Plots of identified velocity pulses

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The following pages contain plots of the 91 fault-normal pulse-like ground motions from the NGA database, along with their associated relevant metadata. The top of each page contains the year, event name and record number of the ground motion presented on that page. Below the title is a figure containing three panes:

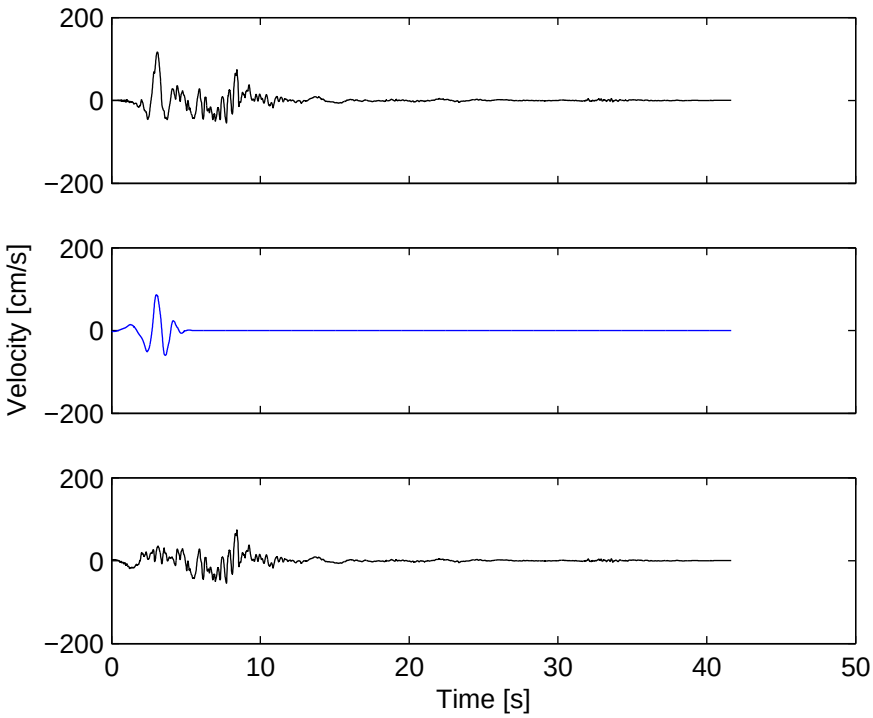
1. The original velocity time history
2. The velocity time history of the extracted pulse
3. The residual velocity time history after the pulse has been extracted

Following the figure are metadata from the NGA 'flatfile,' that may be useful for determining whether the observed pulse was caused by directivity effects. Most of the fields should be self-explanatory, or else they are documented in the NGA flatfile. The Somerville et al. 'FN amplification factor at 3s' is a measure of the factor by which the mean fault-normal spectral acceleration prediction is increased at 3 seconds, according to this model. This is reported to give a feel for the net effect of the X and θ parameters.

The method used to extract and identify these pulses is described in

> Baker J.W., 2007. Quantitative classification of near-fault ground motions using wavelet analysis. *Bulletin of the Seismological Society of America.* 97 (5), 1486-1501.

1971 San Fernando, Pacoima Dam (upper left abut)

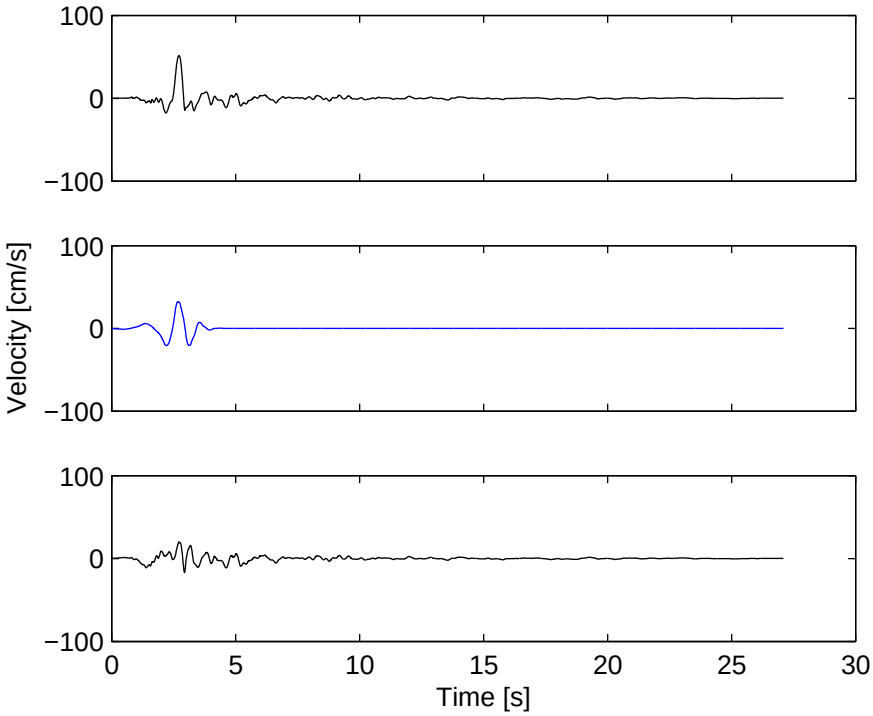


NGA record # 77
Pulse # 1
Filename = SFERN/PUL_195_FN.acc

Magnitude = 6.6
Closest distance = 1.81 km
Epicentral distance = 11.86 km
T_p = 1.6 s
PGV = 116 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 8
FN amplification at 3s = 1.3
Spudich isochrone factor = 1.9

1979 Coyote Lake, Gilroy Array #6

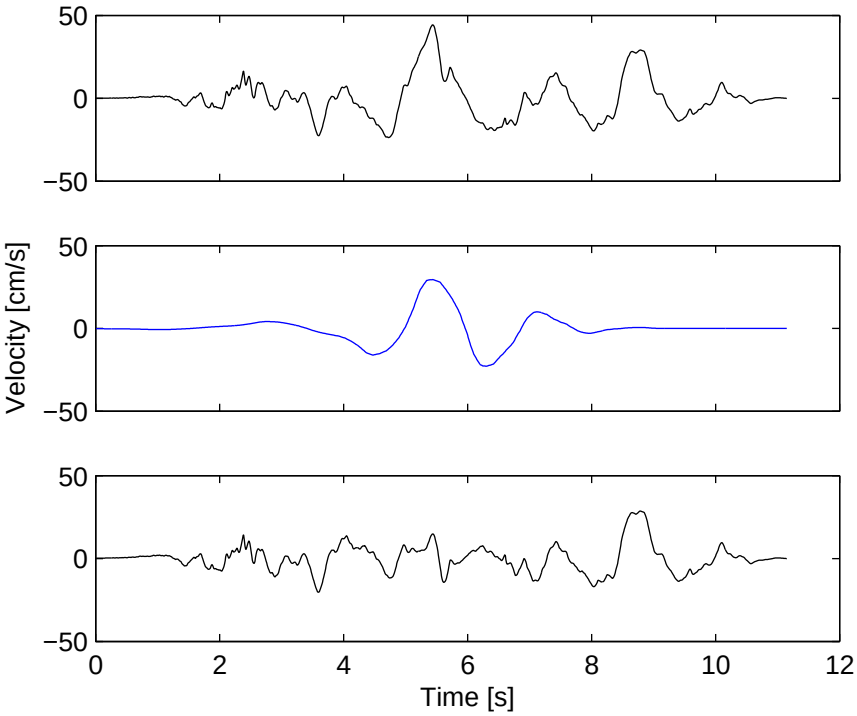


NGA record # 150
Pulse # 2
Filename = COYOTELK/G06_246_FN.acc

Magnitude = 5.7
Closest distance = 3.11 km
Epicentral distance = 4.37 km
T_p = 1.2 s
PGV = 52 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 17
FN amplification at 3s = 1.5
Spudich isochrone factor = 3.1

