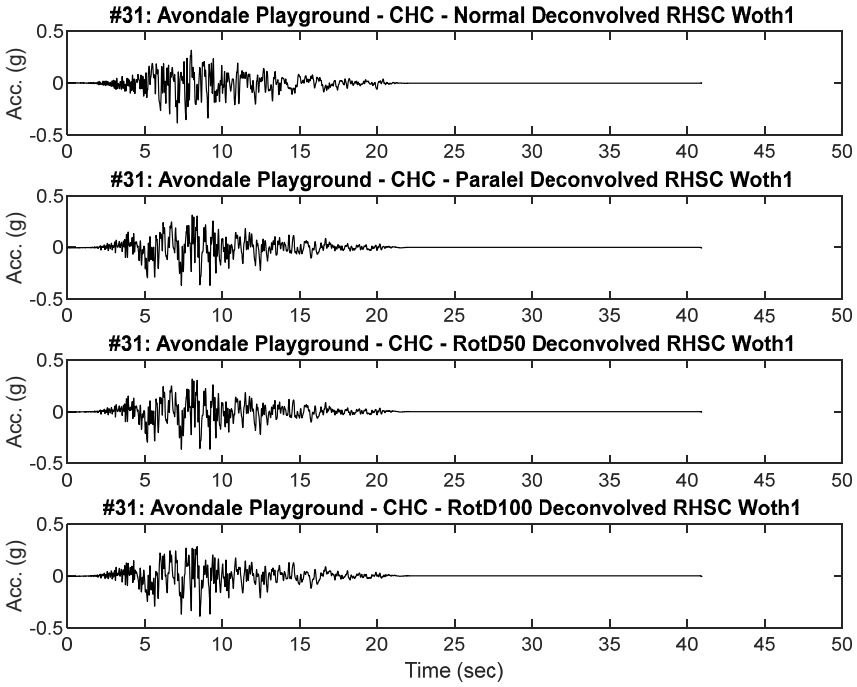


Figure B31.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



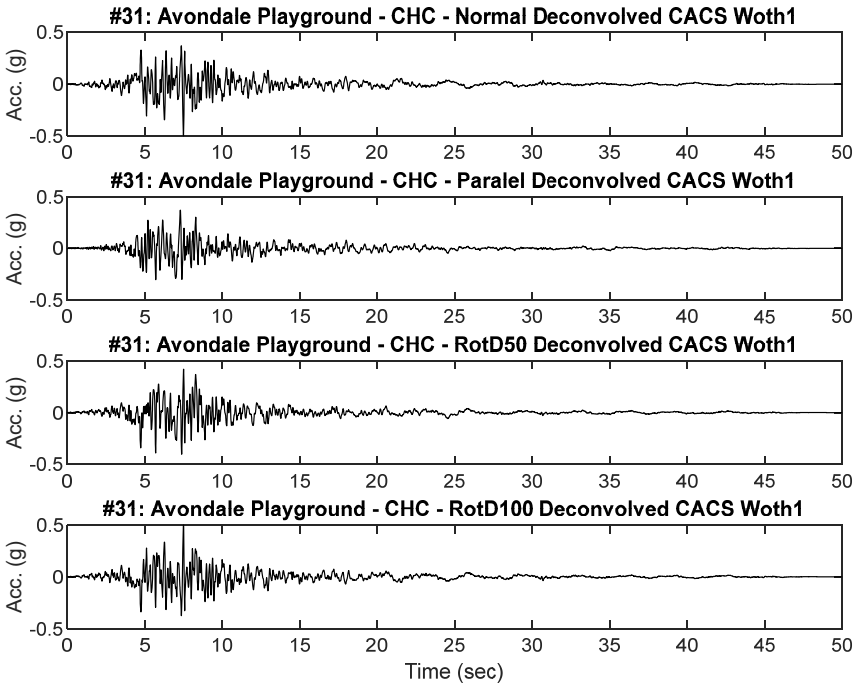


Figure B31.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

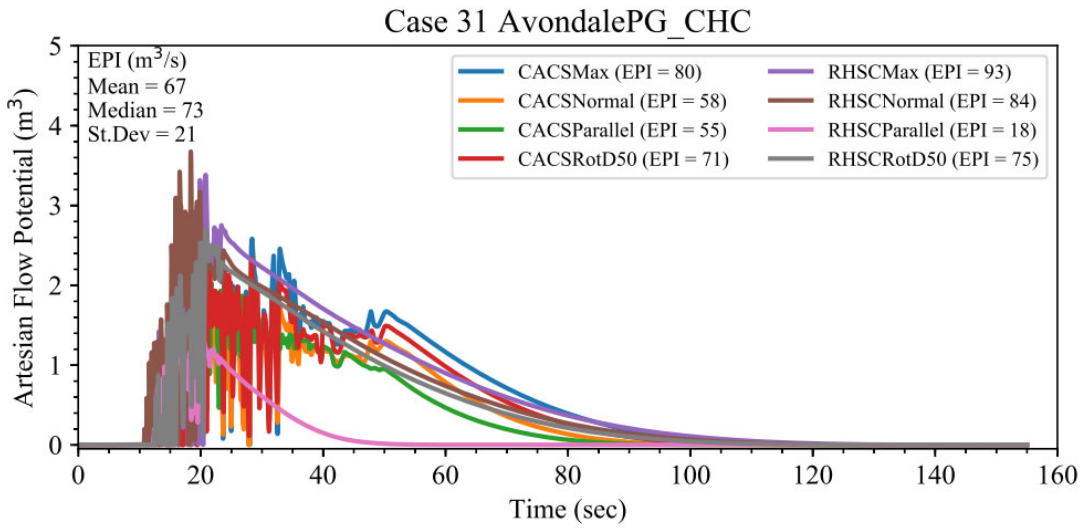
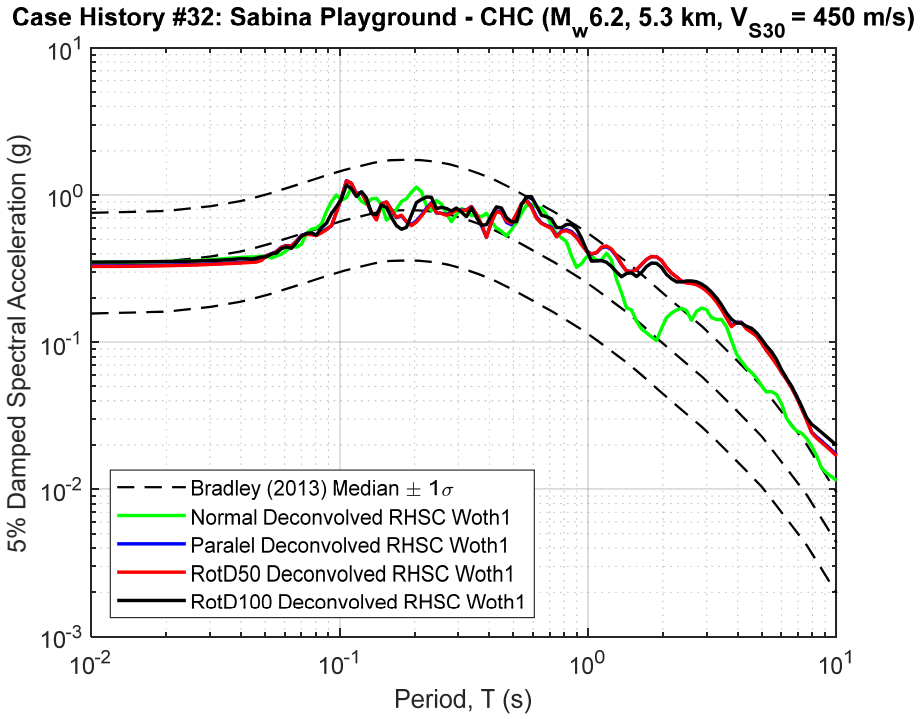


Figure B31.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #32: Sabina-CHC (M_w6.2, R_{rup} 3.9 km, Riccarton Gravel V_{S30} = 450 m/s)



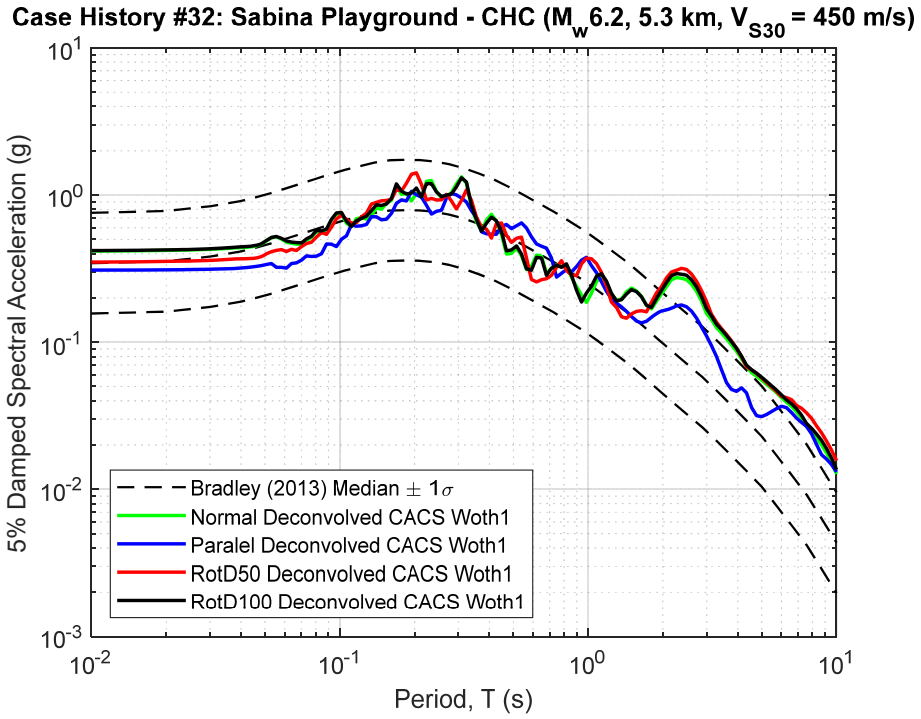


Figure B32.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

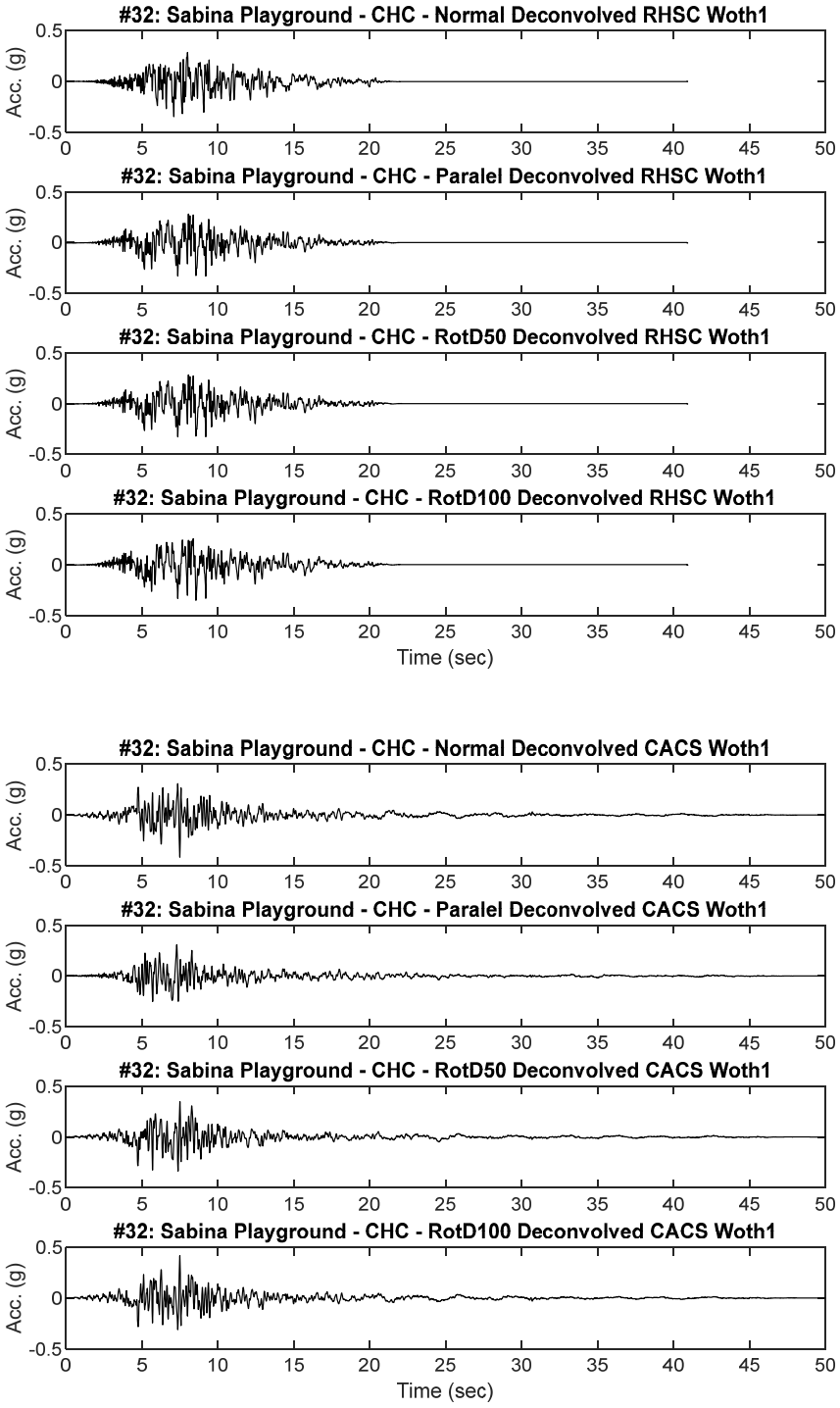


Figure B32.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

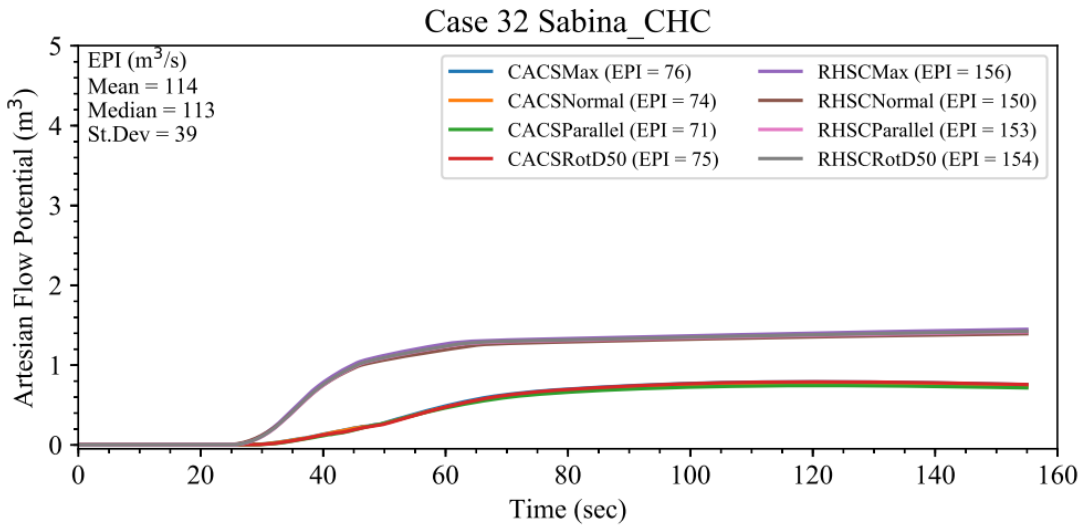


Figure B32.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

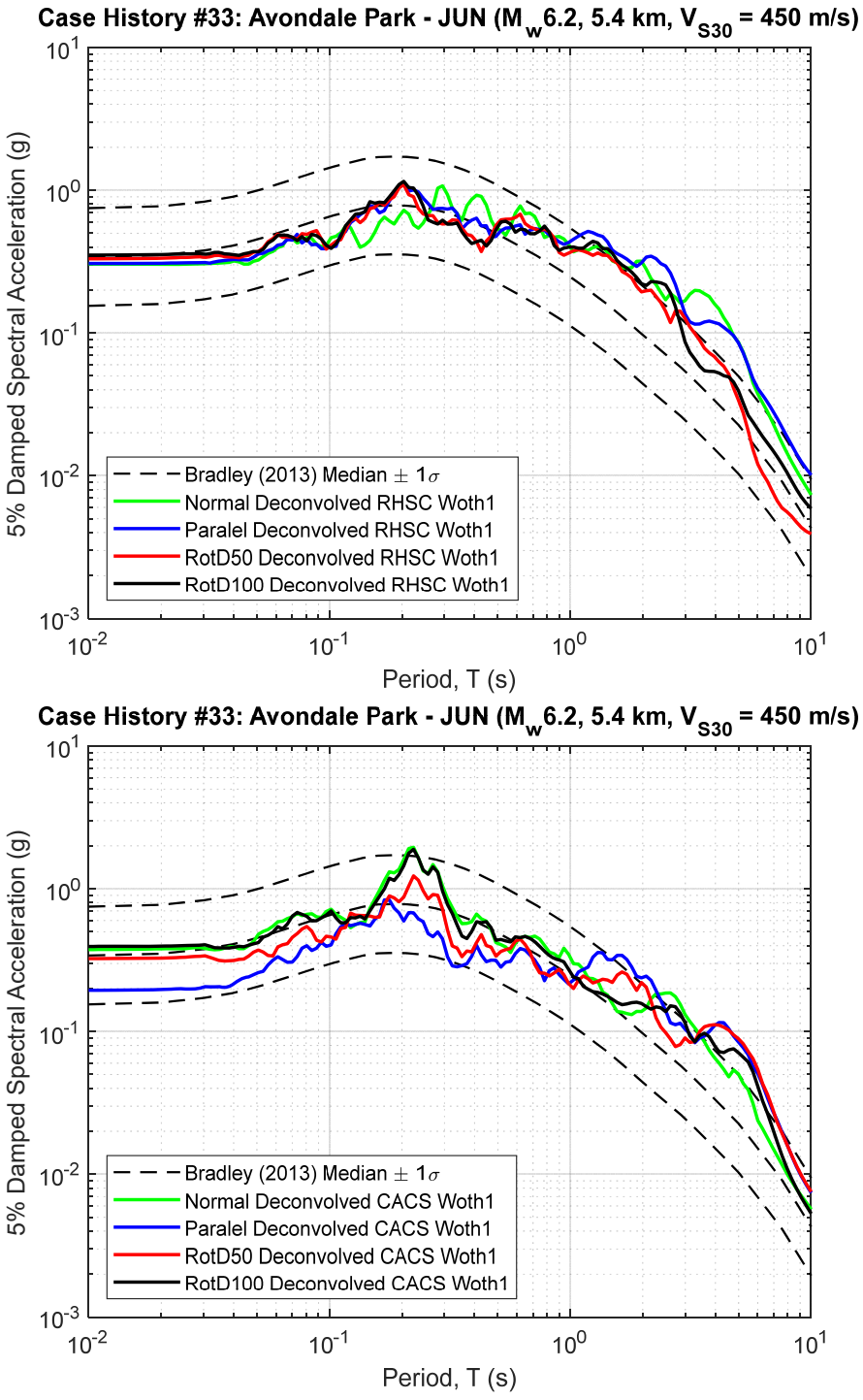


Figure B33.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

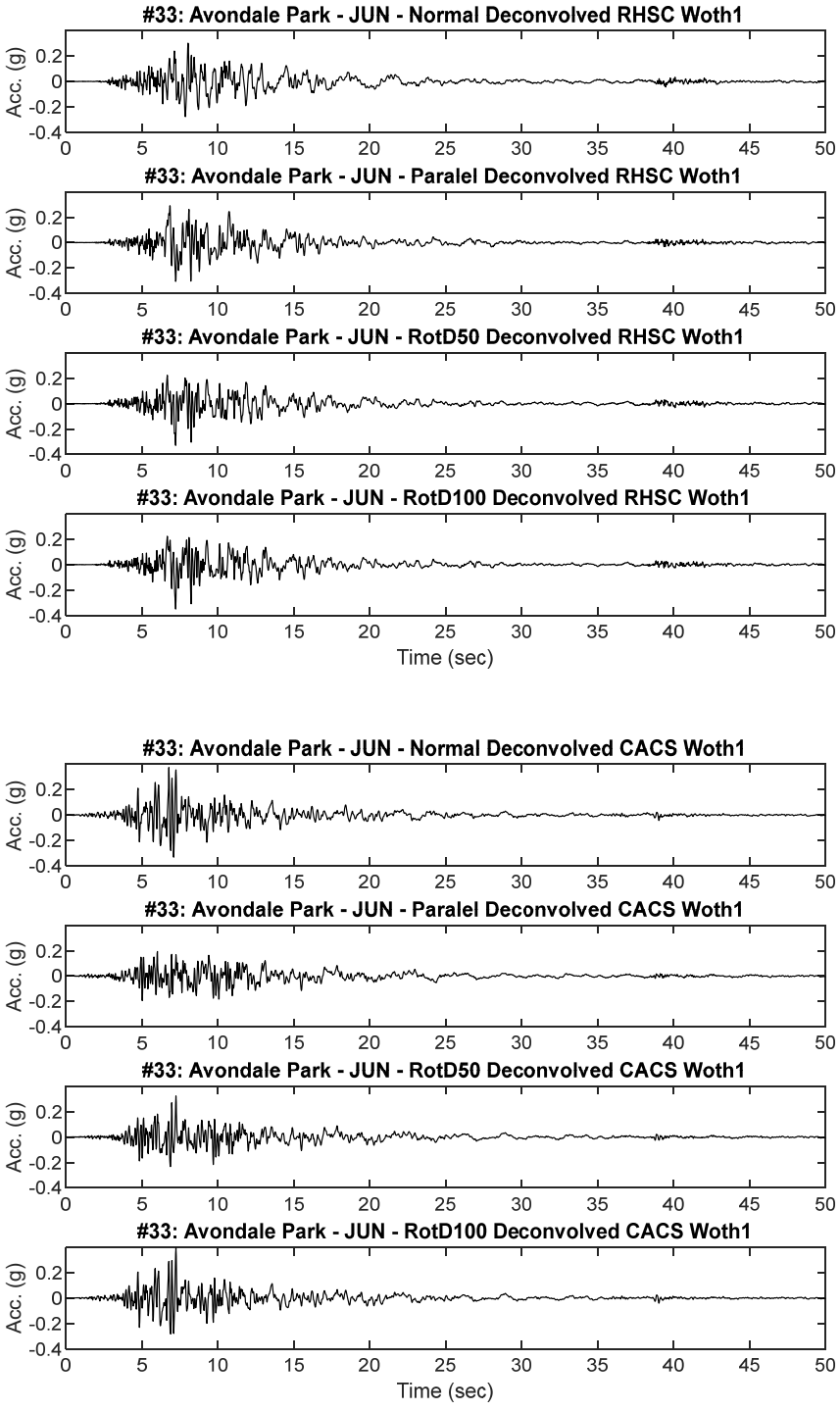


Figure B33.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

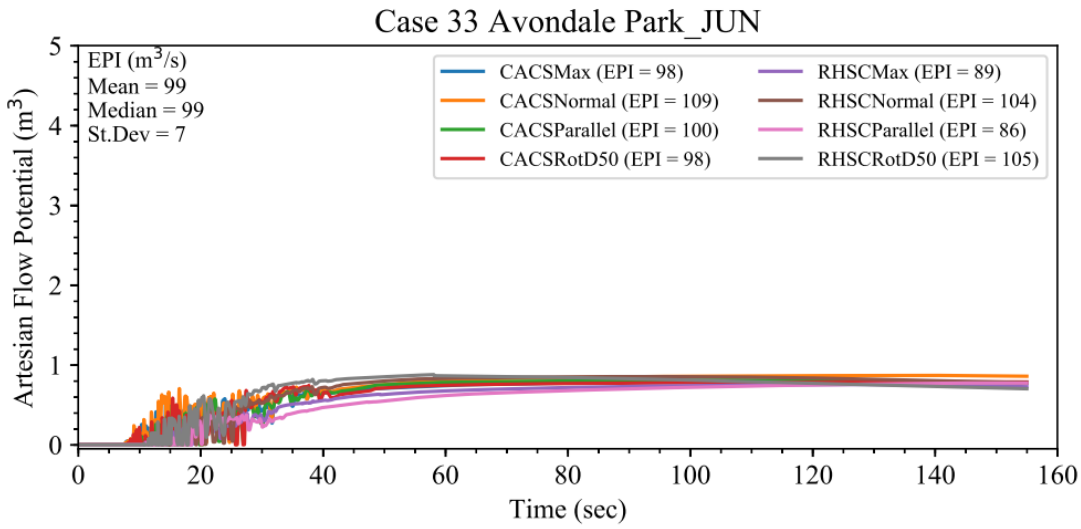


Figure B33.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #34: Sabina-JUN (M_w6.2, R_{rup} 6.5 km, Riccarton Gravel V_{S30} = 450 m/s)

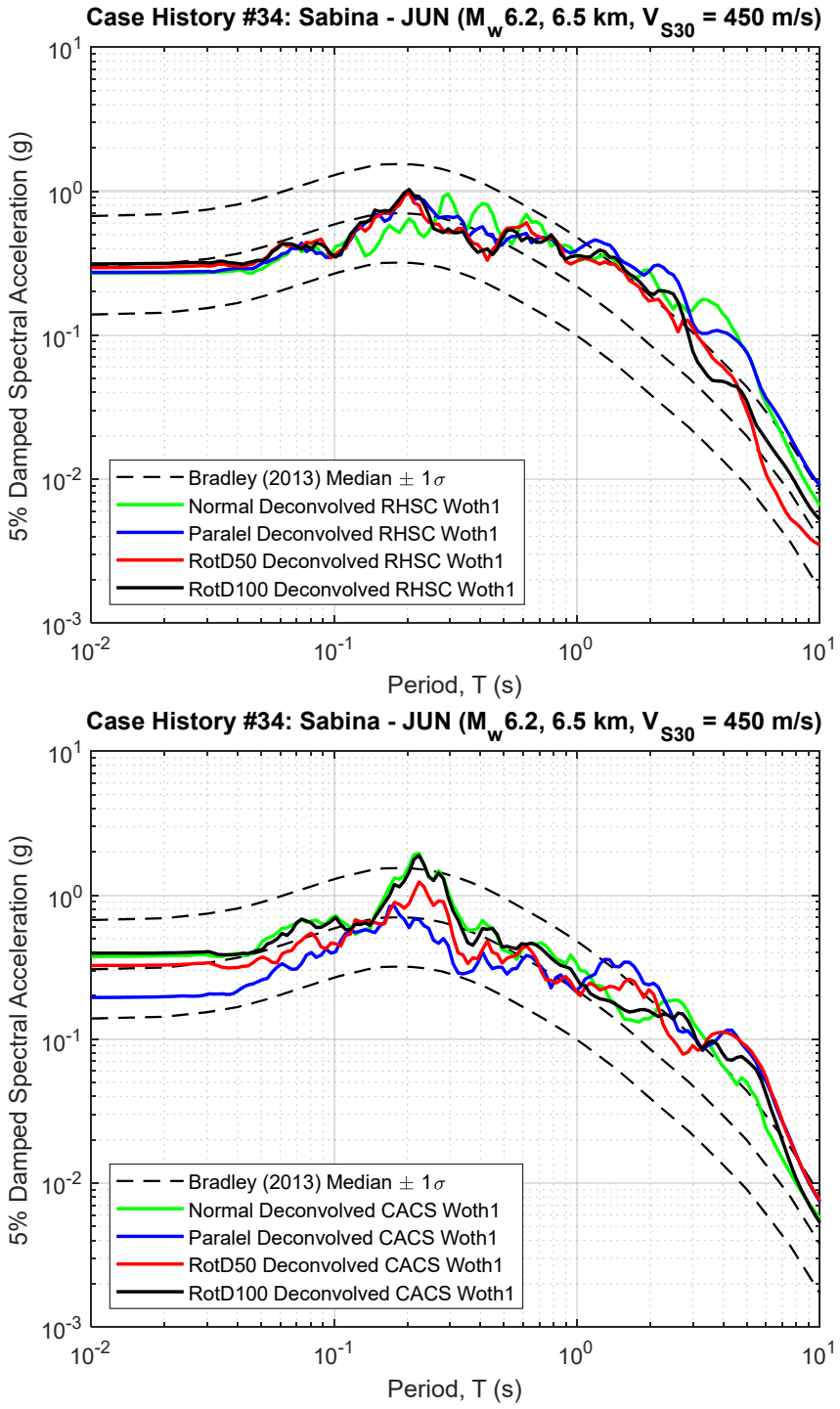
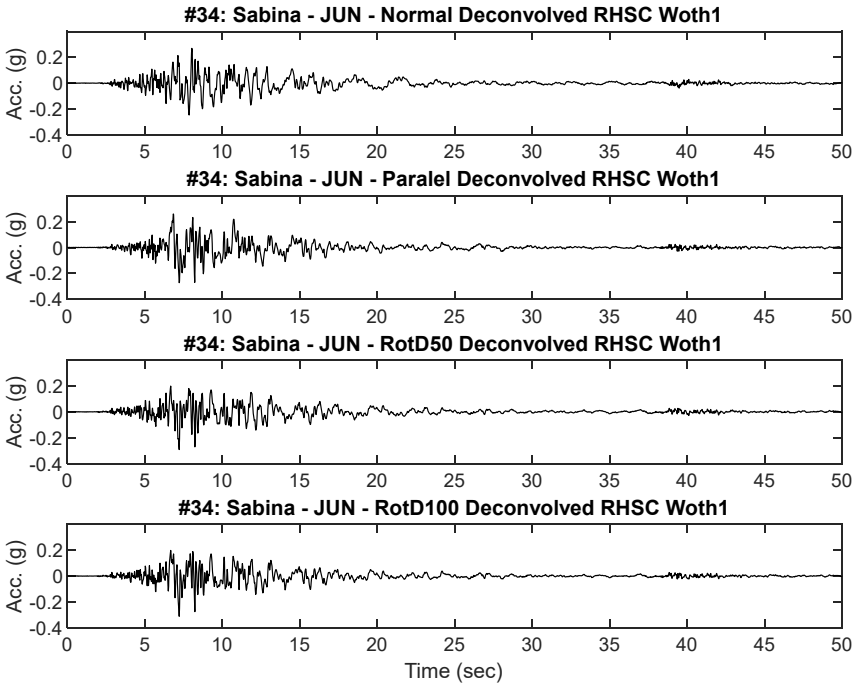