1979 Imperial Valley-06, Aeropuerto Mexicali

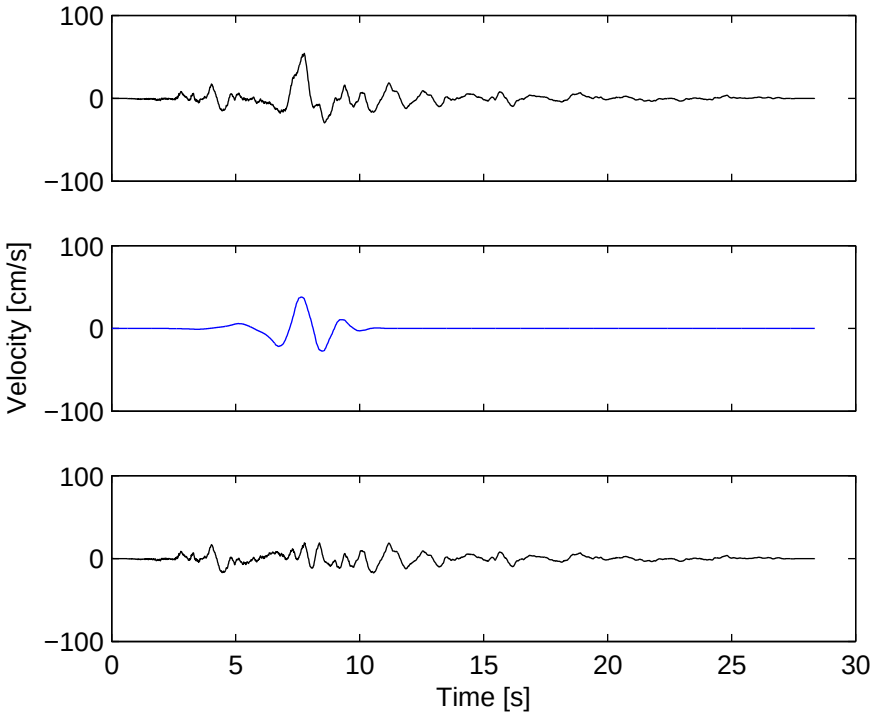


NGA record # 158
Pulse # 3
Filename = IMPVALL/H-AEP_233_FN.acc

Magnitude = 6.5
Closest distance = 0.34 km
Epicentral distance = 2.47 km
T_p = 2.4 s
PGV = 44 cm/s

Somerville et al. amplification factors
X = 0.0
θ = 35
FN amplification at 3s = 0.6
Spudich isochrone factor = 3.5

1979 Imperial Valley-06, Agrarias

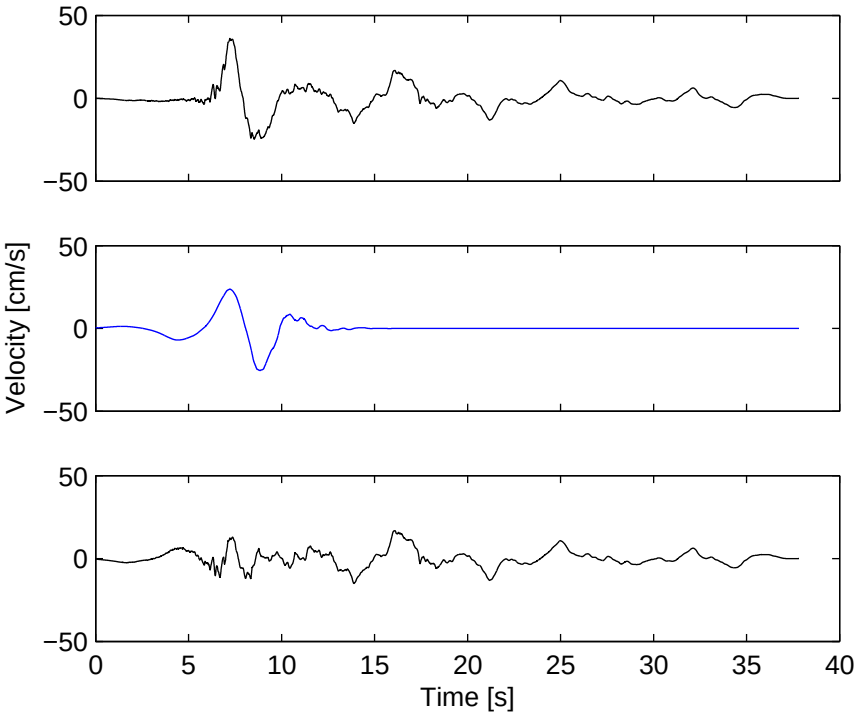


NGA record # 159
Pulse # 4
Filename = IMPVALL/H-AGR_233_FN.acc

Magnitude = 6.5
Closest distance = 0.65 km
Epicentral distance = 2.62 km
T_p = 2.3 s
PGV = 54 cm/s

Somerville et al. amplification factors
X = 0.1
θ = 25
FN amplification at 3s = 0.7
Spudich isochrone factor = 3.2

1979 Imperial Valley-06, Brawley Airport

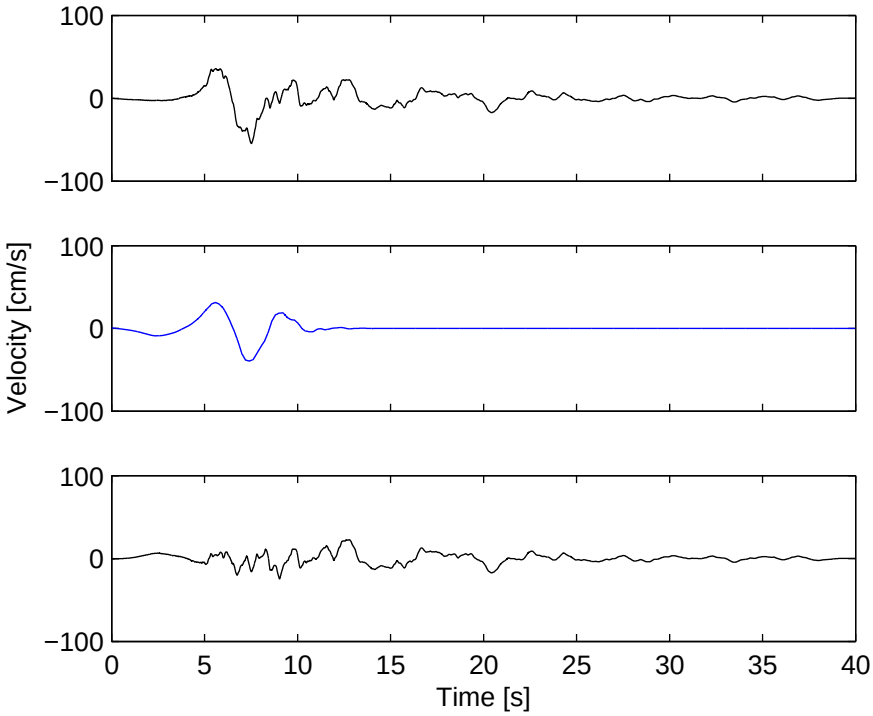


NGA record # 161
Pulse # 5
Filename = IMPVALL/H-BRA_233_FN.acc

Magnitude = 6.5
Closest distance = 10.42 km
Epicentral distance = 43.15 km
T_p = 4.0 s
PGV = 36 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 11
FN amplification at 3s = 1.6
Spudich isochrone factor = 2.6

1979 Imperial Valley-06, EC County Center FF

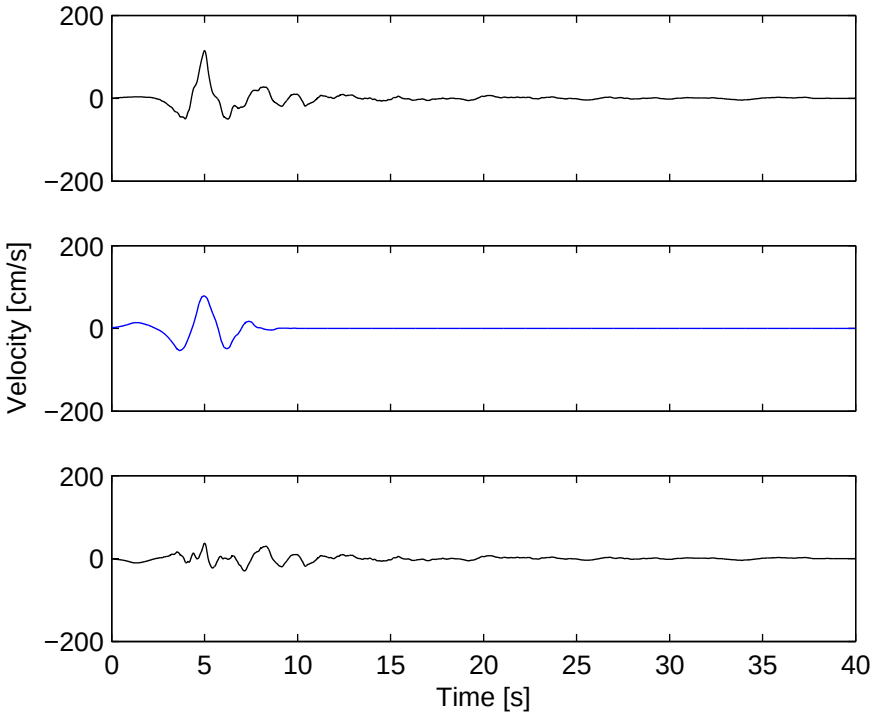


NGA record # 170
Pulse # 6
Filename = IMPVALL/H-ECC_233_FN.acc

Magnitude = 6.5
Closest distance = 7.31 km
Epicentral distance = 29.07 km
T_p = 4.5 s
PGV = 54 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 18
FN amplification at 3s = 1.5
Spudich isochrone factor = 2.2

1979 Imperial Valley-06, EC Meloland Overpass FF

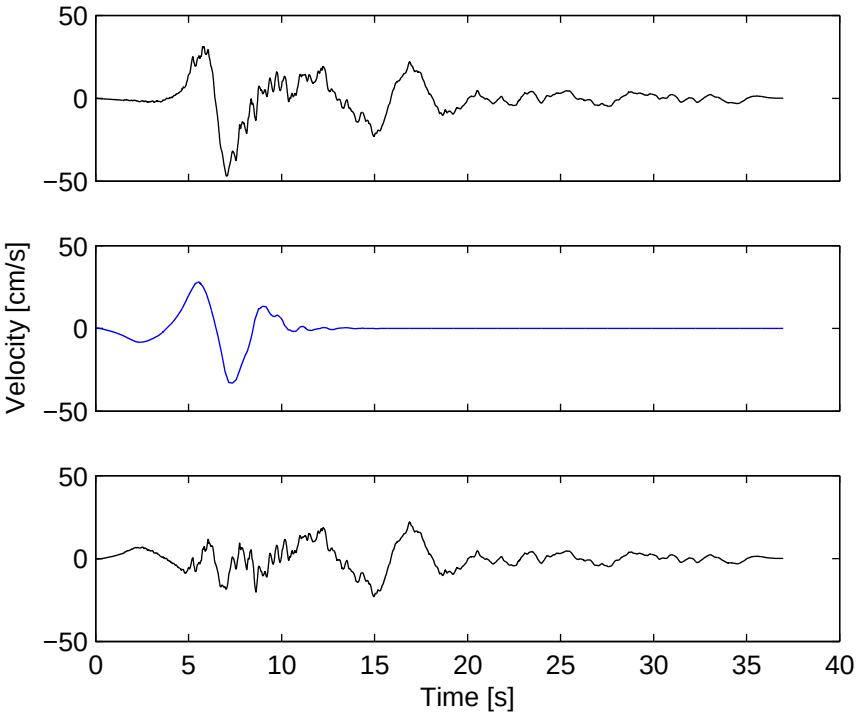


NGA record # 171
Pulse # 7
Filename = IMPVALL/H-EMO_233_FN.acc

Magnitude = 6.5
Closest distance = 0.07 km
Epicentral distance = 19.44 km
T_p = 3.3 s
PGV = 115 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 5
FN amplification at 3s = 1.7
Spudich isochrone factor = 4.0

1979 Imperial Valley-06, El Centro Array #10

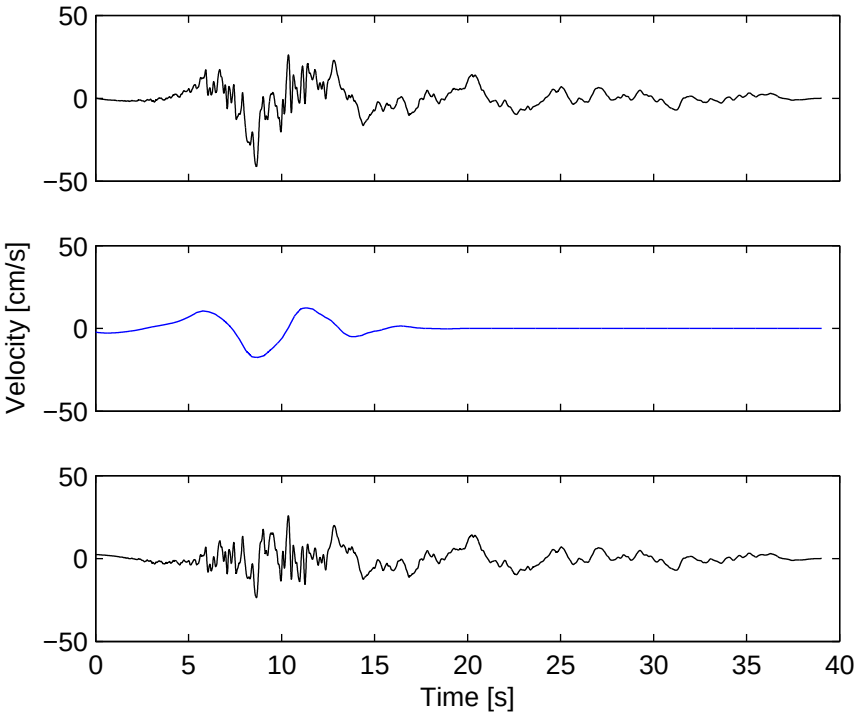


NGA record # 173
Pulse # 8
Filename = IMPVALL/H-E10_233_FN.acc

Magnitude = 6.5
Closest distance = 6.17 km
Epicentral distance = 26.31 km
T_p = 4.5 s
PGV = 47 cm/s

Somerville et al. amplification factors
X = 0.5
θ = 18
FN amplification at 3s = 1.5
Spudich isochrone factor = 2.3

1979 Imperial Valley-06, El Centro Array #11

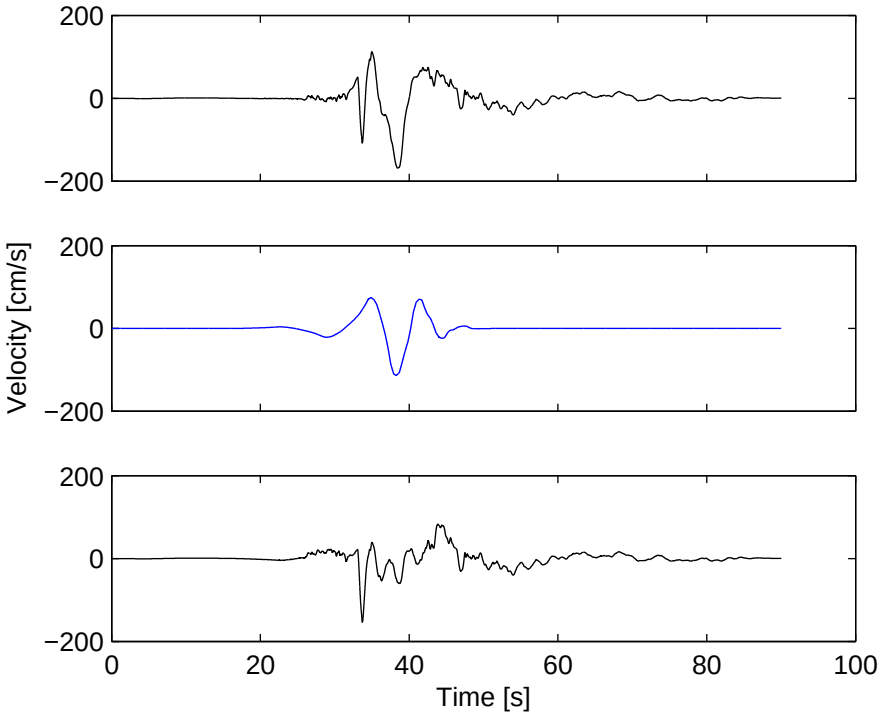


NGA record # 174
Pulse # 9
Filename = IMPVALL/H-E11_233_FN.acc

Magnitude = 6.5
Closest distance = 12.45 km
Epicentral distance = 29.44 km
T_p = 7.4 s
PGV = 41 cm/s

Somerville et al. amplification factors
X = 0.5
θ = 29
FN amplification at 3s = 1.4
Spudich isochrone factor = 1.7

1979 Imperial Valley-06, El Centro Array #3

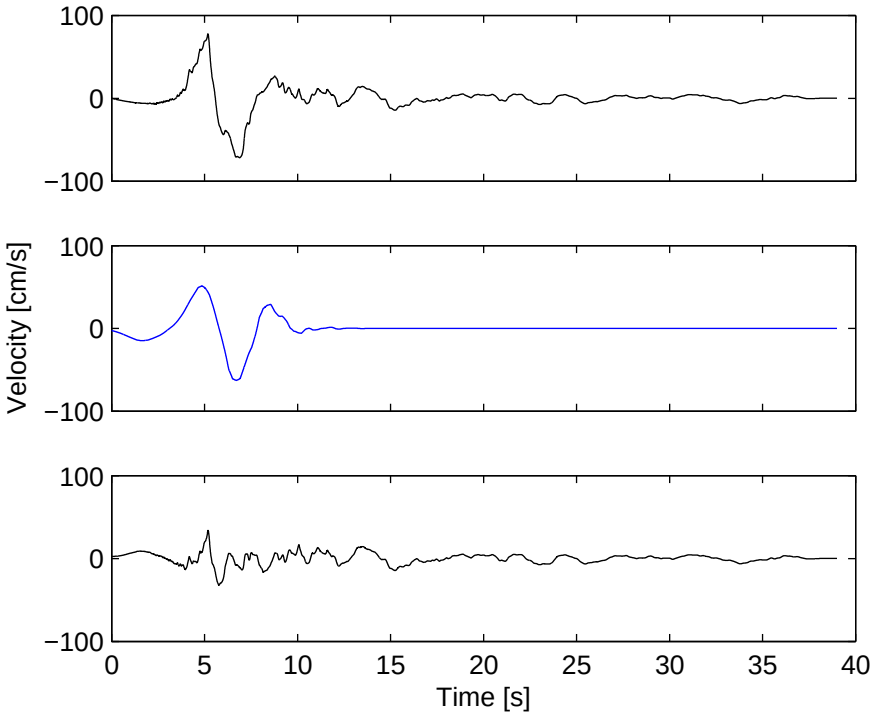


NGA record # 178
Pulse # 10
Filename = IMPVALL/H-E03_233_FN.acc

Magnitude = 6.5
Closest distance = 12.85 km
Epicentral distance = 28.65 km
T_p = 5.2 s
PGV = 41 cm/s