Figure B34.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



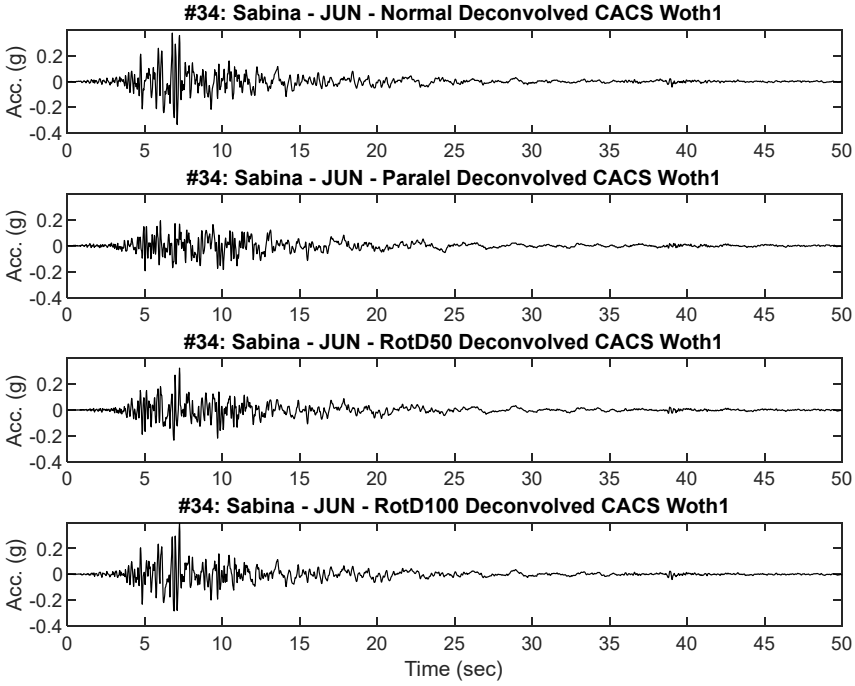


Figure B34.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

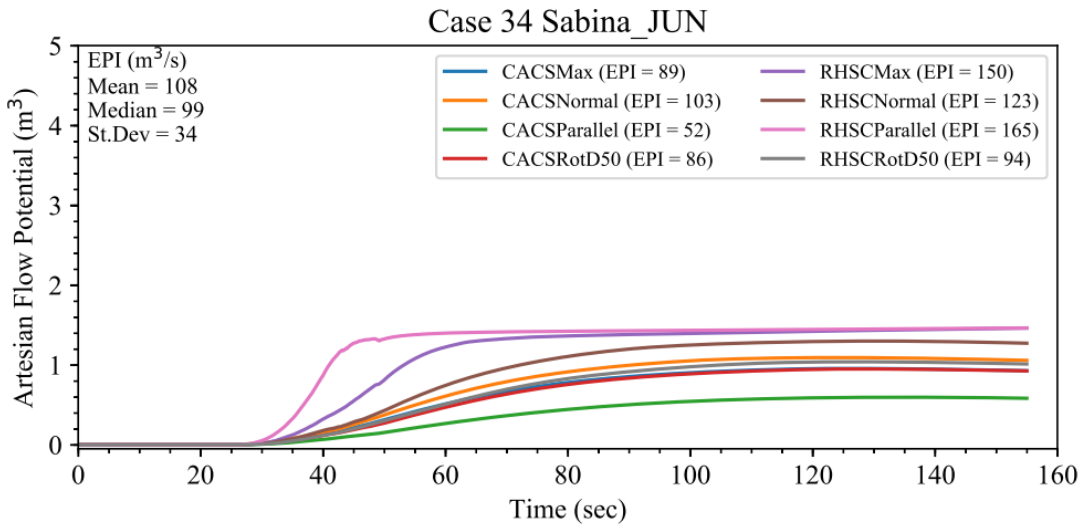


Figure B34.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

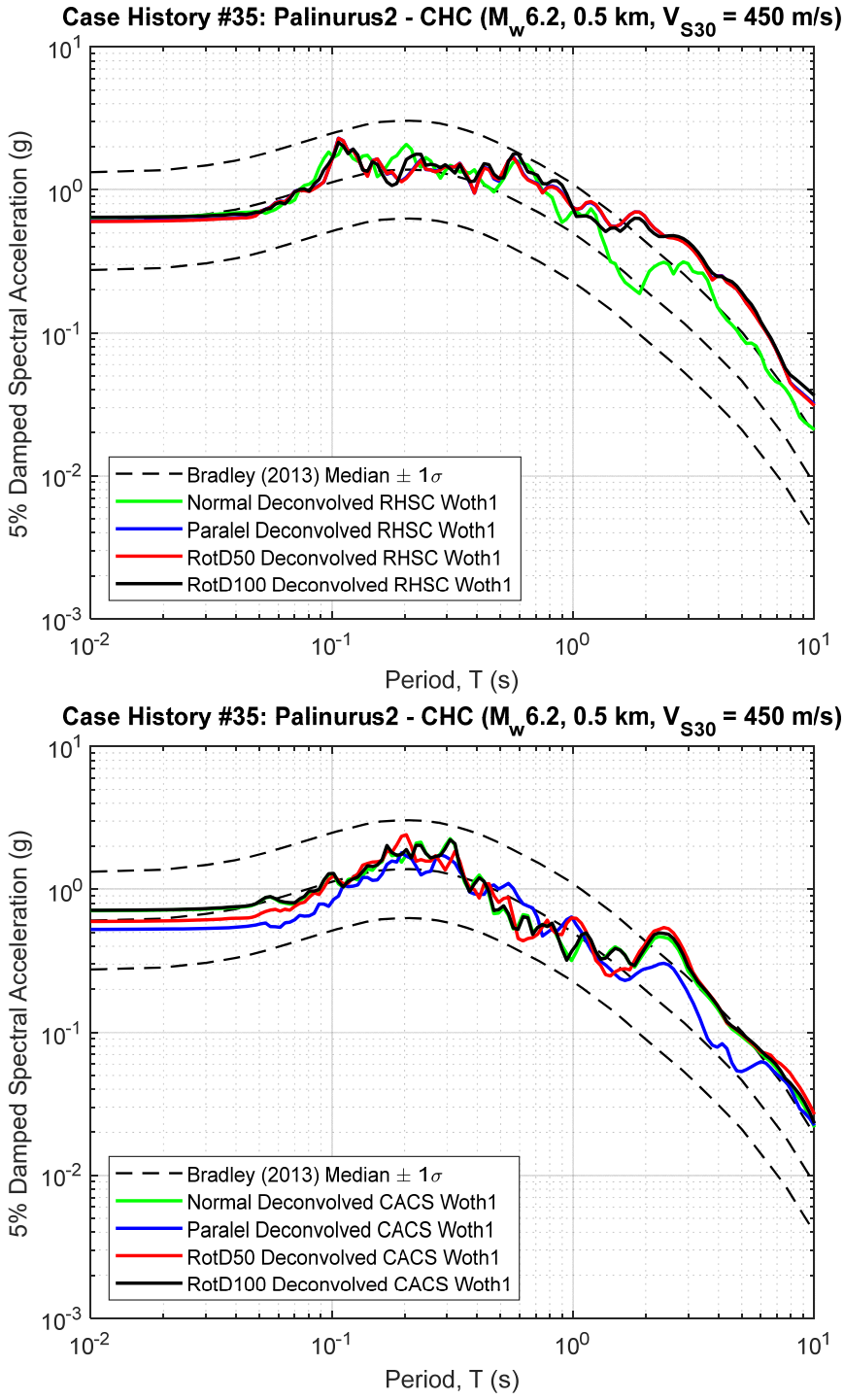


Figure B35.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

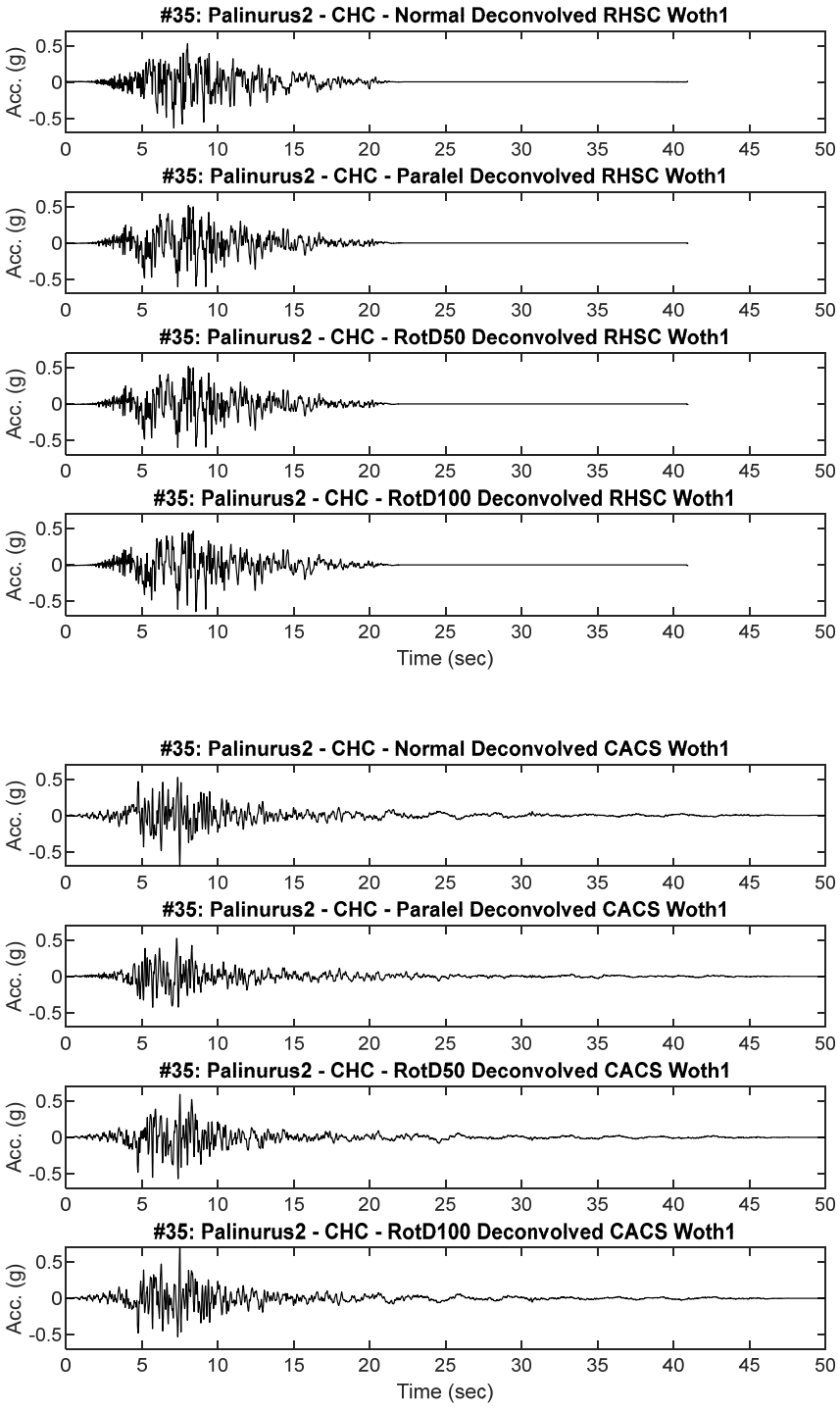


Figure B35.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

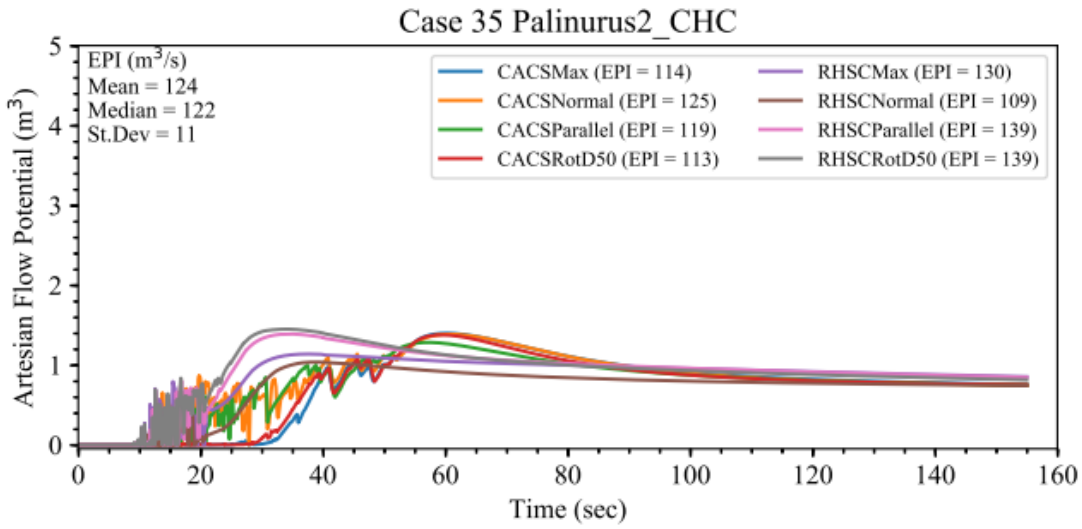


Figure B35.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

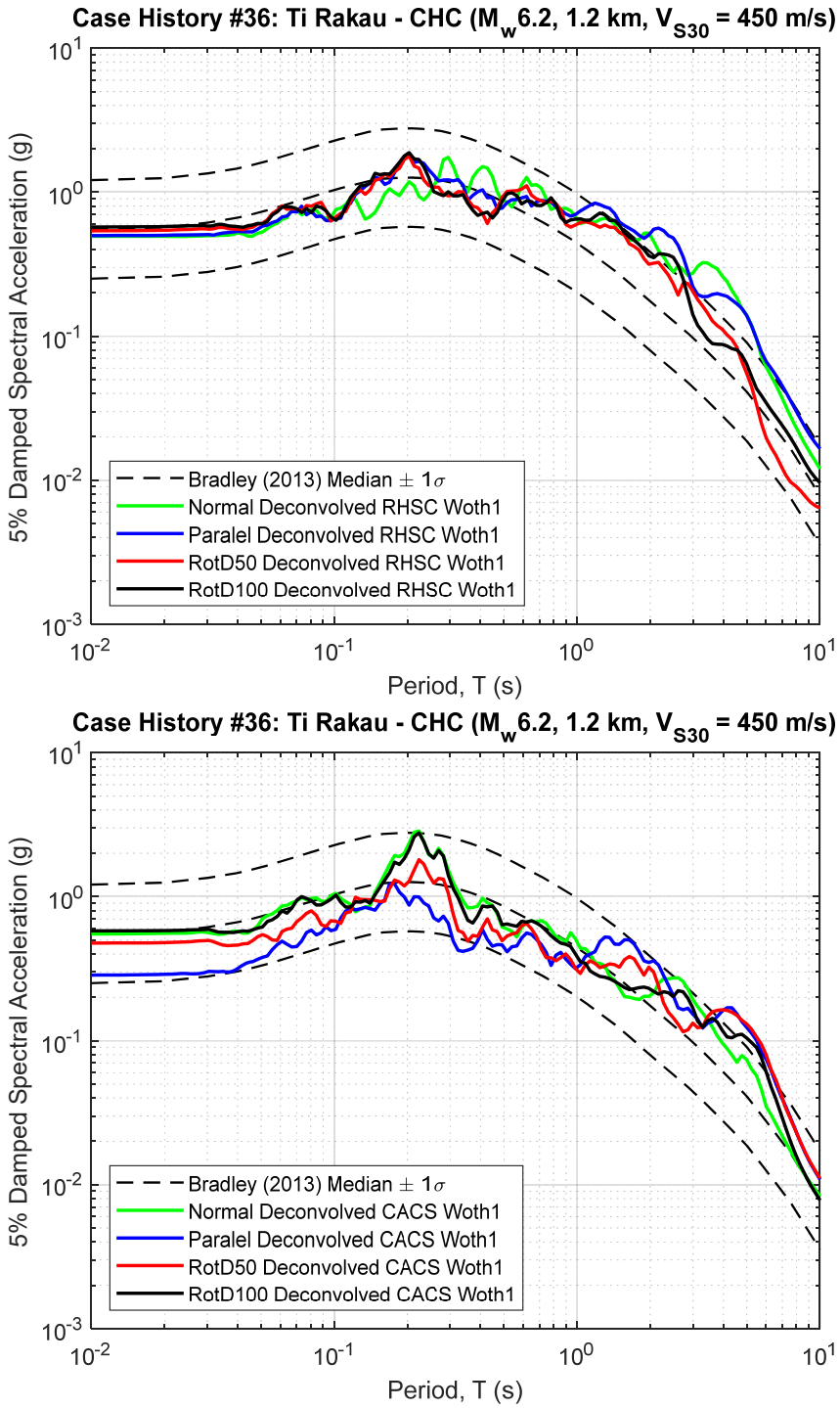
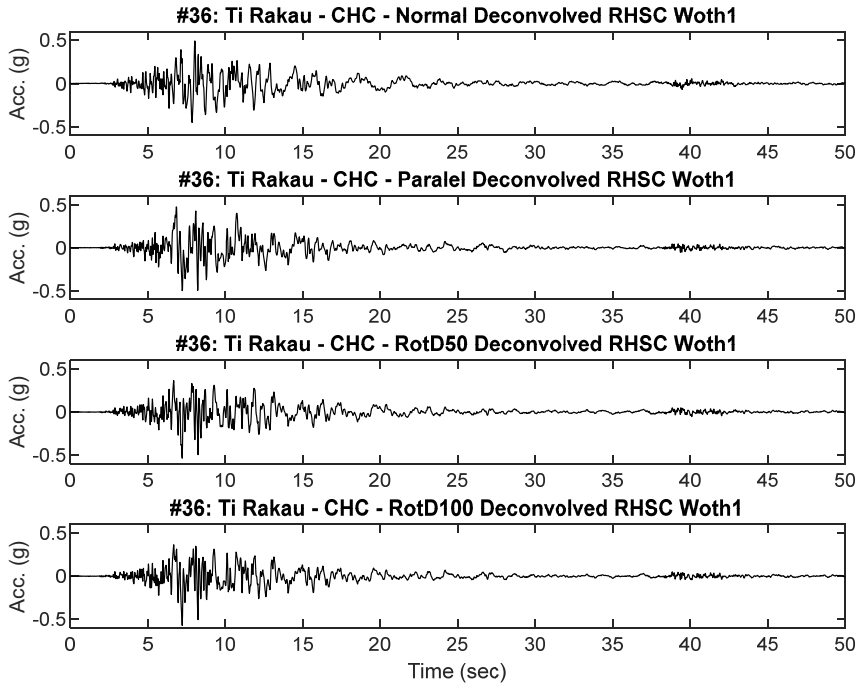


Figure B36.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



5

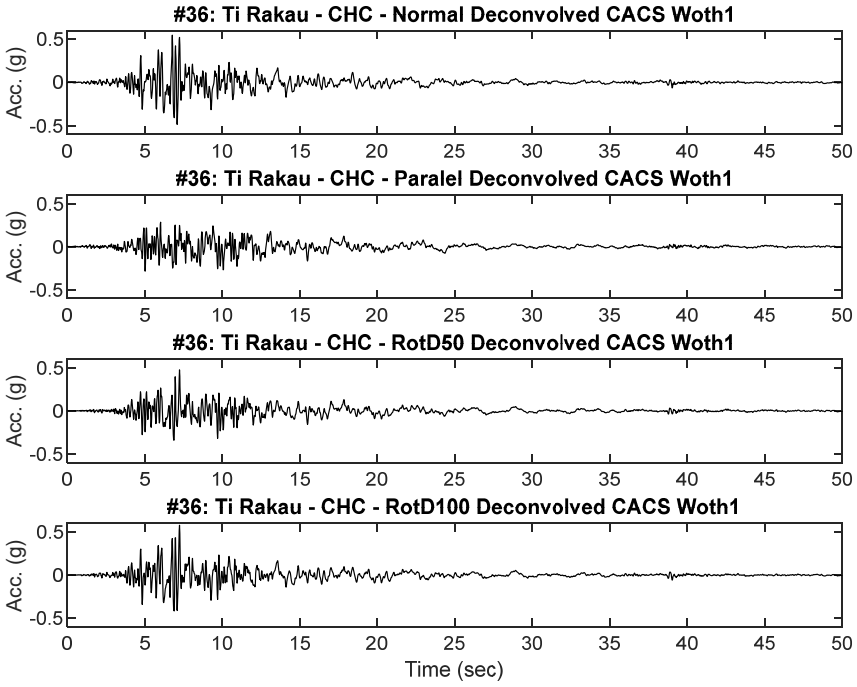


Figure B36.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

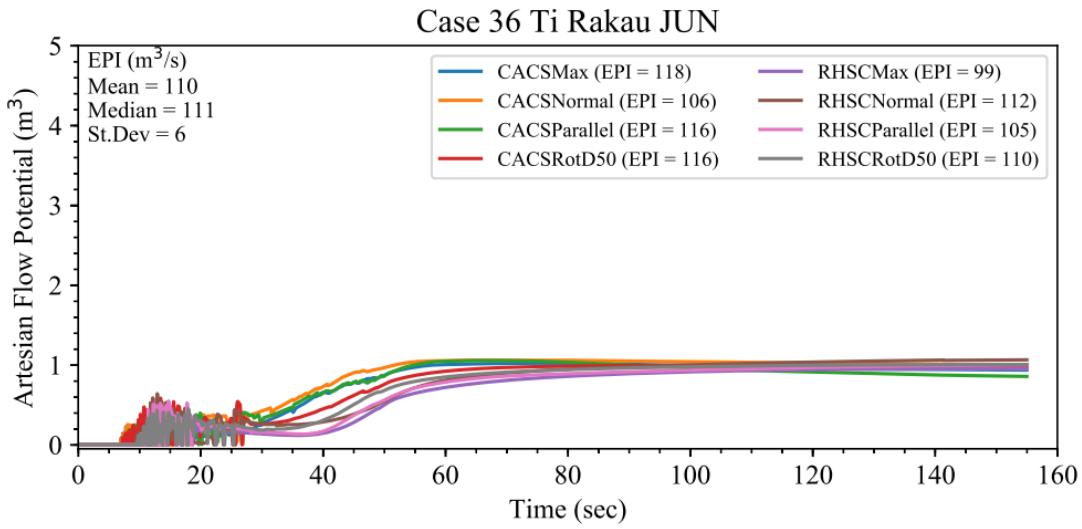


Figure B36.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #37: Palinurus2-JUN (M_w6.2, R_{rup} 1.9 km, Riccarton Gravel V_{S30} = 450 m/s)

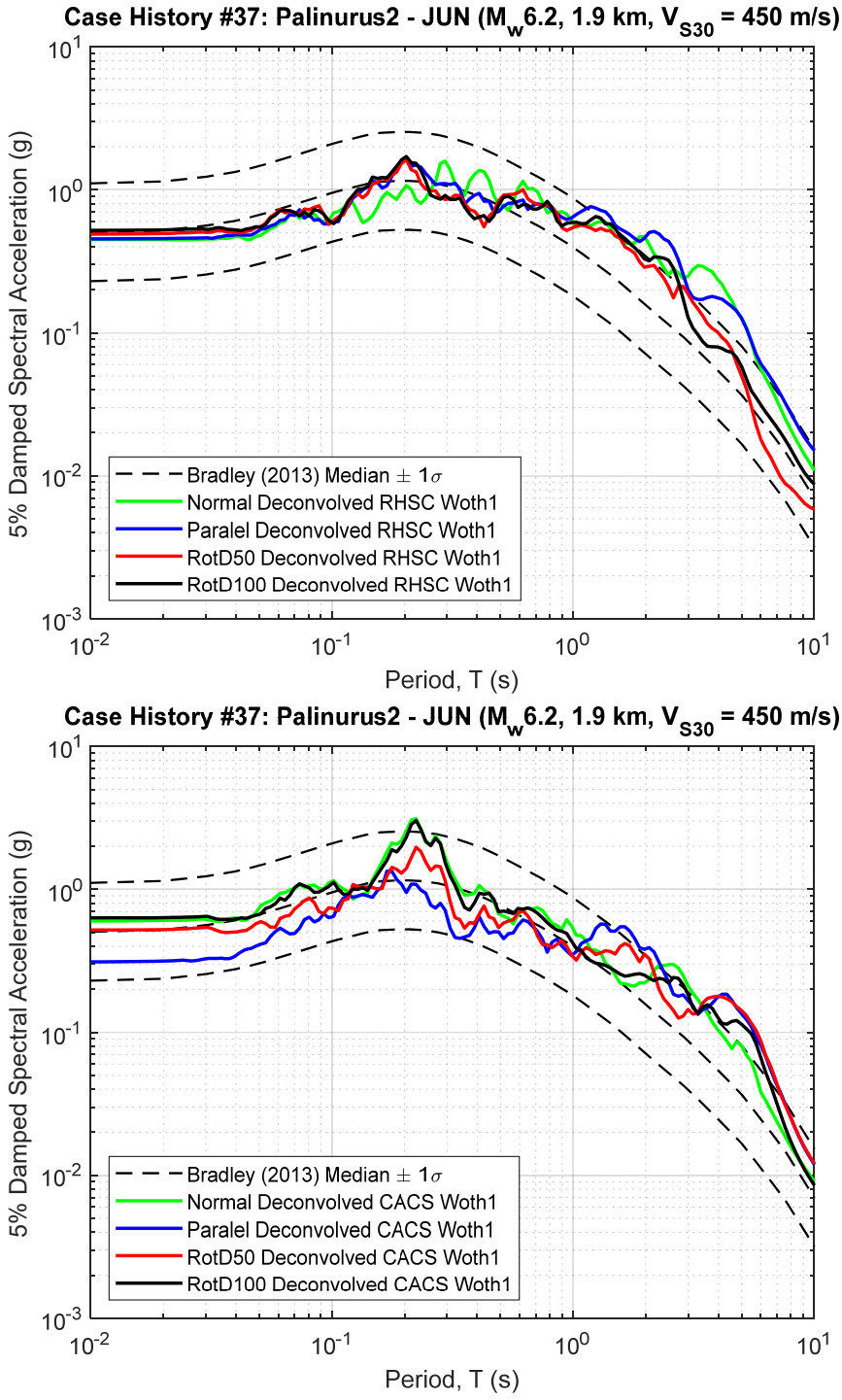


Figure B37.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

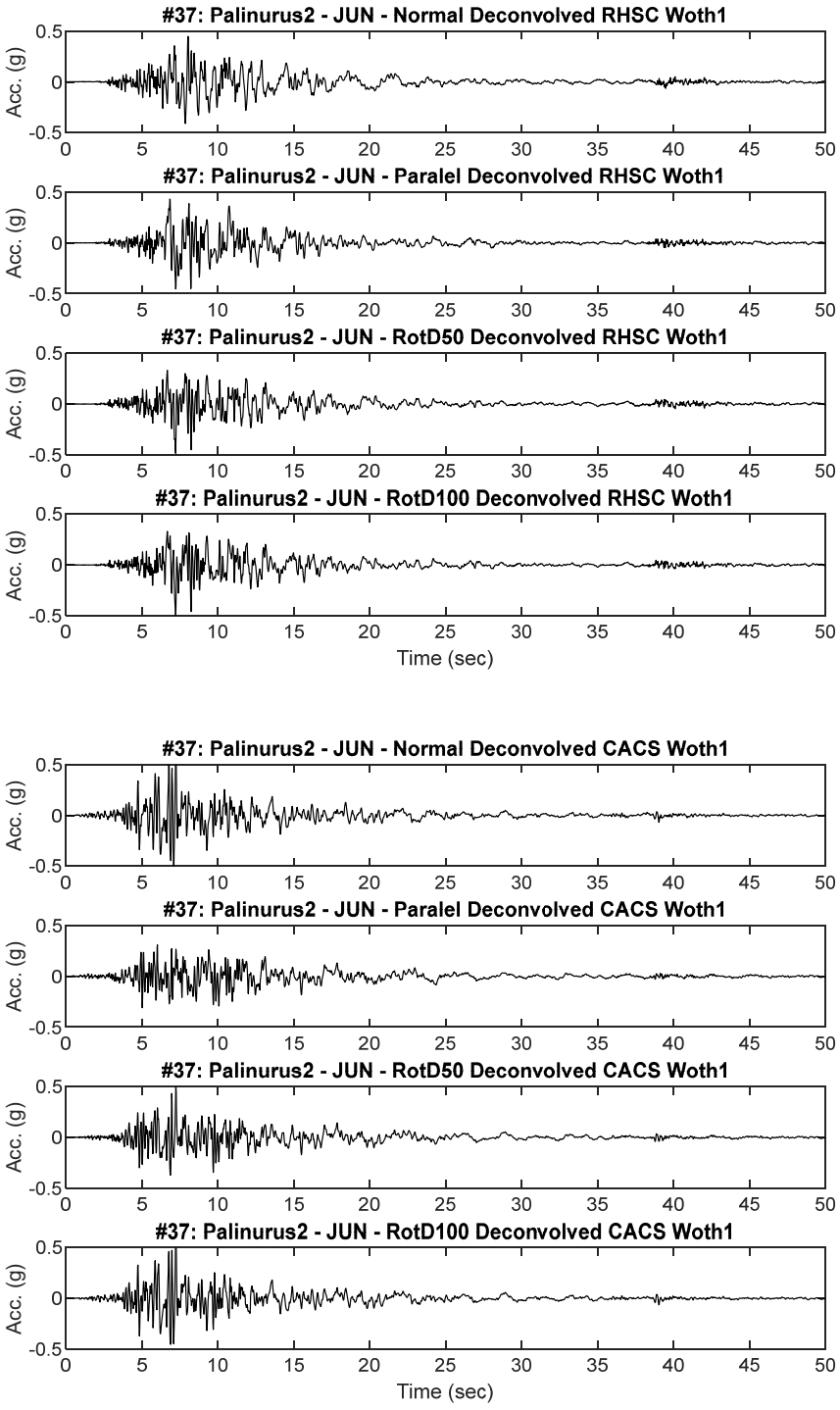


Figure B37.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

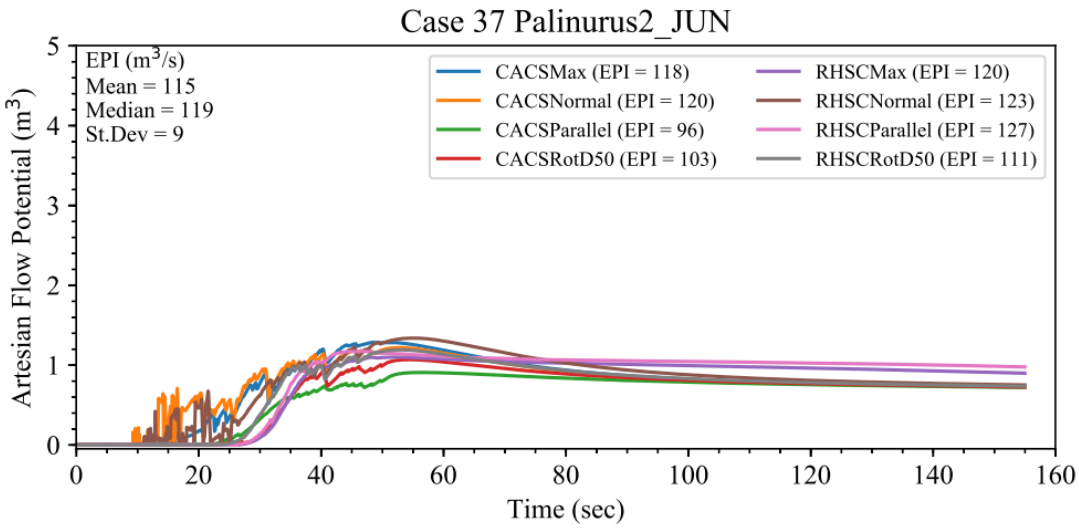


Figure B37.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

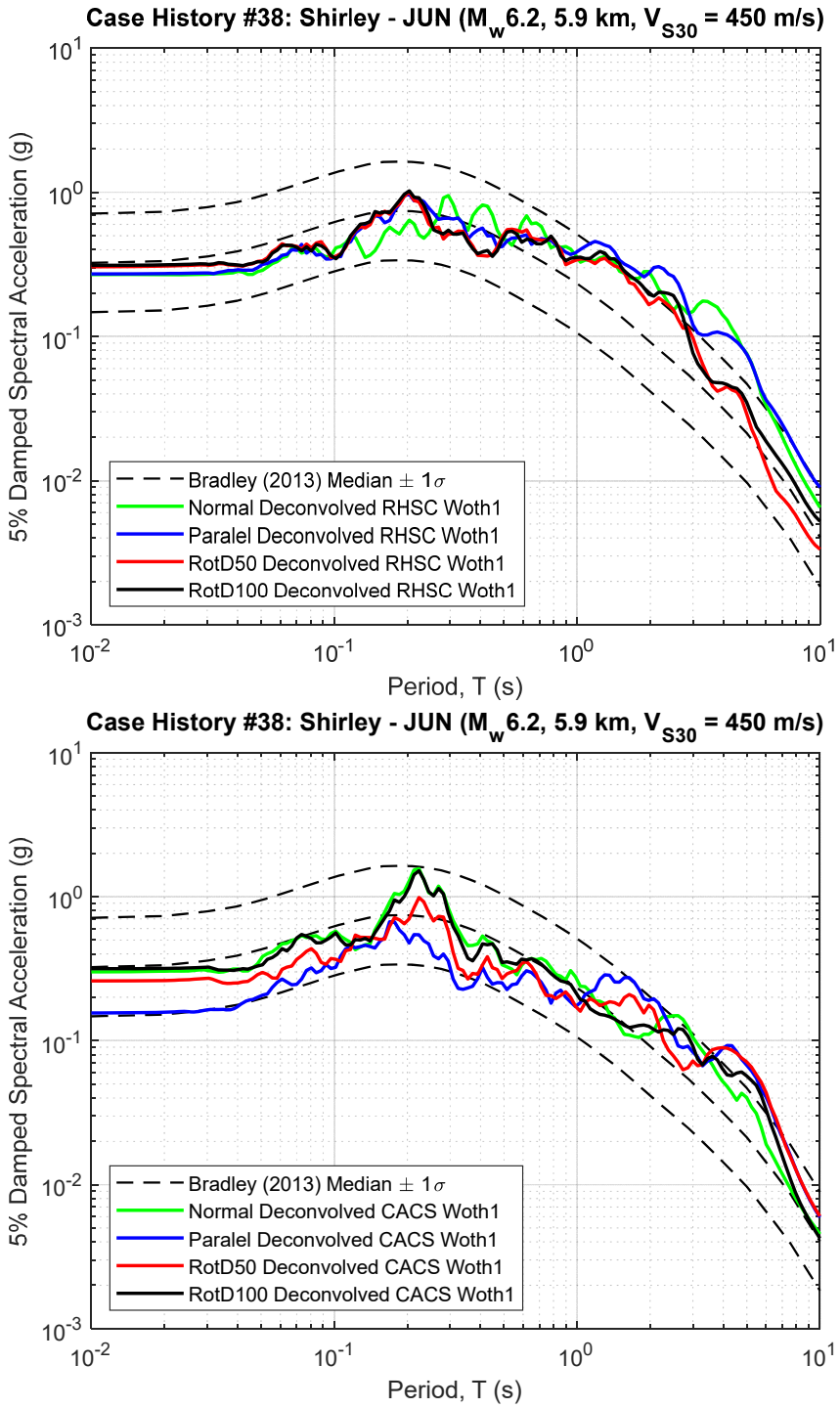
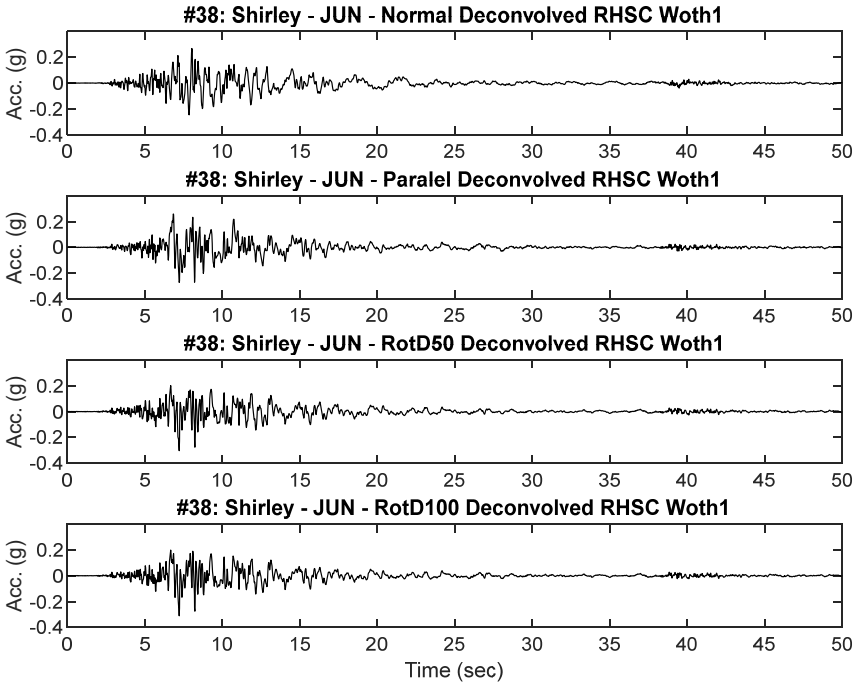