Somerville et al. amplification factors
X = 0.5
θ = 23
FN amplification at 3s = 1.4
Spudich isochrone factor = 1.6

1979 Imperial Valley-06, El Centro Array #4

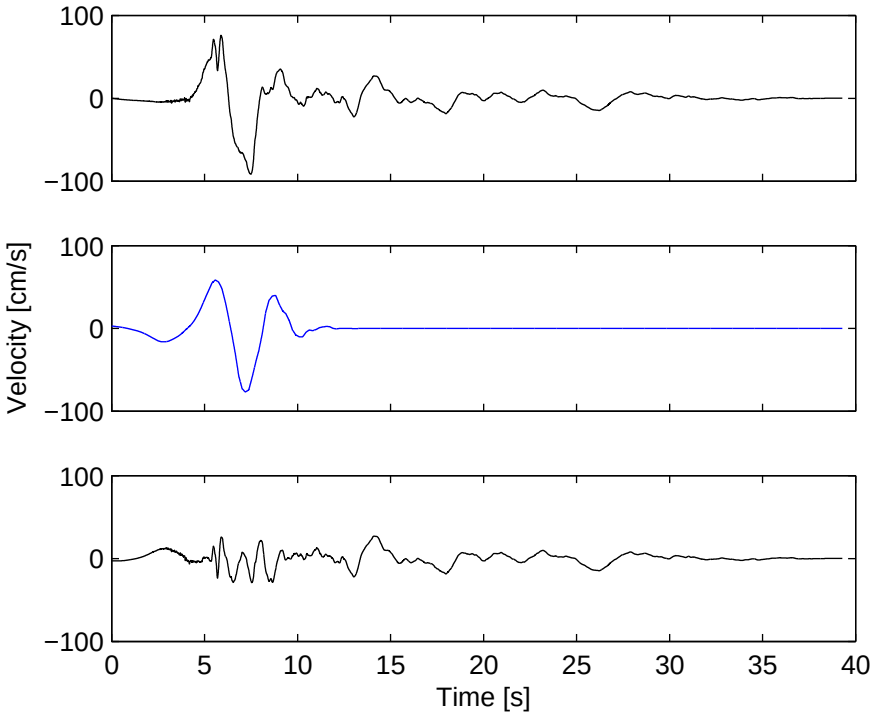


NGA record # 179
Pulse # 11
Filename = IMPVALL/H-E04_233_FN.acc

Magnitude = 6.5
Closest distance = 7.05 km
Epicentral distance = 27.13 km
T_p = 4.6 s
PGV = 78 cm/s

Somerville et al. amplification factors
X = 0.5
θ = 11
FN amplification at 3s = 1.6
Spudich isochrone factor = 2.1

1979 Imperial Valley-06, El Centro Array #5

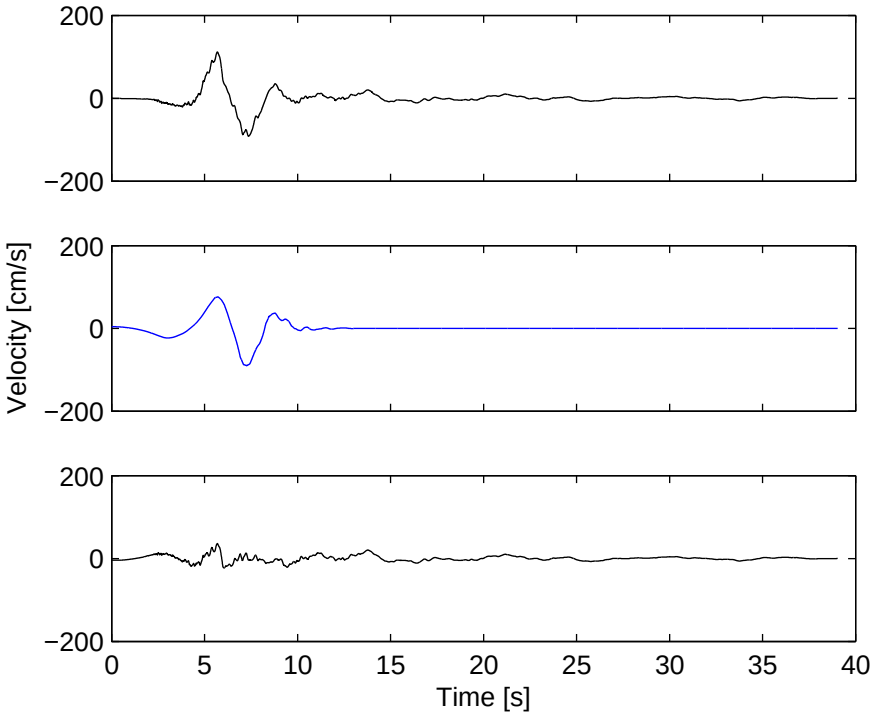


NGA record # 180
Pulse # 12
Filename = IMPVALL/H-E05_233_FN.acc

Magnitude = 6.5
Closest distance = 3.95 km
Epicentral distance = 27.8 km
T_p = 4.0 s
PGV = 91 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 5
FN amplification at 3s = 1.6
Spudich isochrone factor = 2.7

1979 Imperial Valley-06, El Centro Array #6

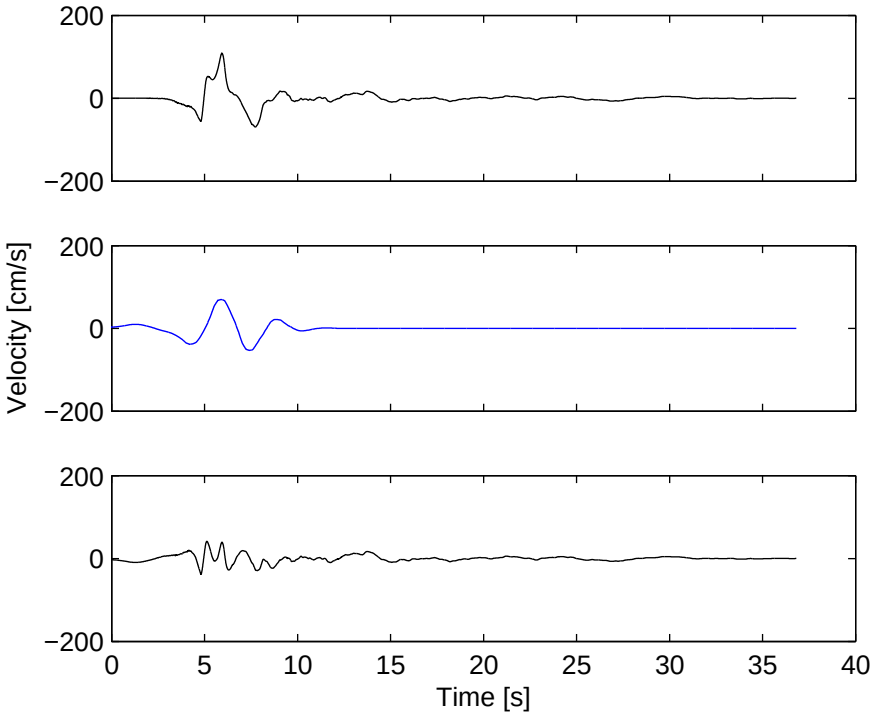


NGA record # 181
Pulse # 13
Filename = IMPVALL/H-E06_233_FN.acc

Magnitude = 6.5
Closest distance = 1.35 km
Epicentral distance = 27.47 km
T_p = 3.8 s
PGV = 112 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 1
FN amplification at 3s = 1.7
Spudich isochrone factor = 3.4