Figure B38.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)



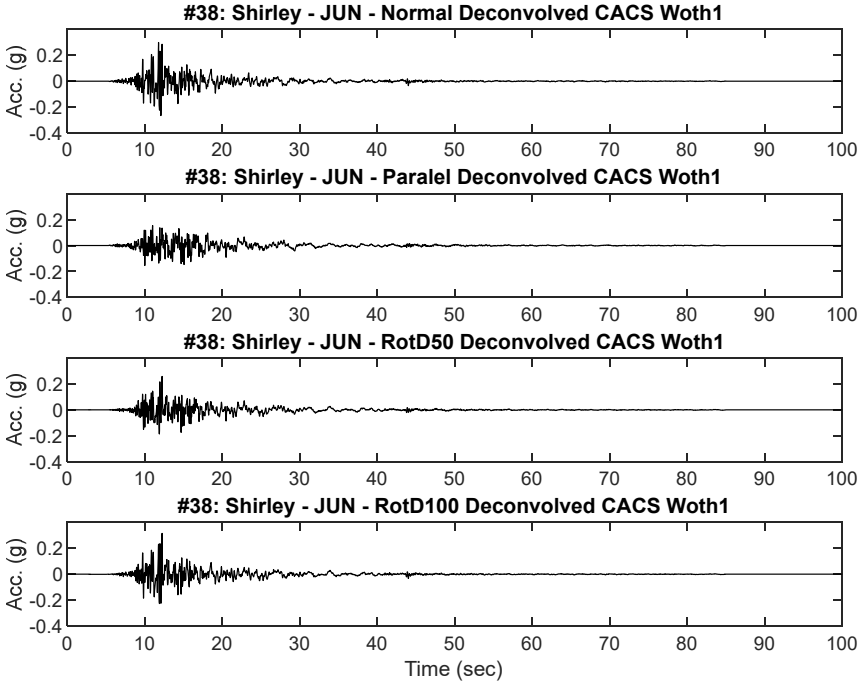


Figure B38.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

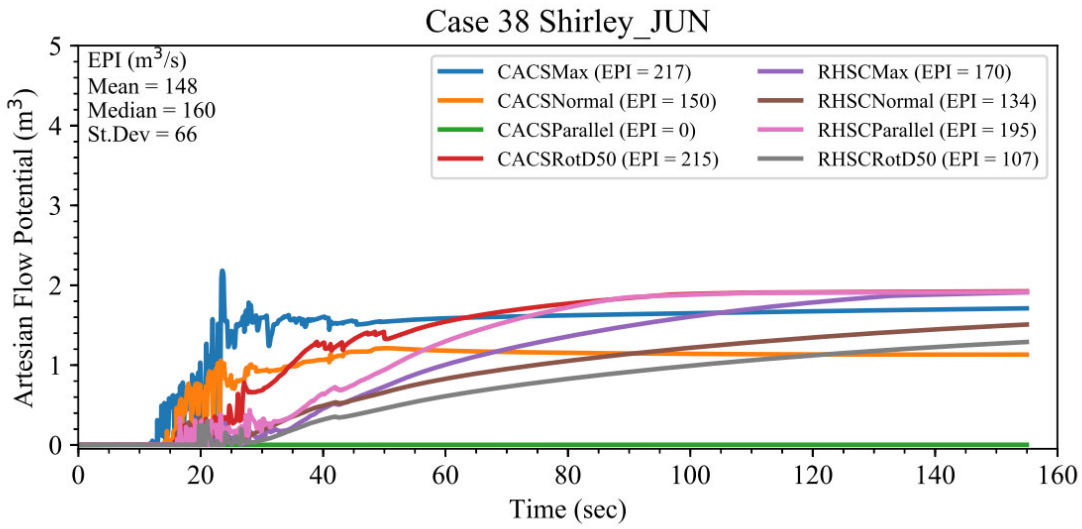


Figure B38.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

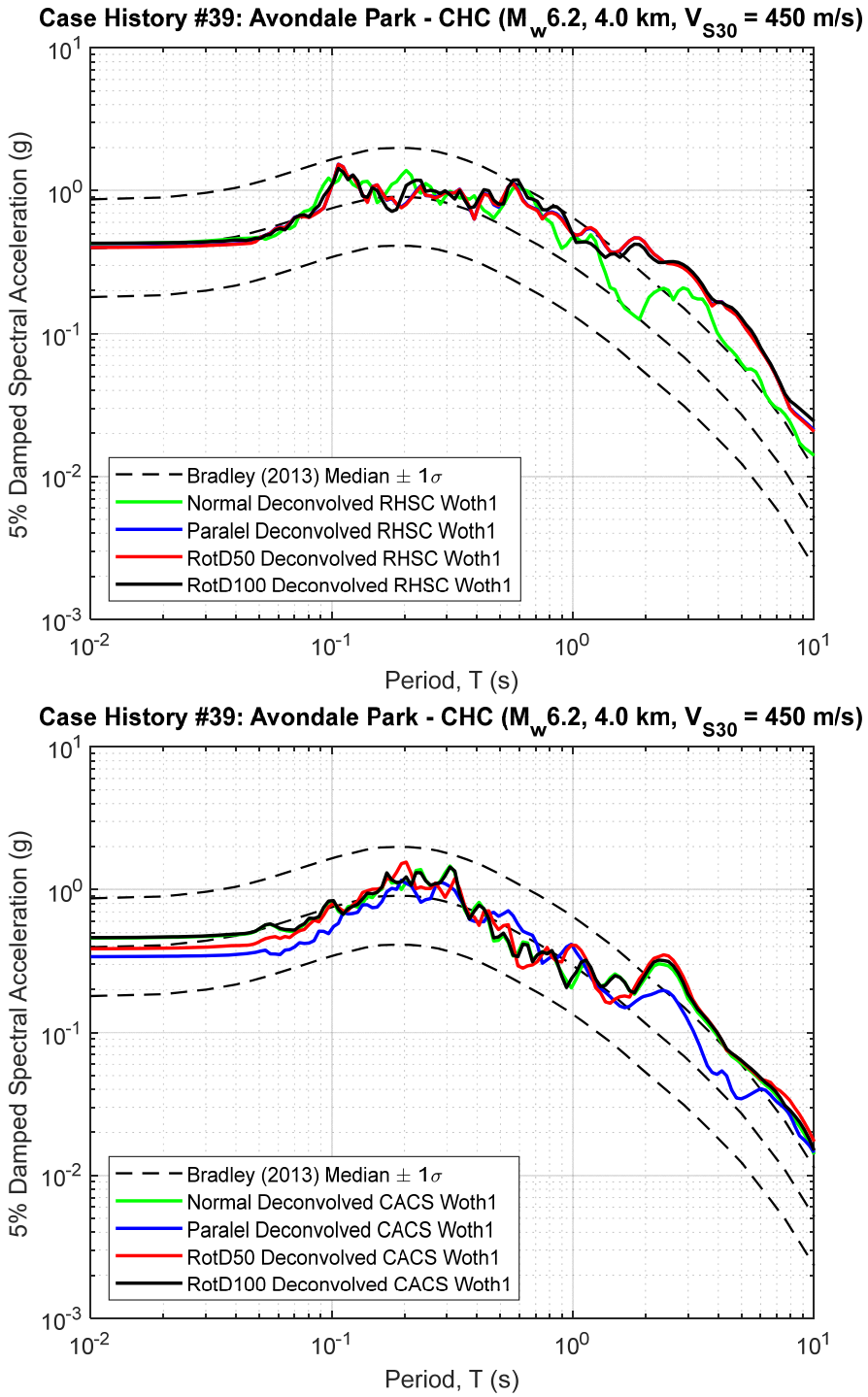


Figure B39.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

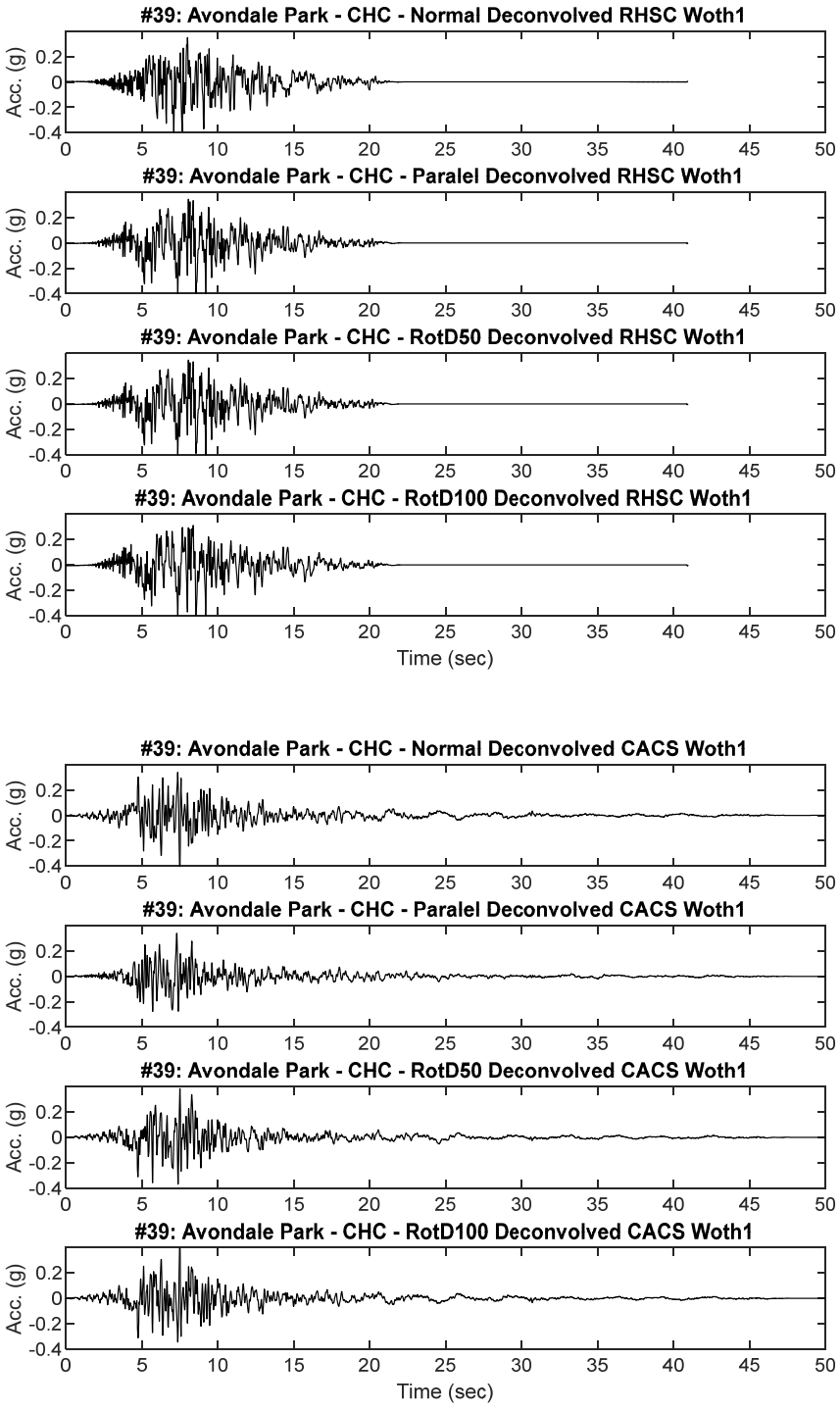


Figure B39.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

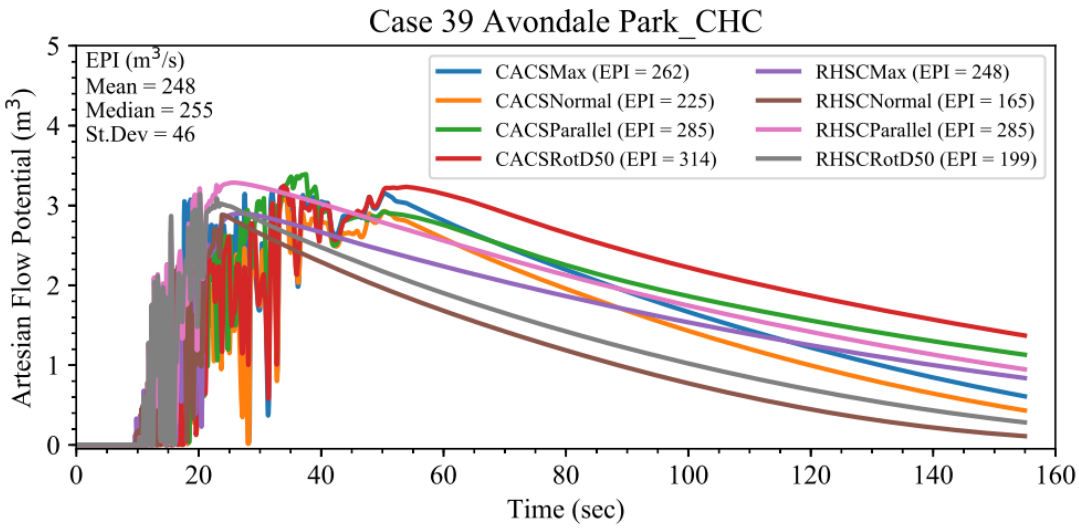


Figure B39.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #40: Ti Rakau-CHC (M_w6.2, R_{rup} 0.5 km, Riccarton Gravel V_{S30} = 450 m/s)

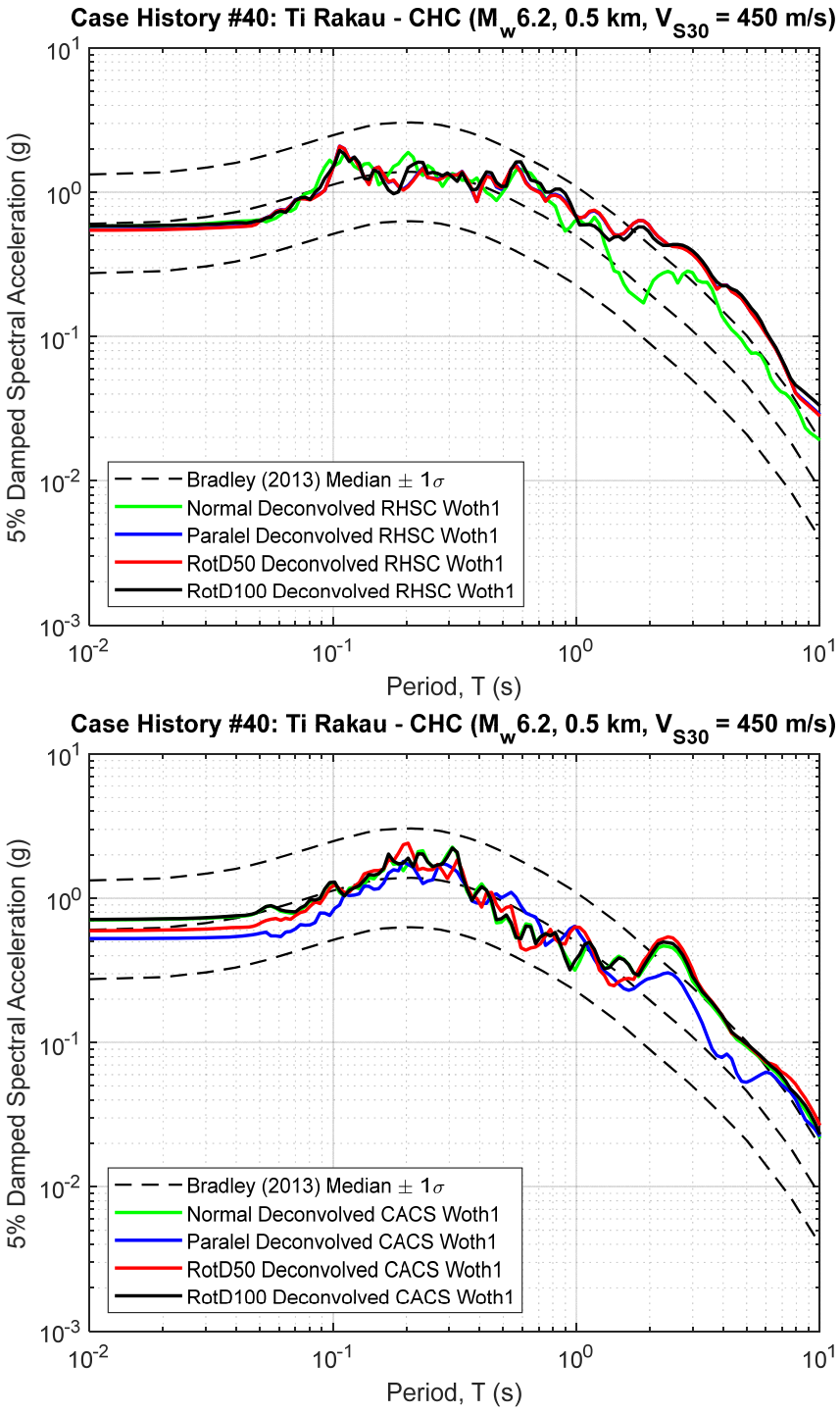


Figure B40.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

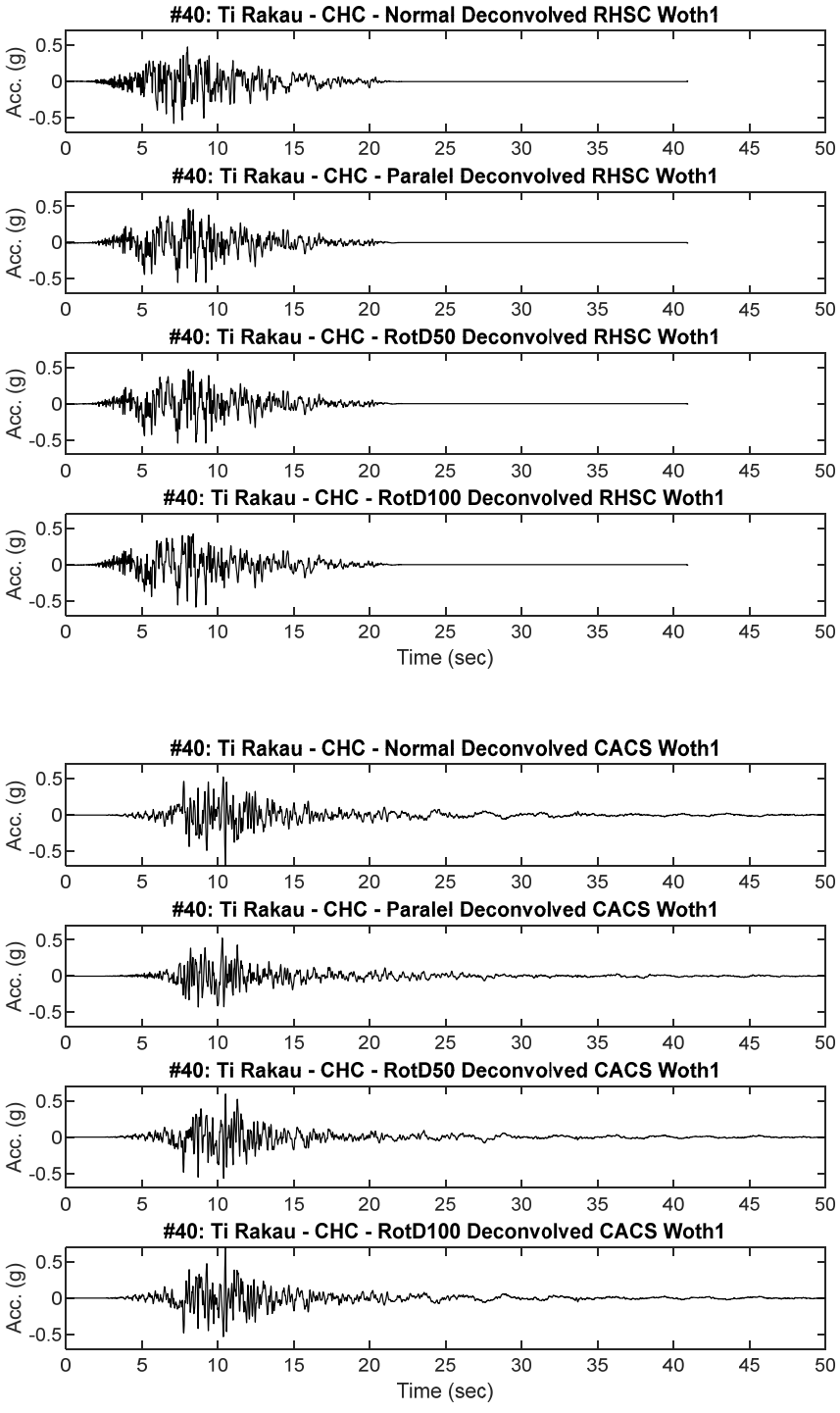


Figure B40.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

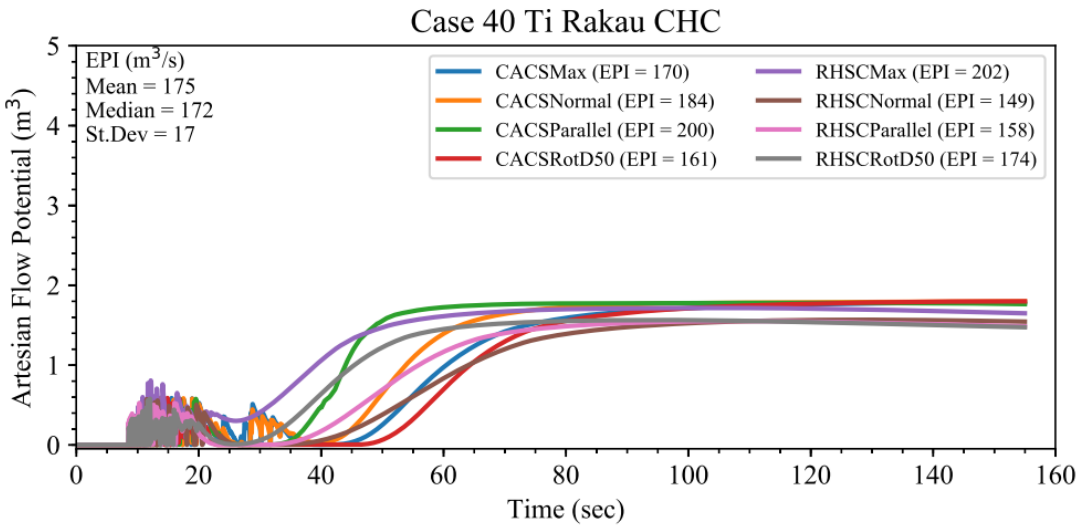


Figure B40.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

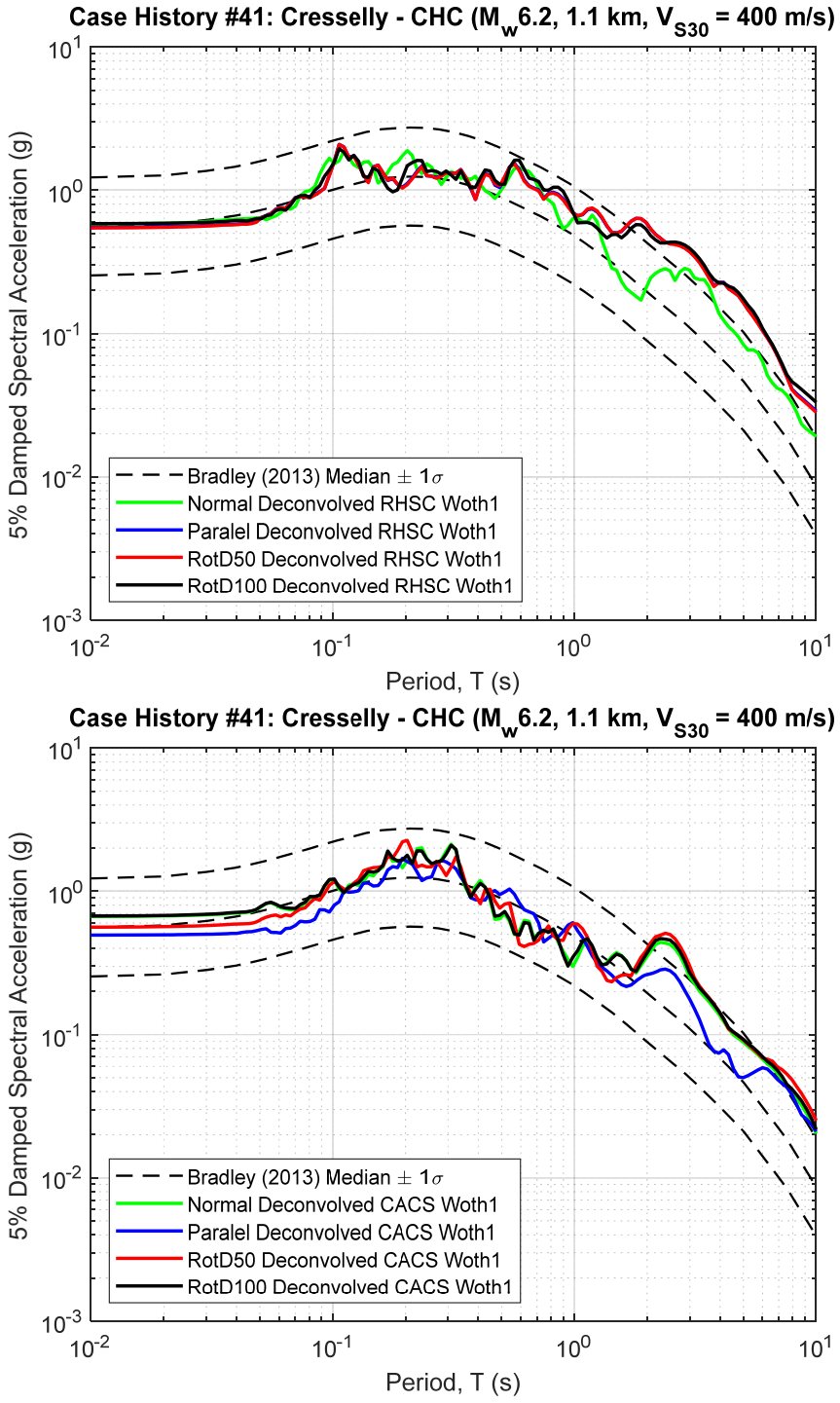


Figure B41.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

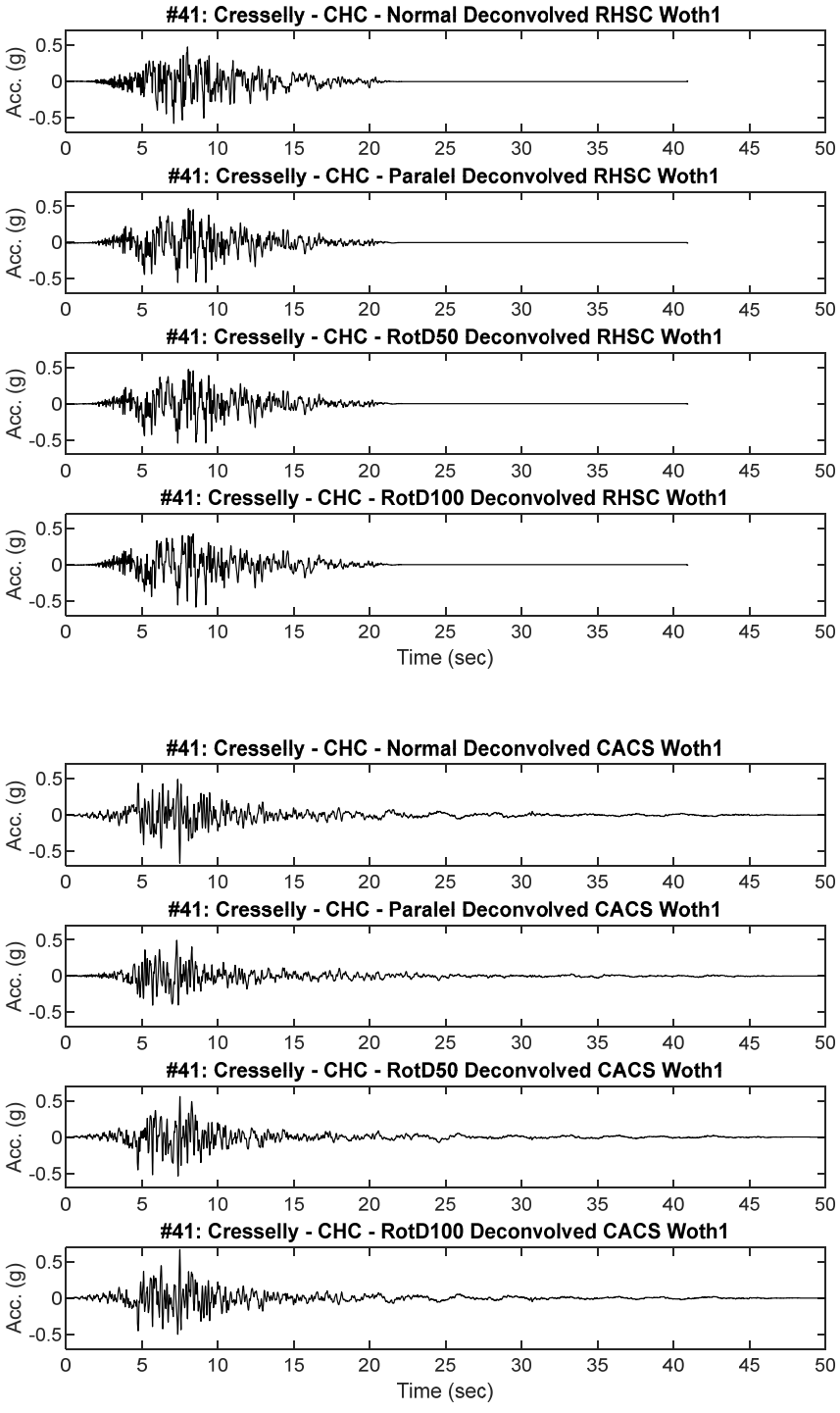


Figure B41.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

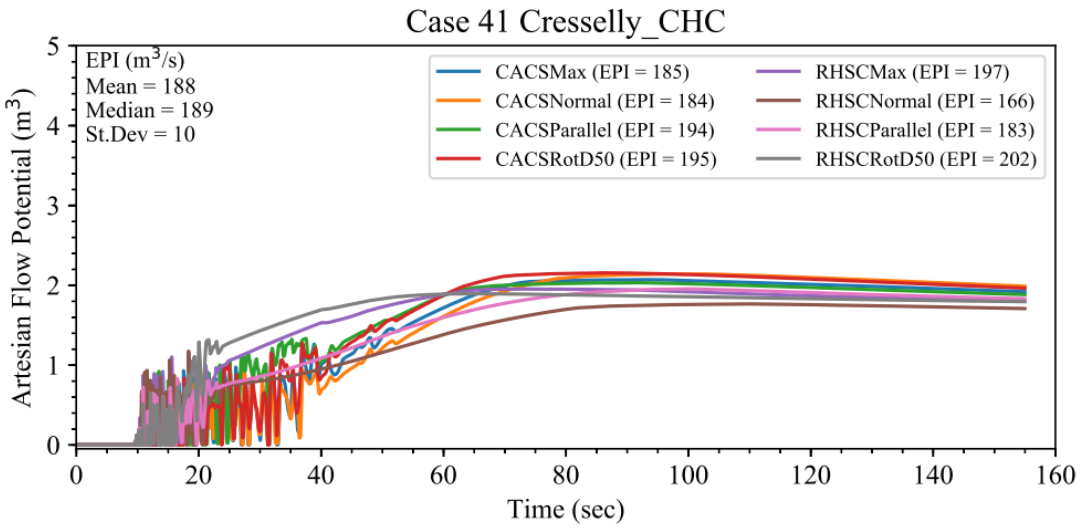
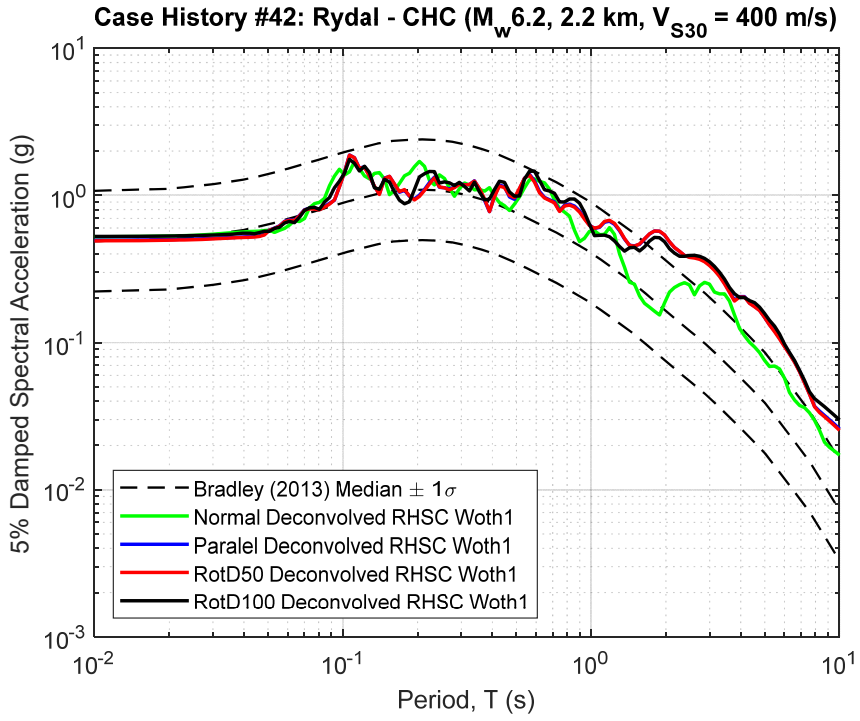


Figure B41.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.