1979 Imperial Valley-06, El Centro Array #7

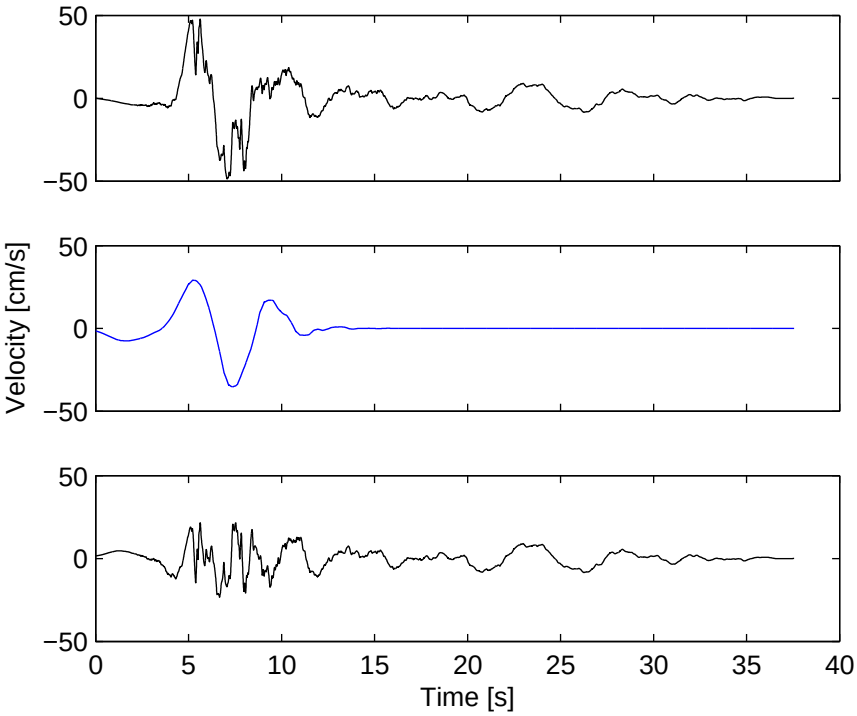


NGA record # 182
Pulse # 14
Filename = IMPVALL/H-E07_233_FN.acc

Magnitude = 6.5
Closest distance = 0.56 km
Epicentral distance = 27.64 km
T_p = 4.2 s
PGV = 109 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 5
FN amplification at 3s = 1.7
Spudich isochrone factor = 3.7

1979 Imperial Valley-06, El Centro Array #8

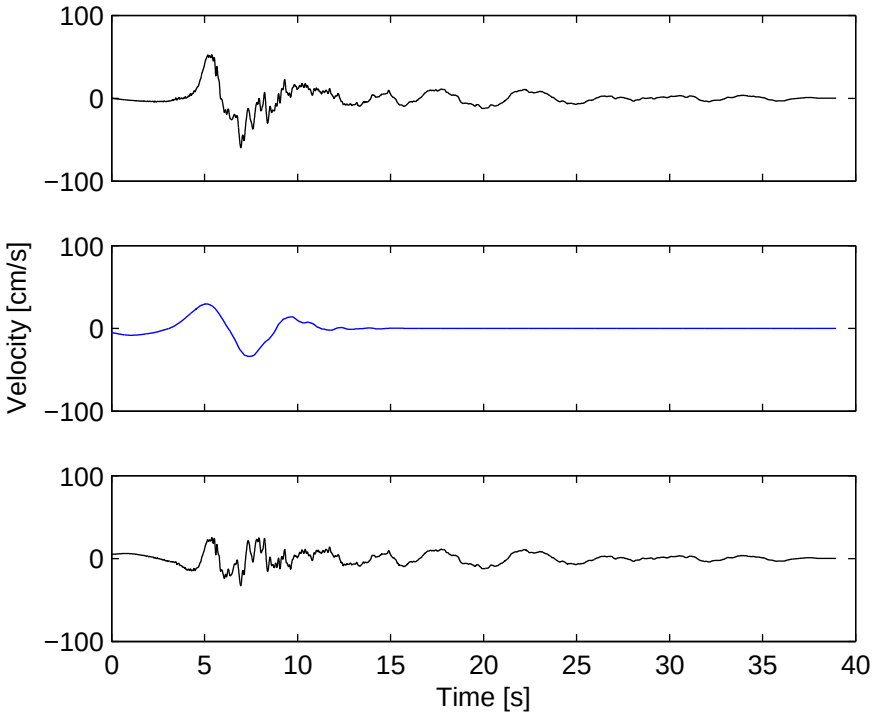


NGA record # 183
Pulse # 15
Filename = IMPVALL/H-E08_233_FN.acc

Magnitude = 6.5
Closest distance = 3.86 km
Epicentral distance = 28.09 km
T_p = 5.4 s
PGV = 49 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 12
FN amplification at 3s = 1.6
Spudich isochrone factor = 2.7

1979 Imperial Valley-06, El Centro Differential Array

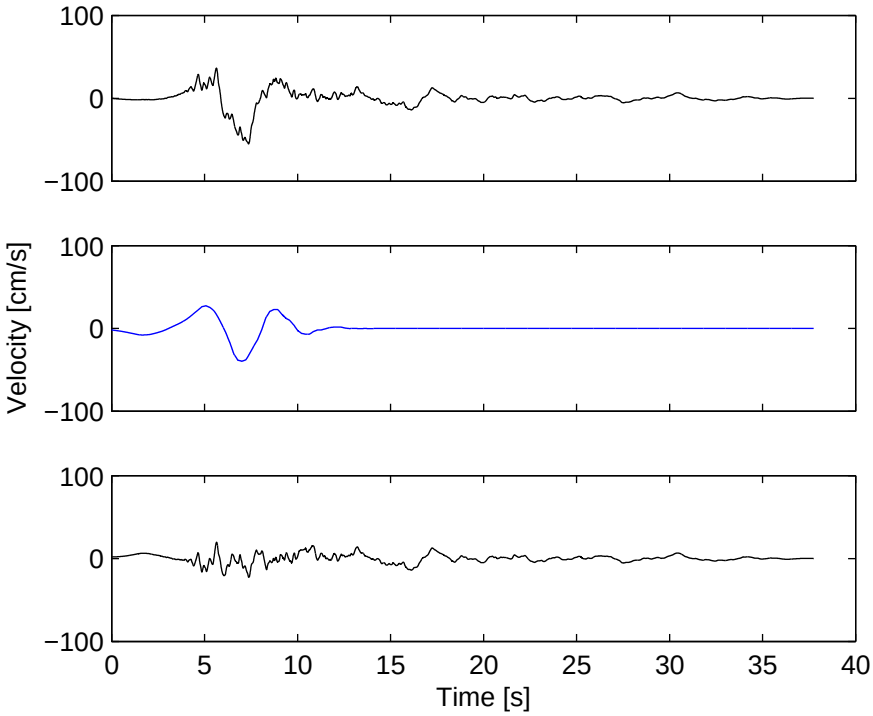


NGA record # 184
Pulse # 16
Filename = IMPVALL/H-EDA_233_FN.acc

Magnitude = 6.5
Closest distance = 5.09 km
Epicentral distance = 27.23 km
T_p = 5.9 s
PGV = 60 cm/s

Somerville et al. amplification factors
X = 0.5
θ = 15
FN amplification at 3s = 1.6
Spudich isochrone factor = 2.5

1979 Imperial Valley-06, Holtville Post Office

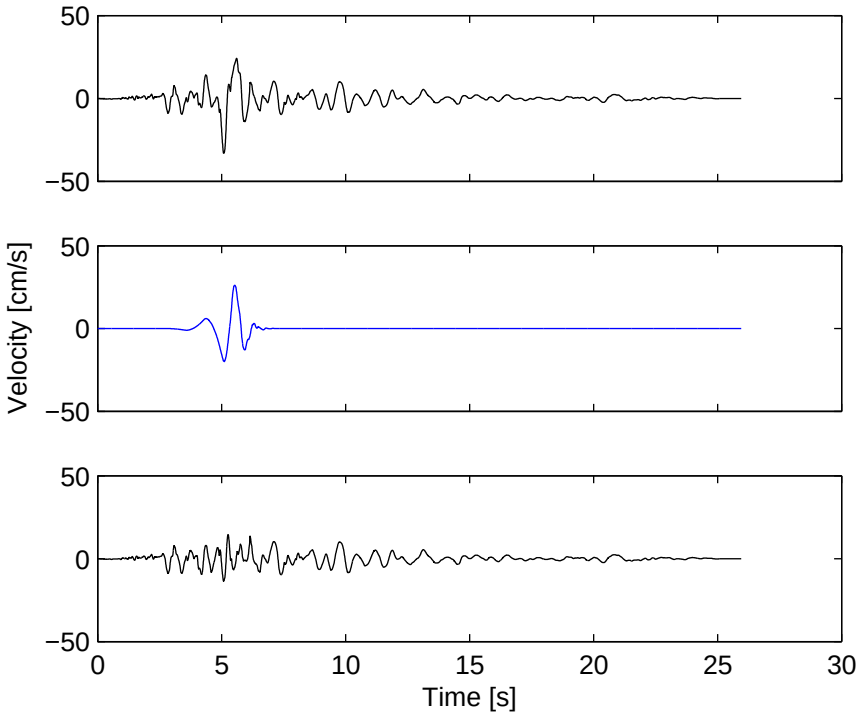


NGA record # 185
Pulse # 17
Filename = IMPVALL/H-HVP_233_FN.acc

Magnitude = 6.5
Closest distance = 7.65 km
Epicentral distance = 19.81 km
T_p = 4.8 s
PGV = 55 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 18
FN amplification at 3s = 1.4
Spudich isochrone factor = 1.8

1980 Mammoth Lakes-06, Long Valley Dam (Upr L Abut)

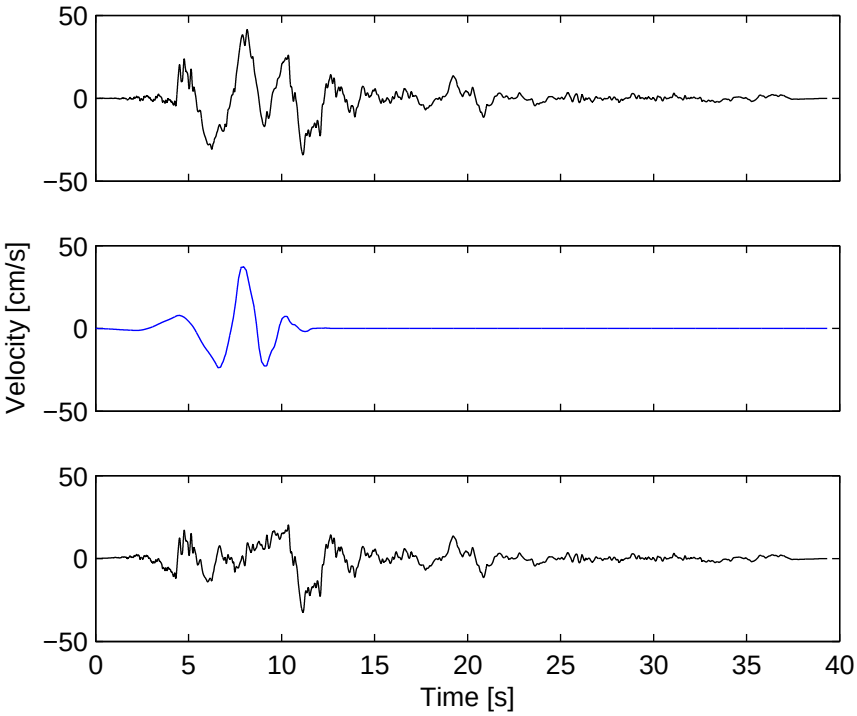


NGA record # 250
Pulse # 18
Filename = MAMMOTH/L-LUL_291_FN.acc

Magnitude = 5.9
Closest distance = NaN km
Epicentral distance = 14.04 km
T_p = 1.1 s
PGV = 33 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = NaN

1980 Irpinia, Italy-01, Sturno

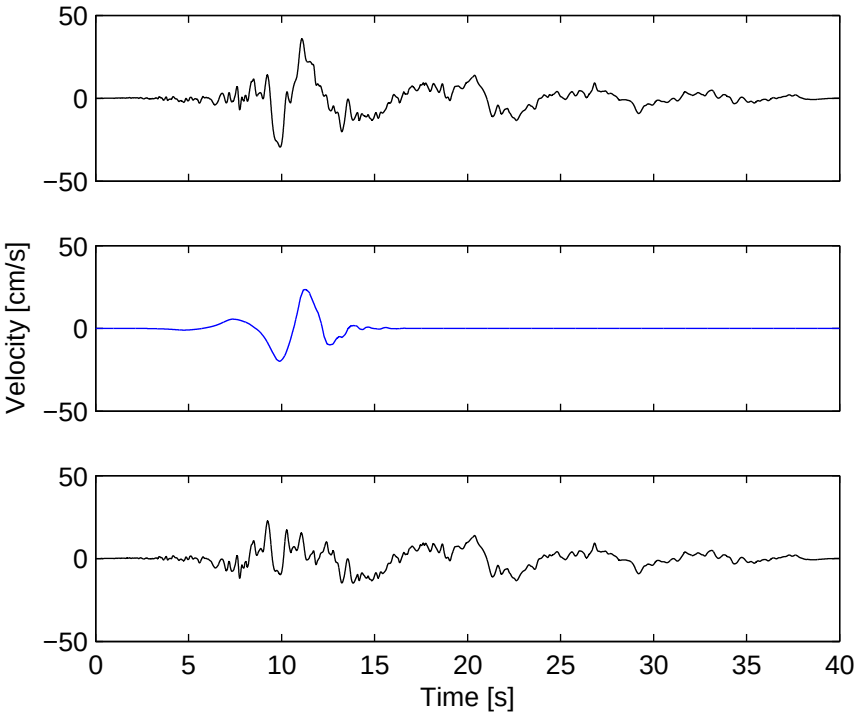


NGA record # 292
Pulse # 19
Filename = ITALY/A-STU_223_FN.acc

Magnitude = 6.9
Closest distance = 10.84 km
Epicentral distance = 30.35 km
T_p = 3.1 s
PGV = 41 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.5

1981 Westmorland, Parachute Test Site

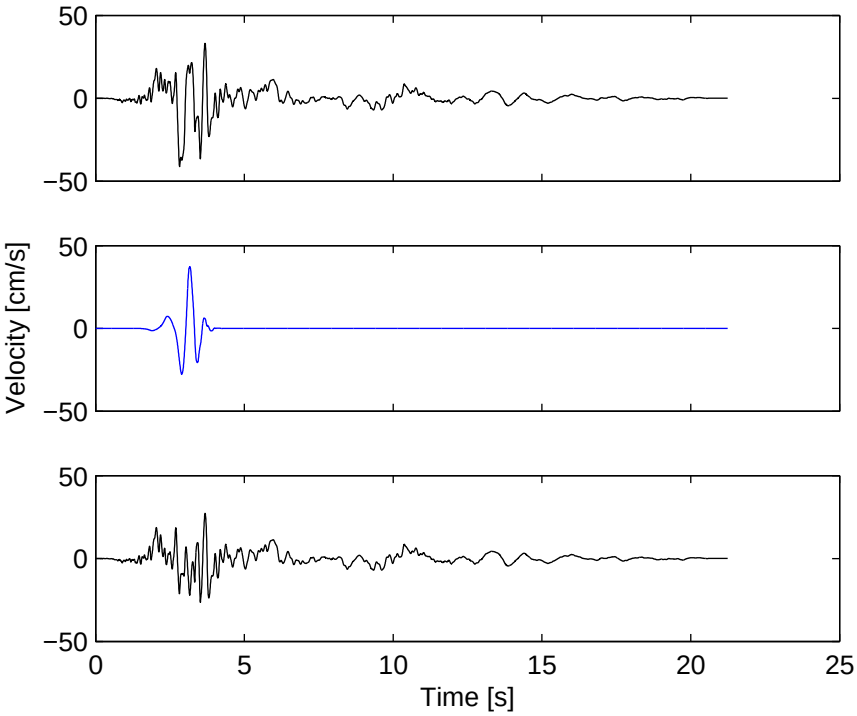


NGA record # 316
Pulse # 20
Filename = WESTMORL/PTS_334_FN.acc

Magnitude = 5.9
Closest distance = 16.66 km
Epicentral distance = 20.47 km
T_p = 3.6 s
PGV = 36 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 42
FN amplification at 3s = 1.1
Spudich isochrone factor = 1.7

1983 Coalinga-05, Oil City

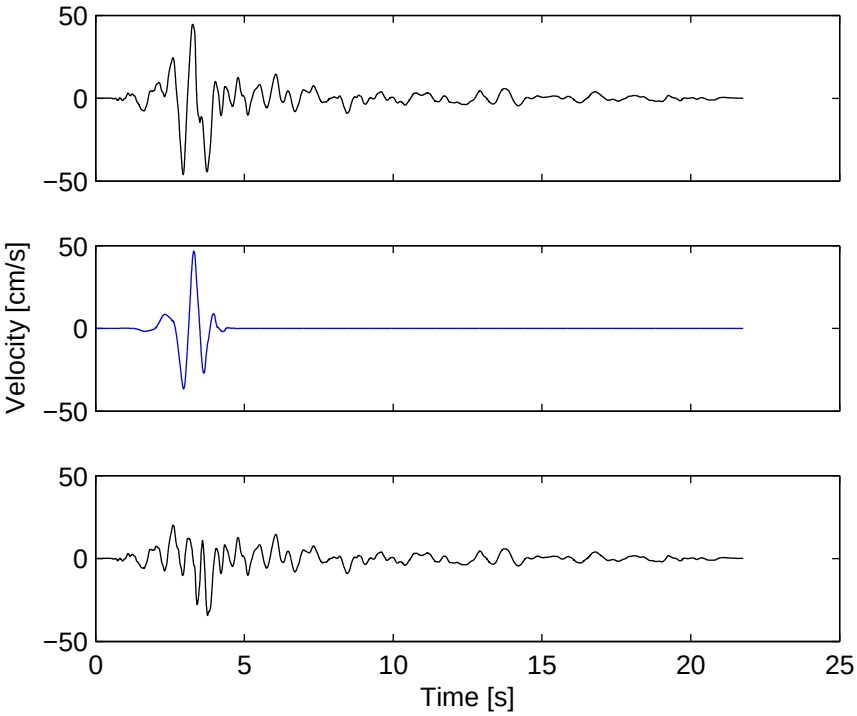


NGA record # 407
Pulse # 21
Filename = COALINGA/D-OLC_262_FN.acc

Magnitude = 5.8
Closest distance = NaN km
Epicentral distance = 4.6 km
T_p = 0.7 s
PGV = 41 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = NaN