5

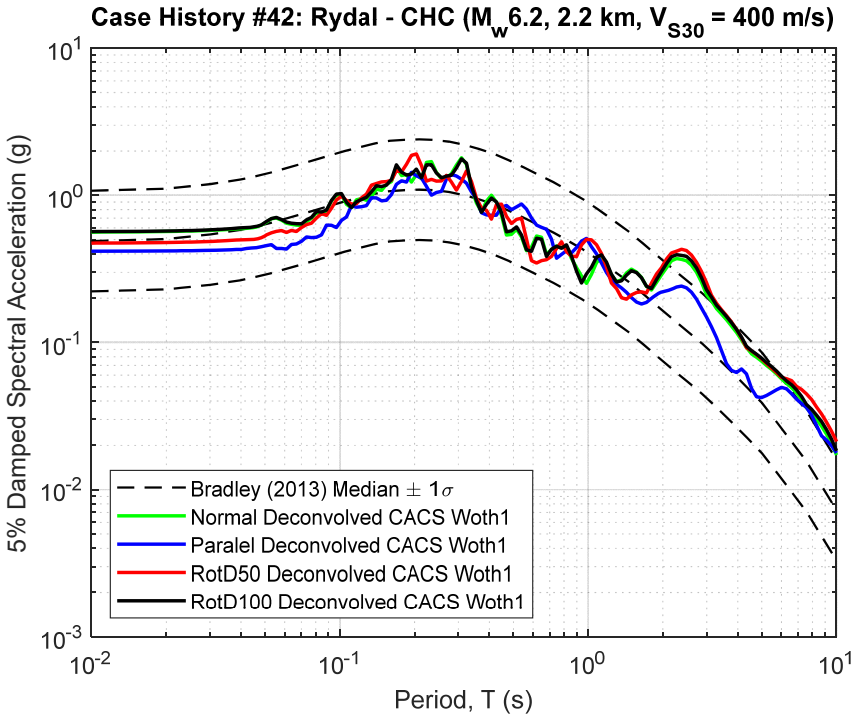


Figure B42.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

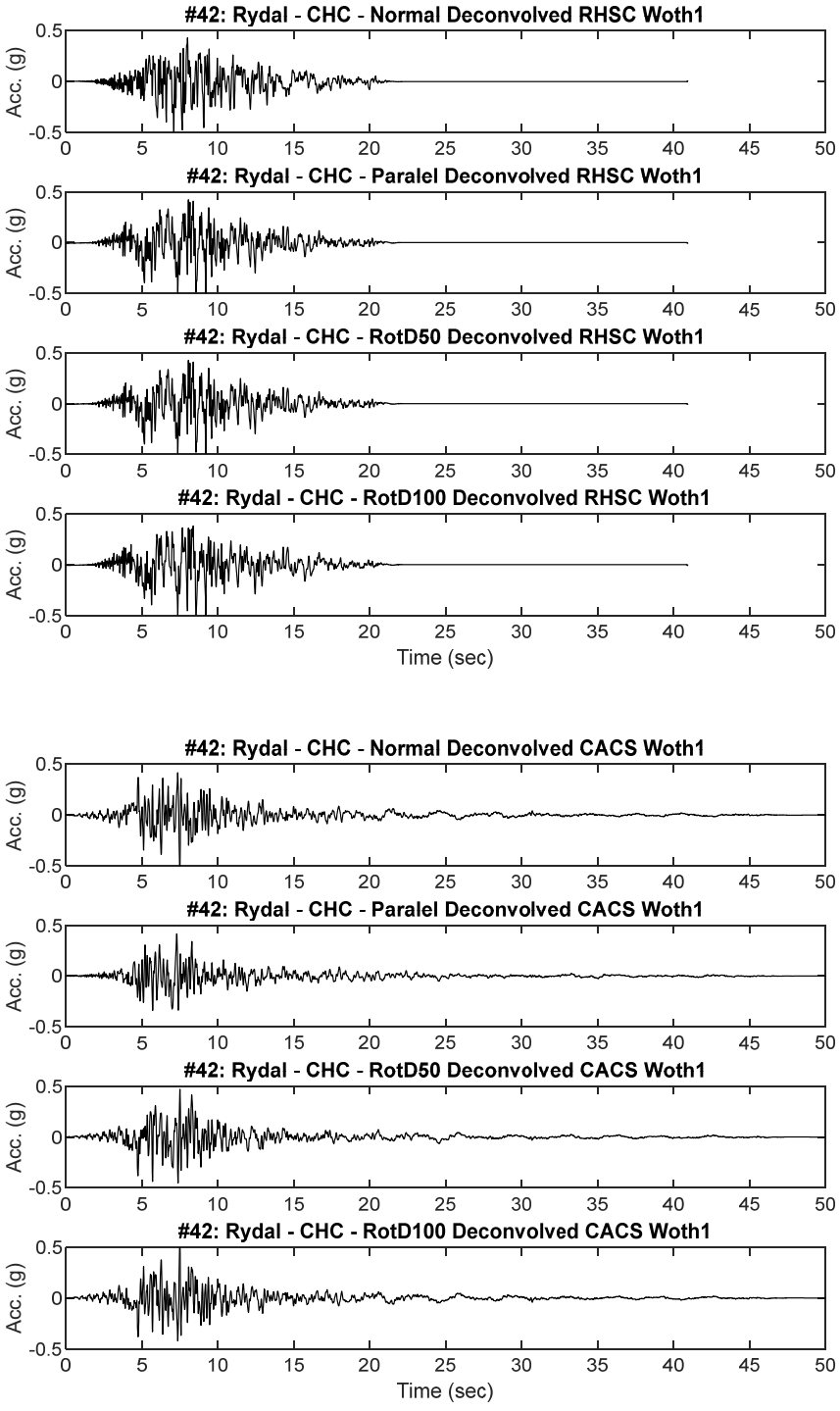


Figure B42.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

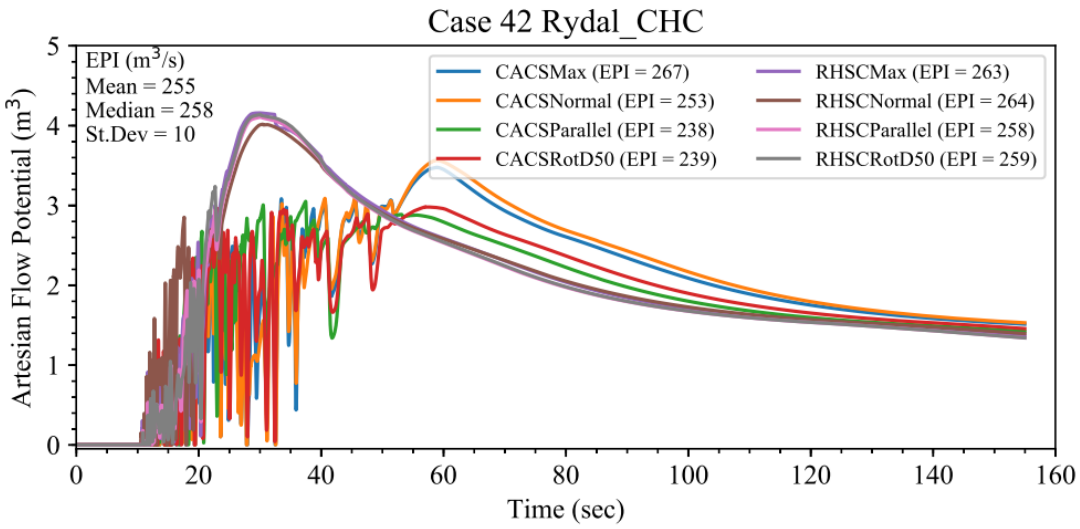


Figure B42.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

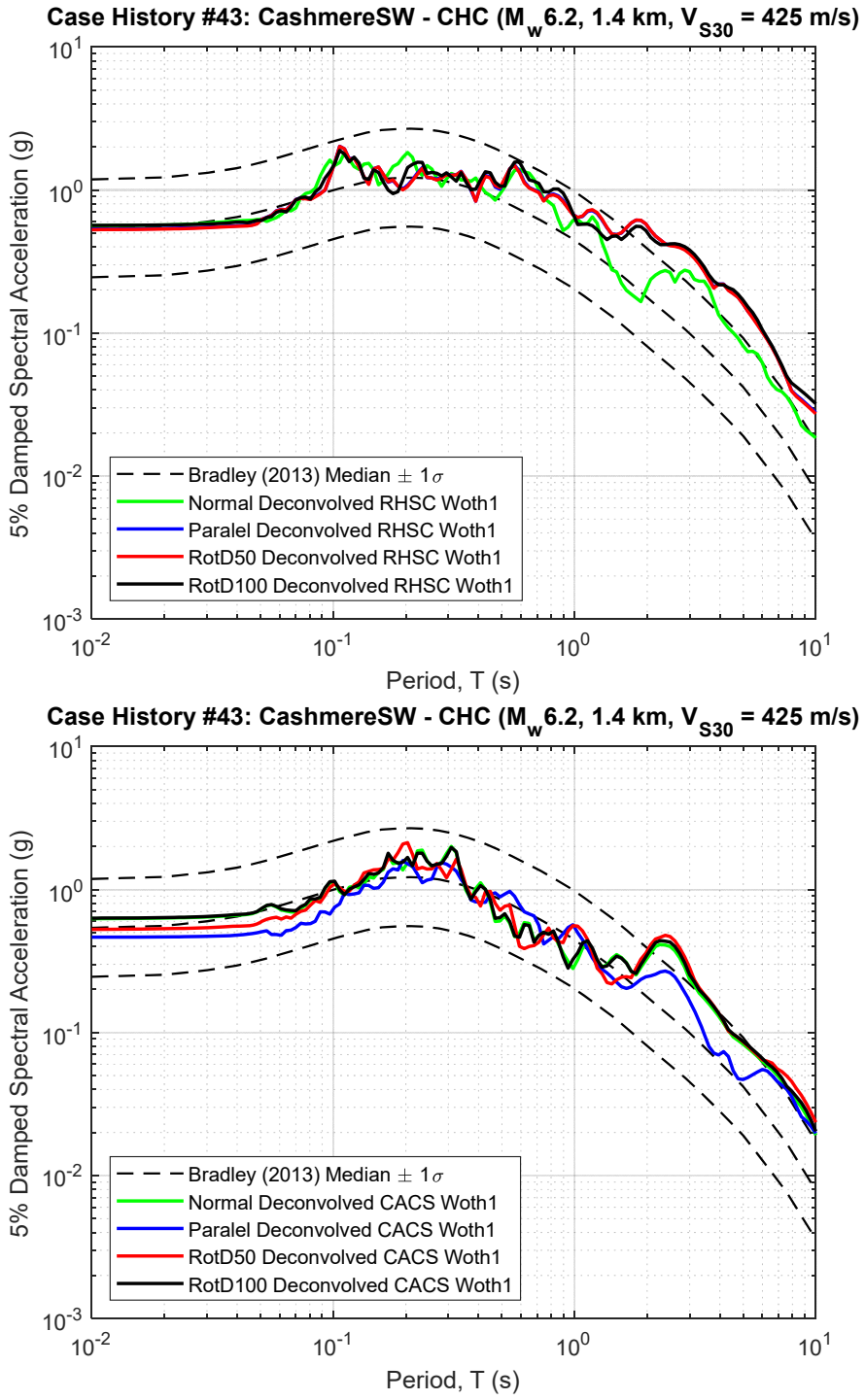


Figure B43.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

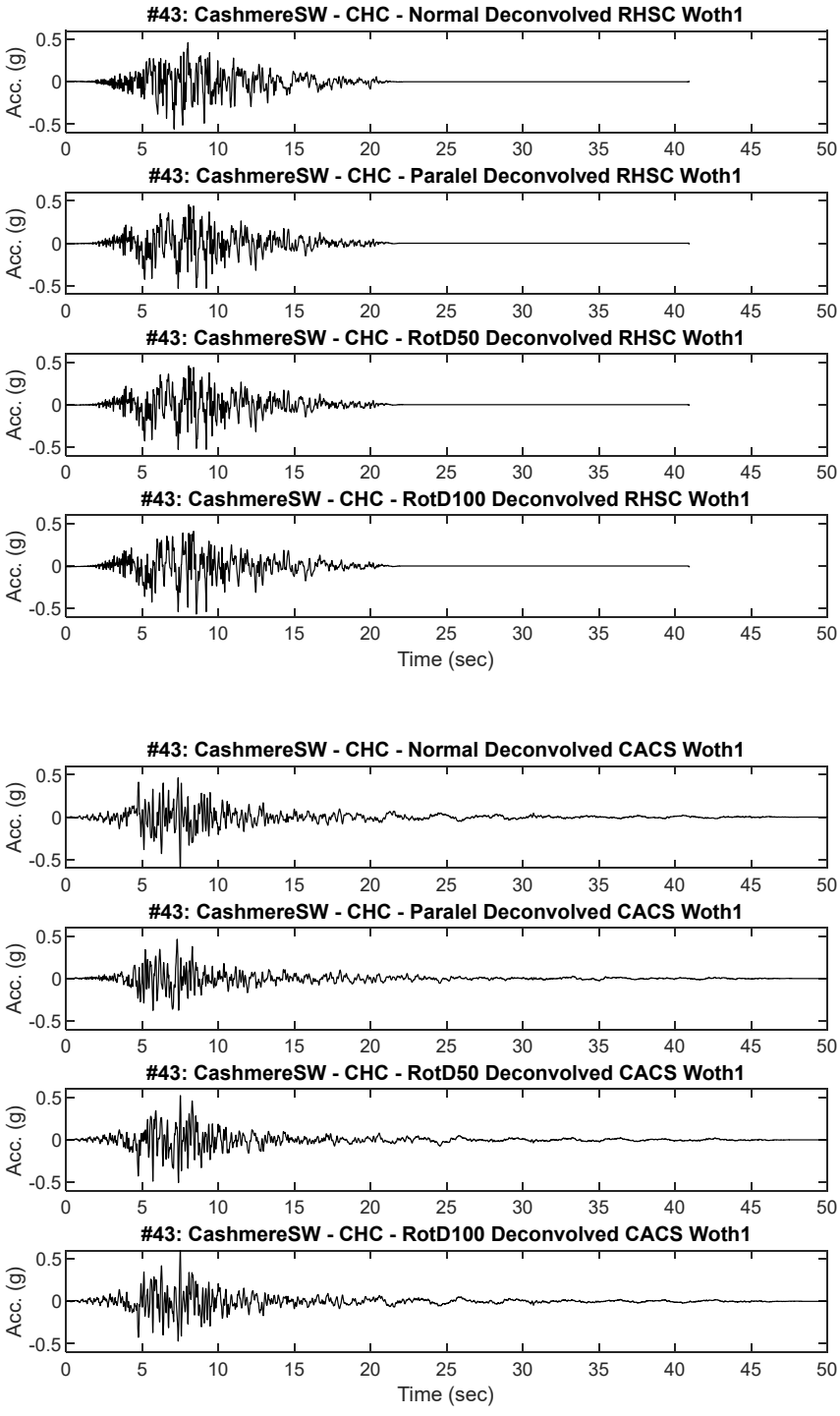


Figure B43.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

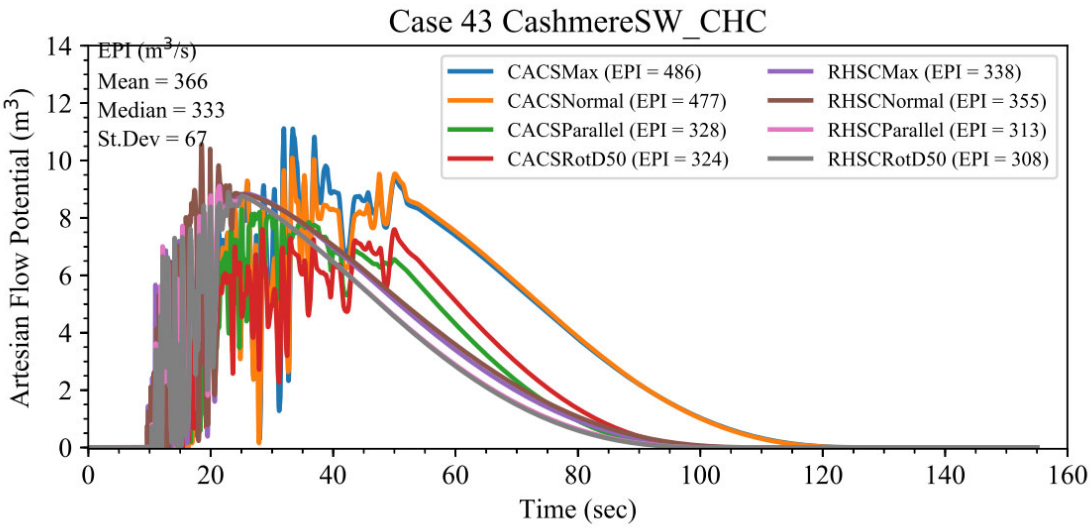


Figure B43.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

Case History #44: Port Island-KOB (M_w6.2, R_{rup} 4.7 km)