1983 Coalinga-05, Transmitter Hill

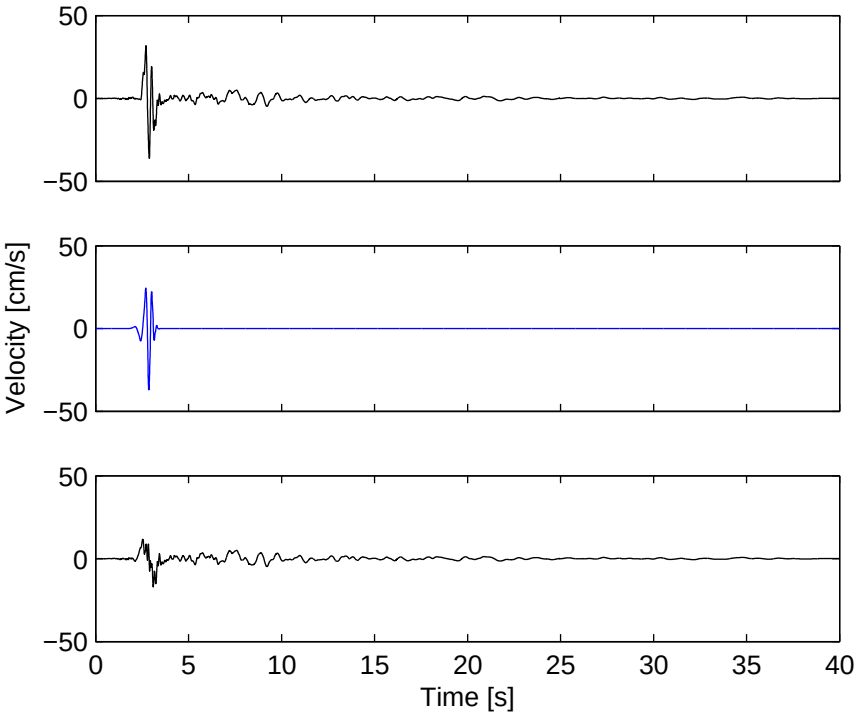


NGA record # 415
Pulse # 22
Filename = COALINGA/D-TSM_262_FN.acc

Magnitude = 5.8
Closest distance = NaN km
Epicentral distance = 5.99 km
T_p = 0.9 s
PGV = 46 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = NaN

1983 Coalinga-07, Coalinga-14th & Elm (Old CHP)

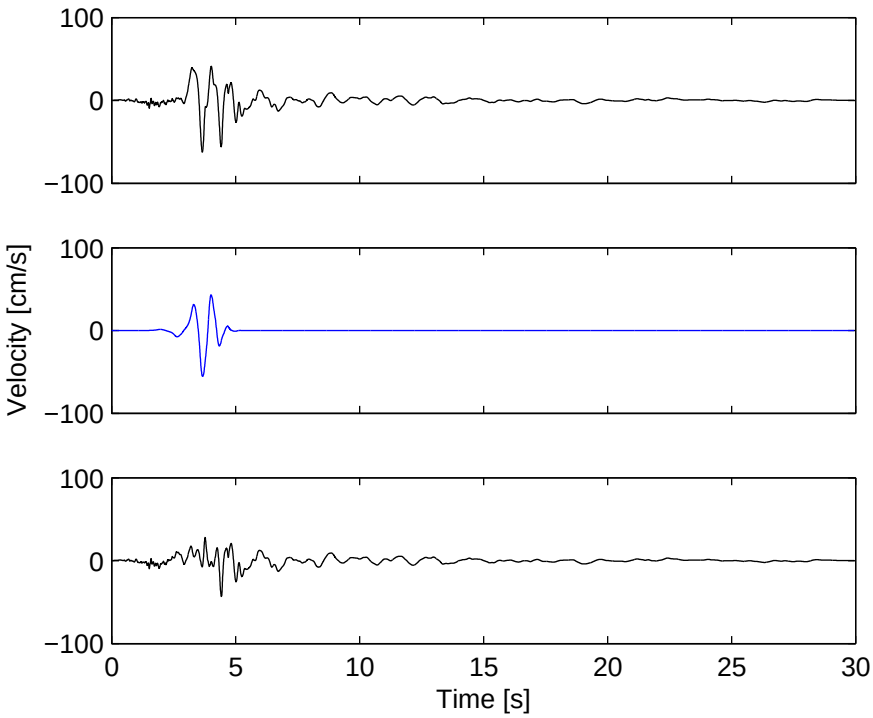


NGA record # 418
Pulse # 23
Filename = COALINGA/F-CHP_258_FN.acc

Magnitude = 5.2
Closest distance = NaN km
Epicentral distance = 9.57 km
T_p = 0.4 s
PGV = 36 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = NaN

1984 Morgan Hill, Coyote Lake Dam (SW Abut)

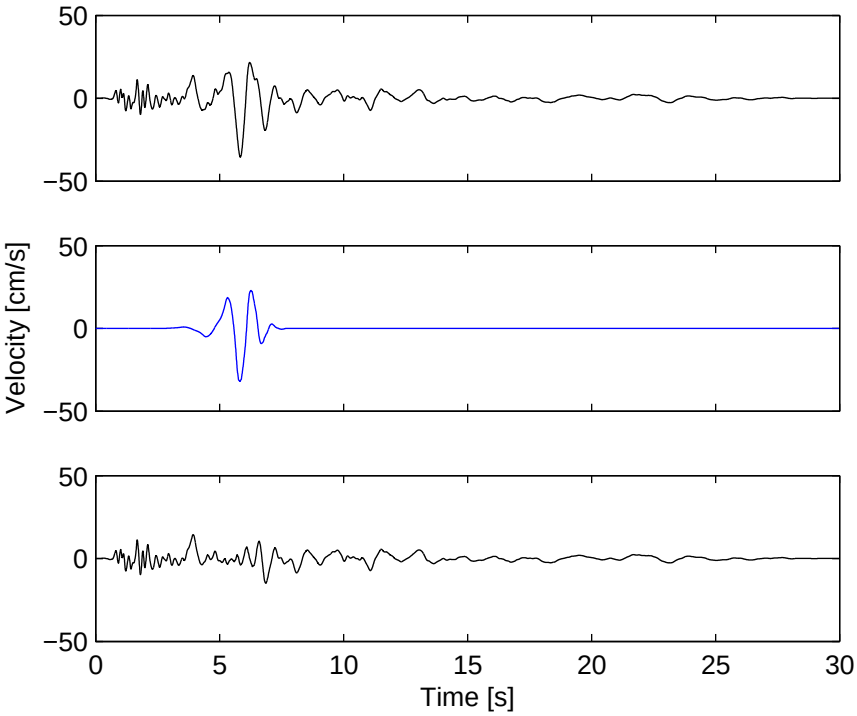


NGA record # 451
Pulse # 24
Filename = MORGAN/CYC_058_FN.acc

Magnitude = 6.2
Closest distance = 0.53 km
Epicentral distance = 24.55 km
T_p = 1.0 s
PGV = 62 cm/s

Somerville et al. amplification factors
X = 0.9
θ = 0
FN amplification at 3s = 1.7
Spudich isochrone factor = 3.8