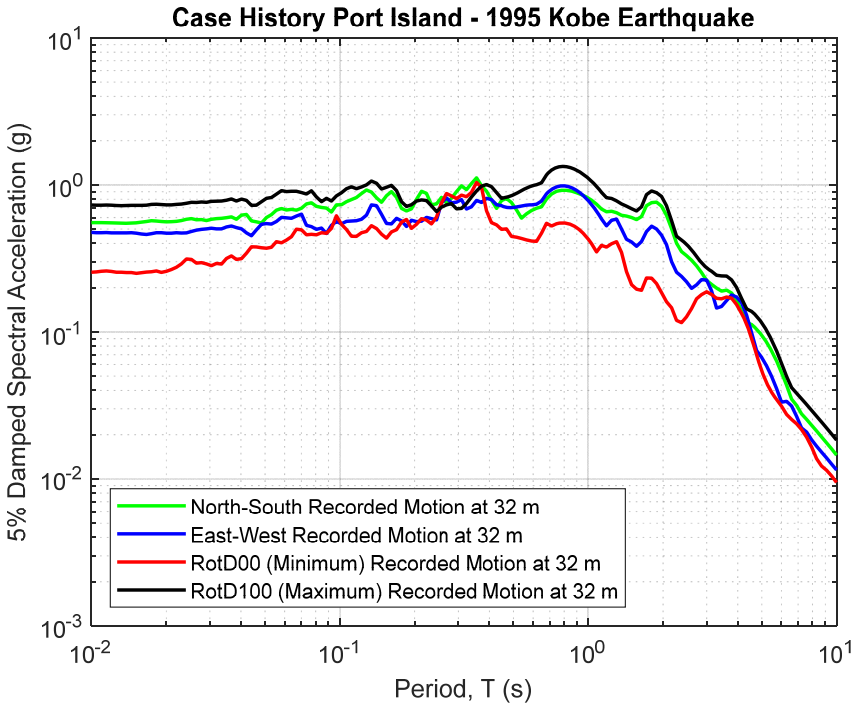


Figure B44.1 5% Damped Response Spectra of input ground motion for Port Island

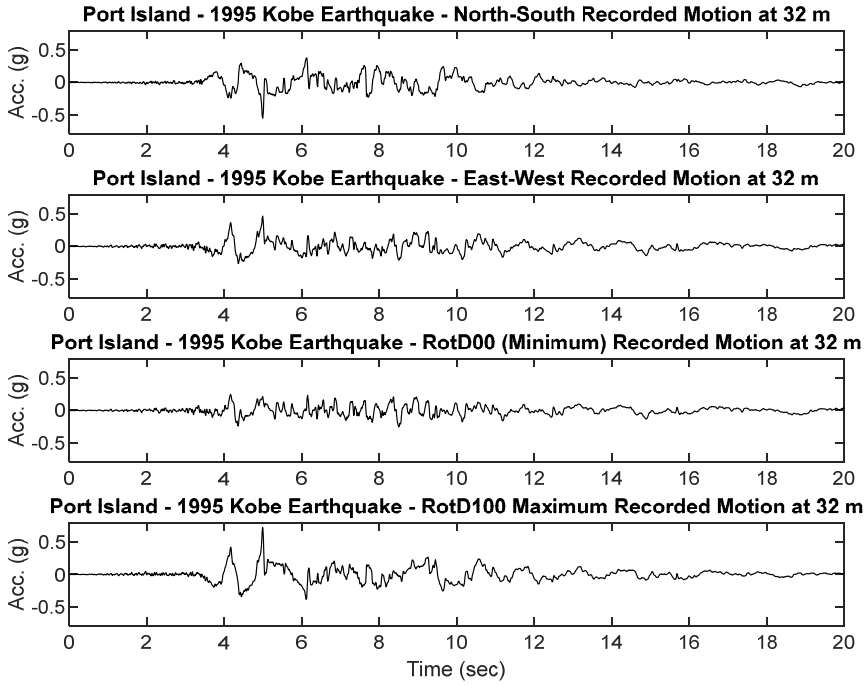


Figure B44.2 Acceleartion time histories of Port Island Input Ground Motion

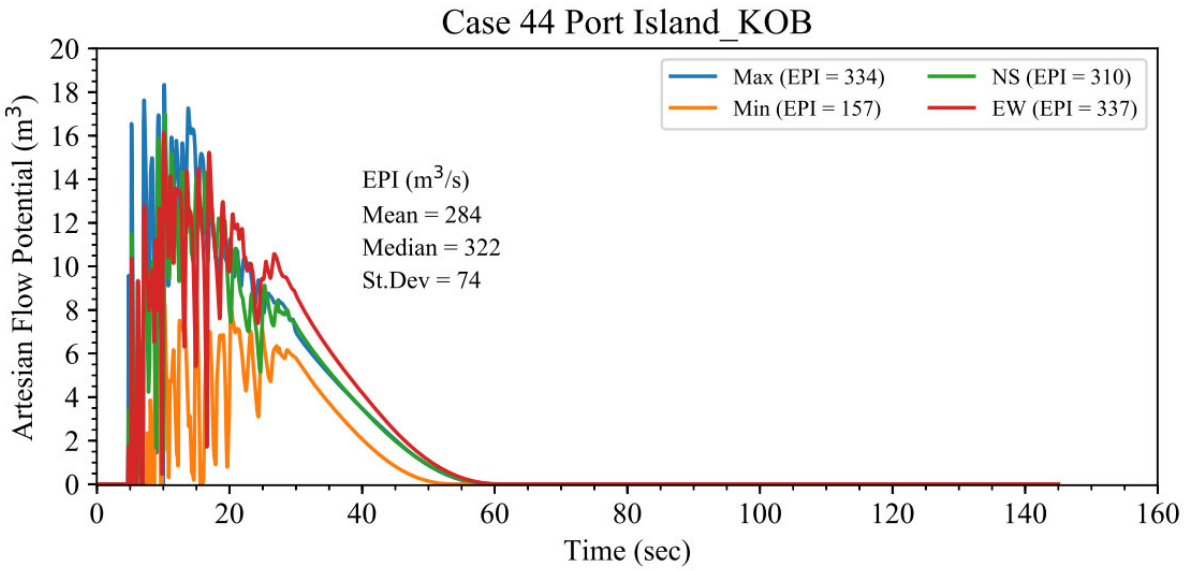


Figure B44.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.

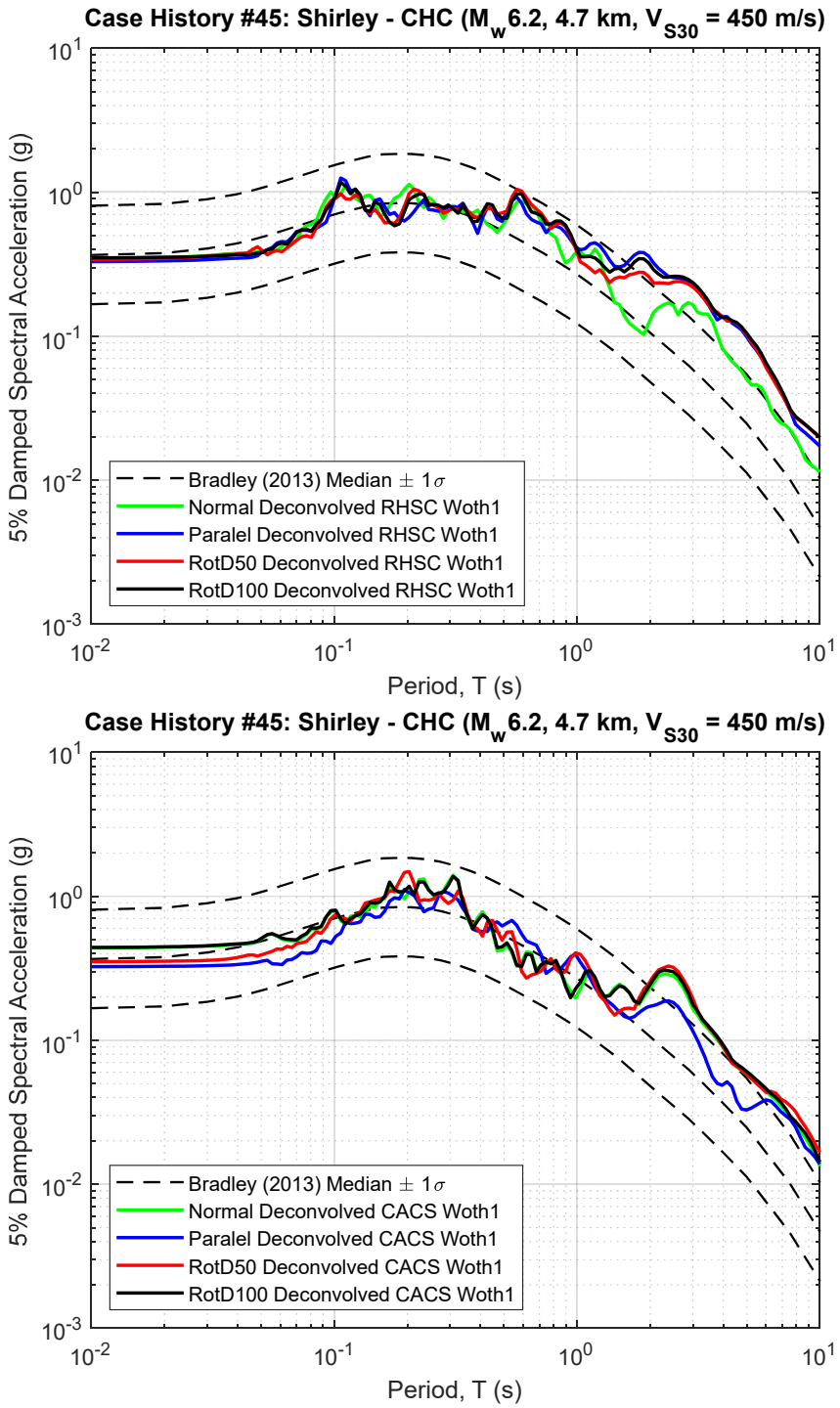


Figure B45.1 5% Damped Response Spectra of RHSC and CACS Deconvolved Input Motion at Riccarton Gravel (multiplied by the scaling factor to represent the R_{rup} and V_{S30} of studied site)

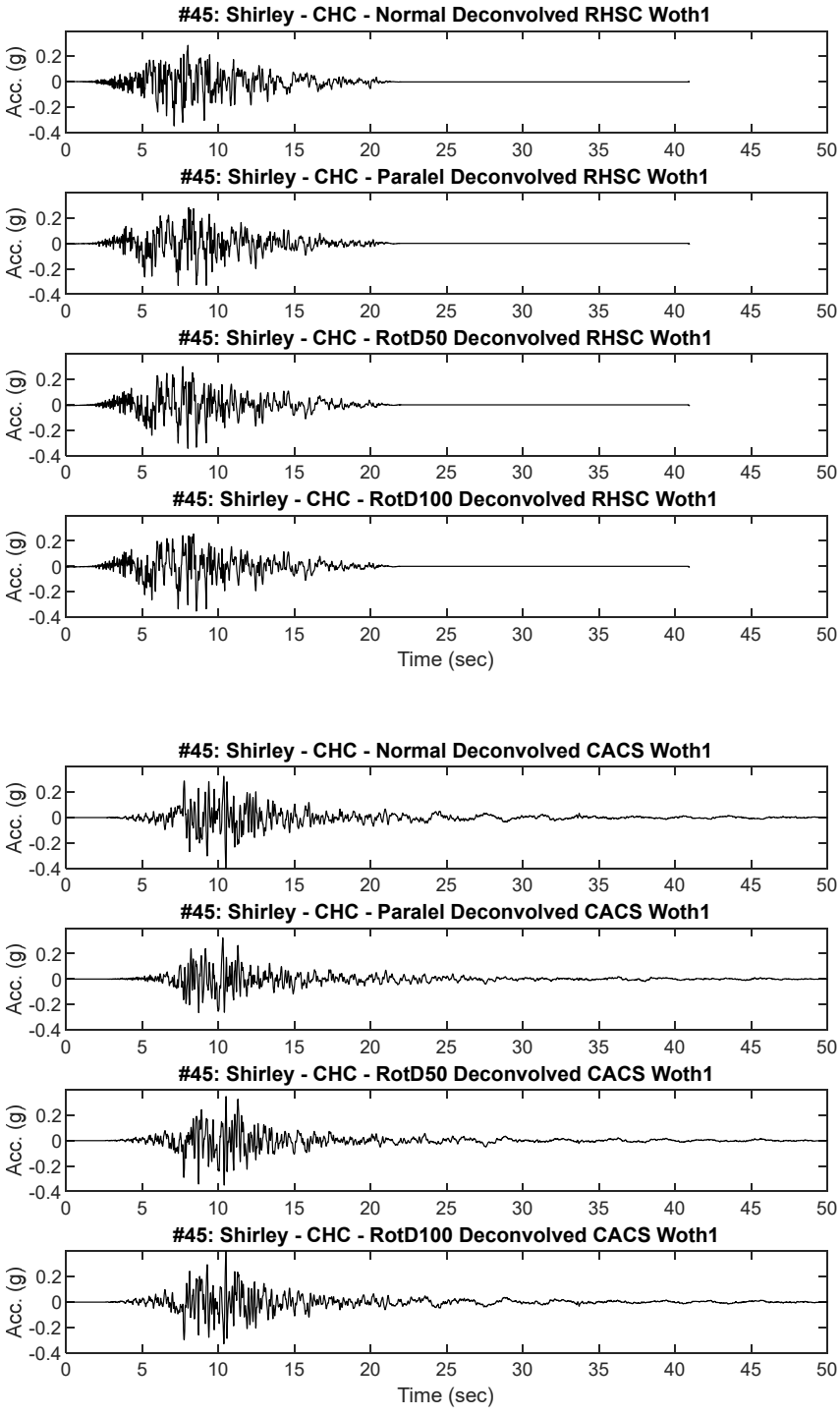


Figure B45.2 Scaled RHSC and CACS Deconvolved input motion acceleration time history placed at Riccarton Gravel elevation for dynamic analysis

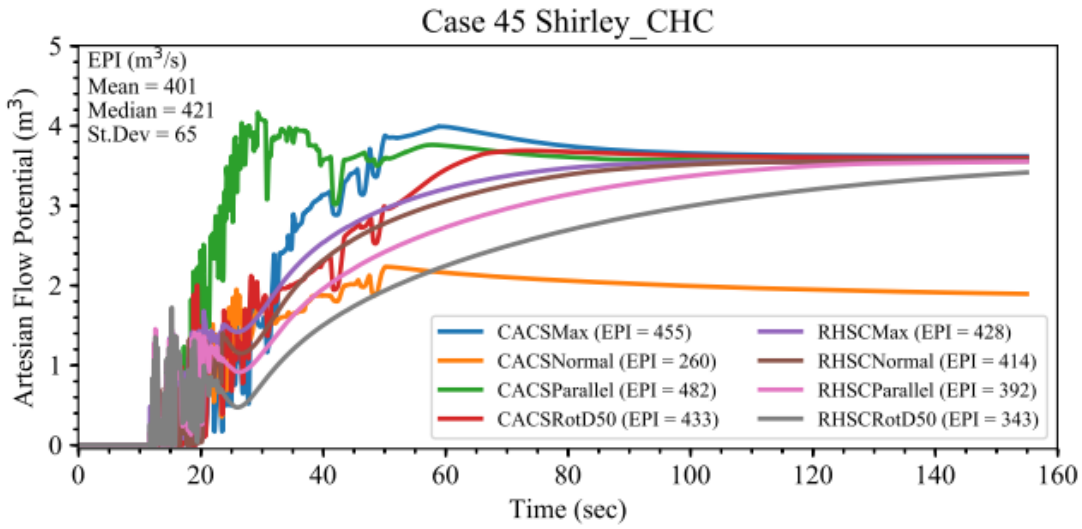


Figure B45.3 Summary of AFP-time histories and the variation of computed EPI values for each input motion.