1984 Morgan Hill, Gilroy Array #6

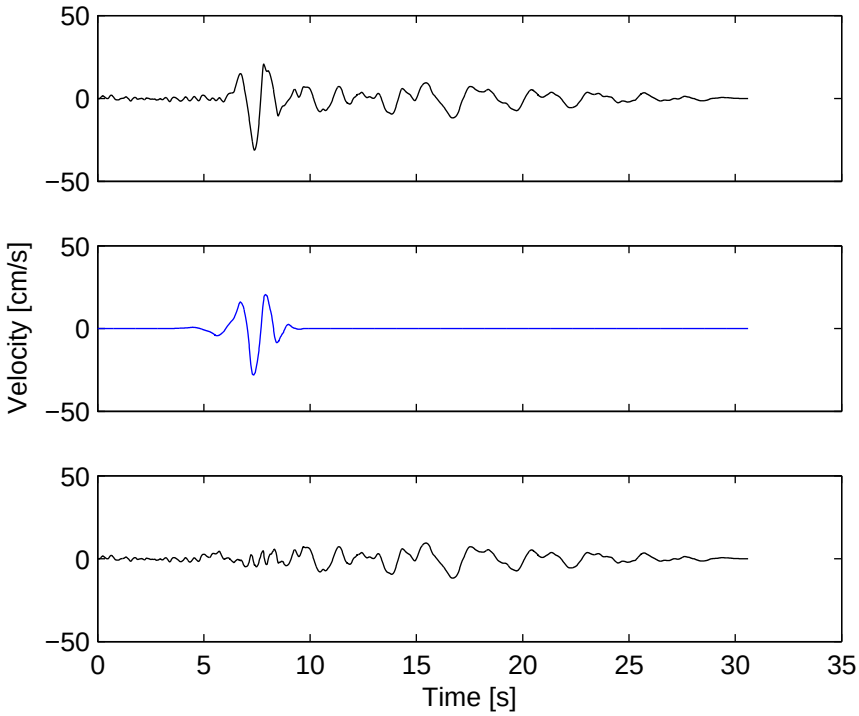


NGA record # 459
Pulse # 25
Filename = MORGAN/G06_058_FN.acc

Magnitude = 6.2
Closest distance = 9.86 km
Epicentral distance = 36.34 km
T_p = 1.2 s
PGV = 35 cm/s

Somerville et al. amplification factors
X = 1.0
θ = 1
FN amplification at 3s = 1.6
Spudich isochrone factor = 3.9

1986 Taiwan SMART1(40), SMART1 C00

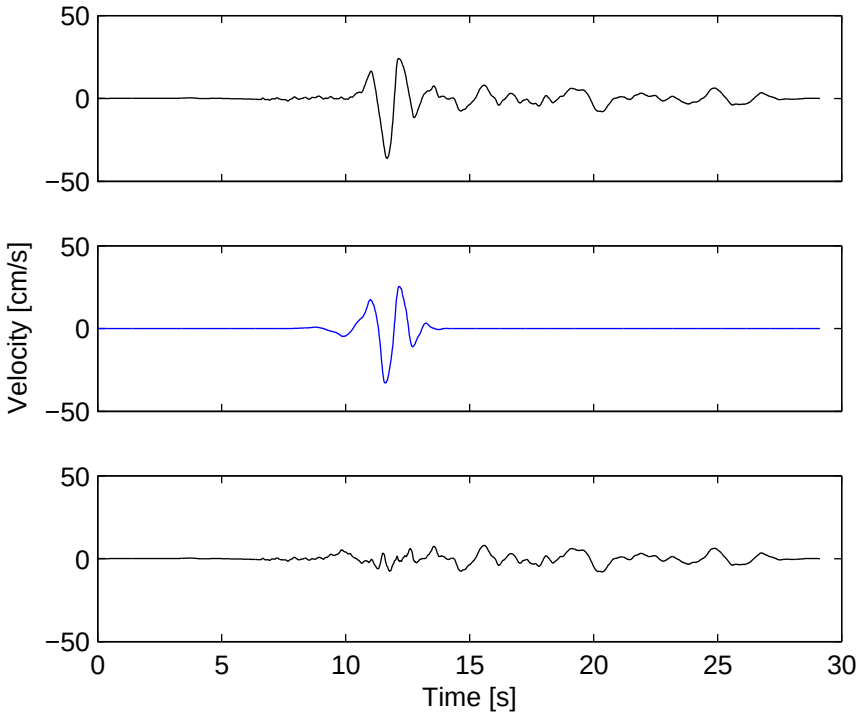


NGA record # 503
Pulse # 26
Filename = SMART1/40C00_314_FN.acc

Magnitude = 6.3
Closest distance = NaN km
Epicentral distance = 68.18 km
T_p = 1.6 s
PGV = 31 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = NaN

1986 Taiwan SMART1(40), SMART1 M07

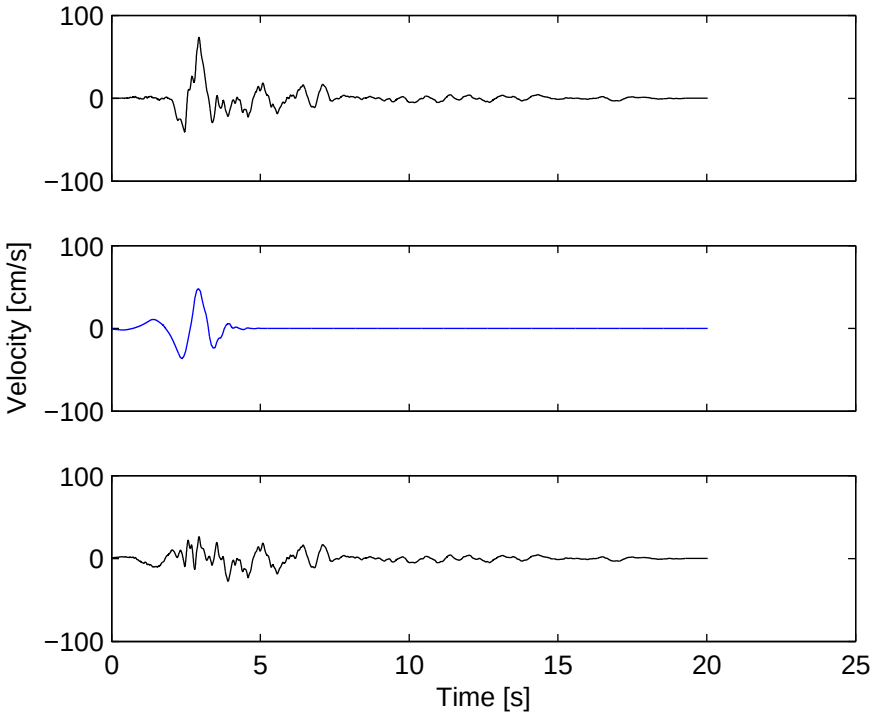


NGA record # 508
Pulse # 27
Filename = SMART1/40M07_314_FN.acc

Magnitude = 6.3
Closest distance = NaN km
Epicentral distance = 67.16 km
T_p = 1.6 s
PGV = 36 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = NaN

1986 N. Palm Springs, North Palm Springs

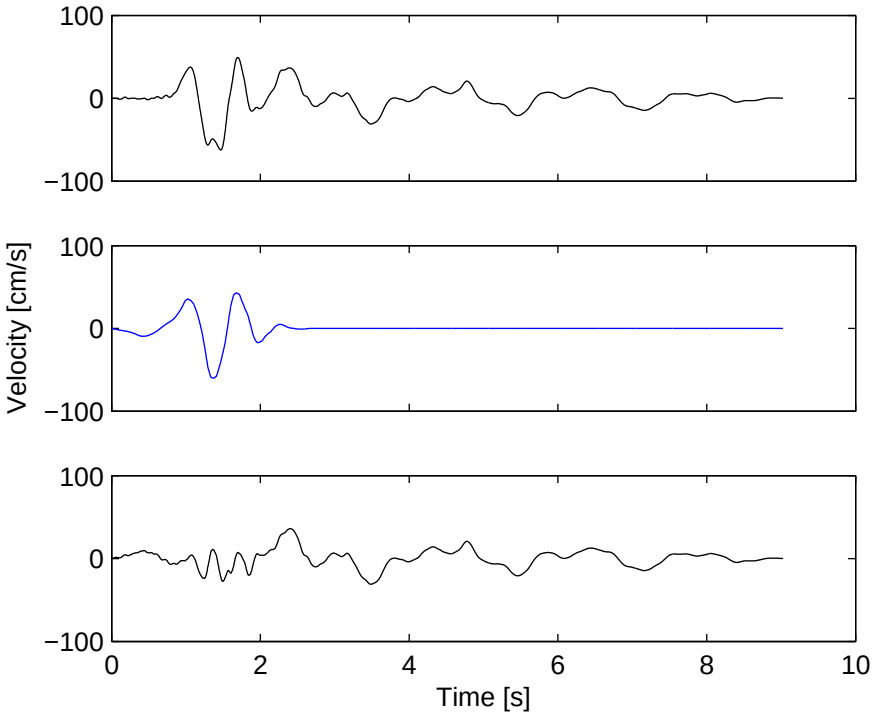


NGA record # 529
Pulse # 28
Filename = PALMSPR/NPS_197_FN.acc

Magnitude = 6.1
Closest distance = 4.04 km
Epicentral distance = 10.57 km
T_p = 1.4 s
PGV = 74 cm/s

Somerville et al. amplification factors
X = 0.7
θ = 14
FN amplification at 3s = 1.2
Spudich isochrone factor = 2.6

1986 San Salvador, Geotech Investig Center

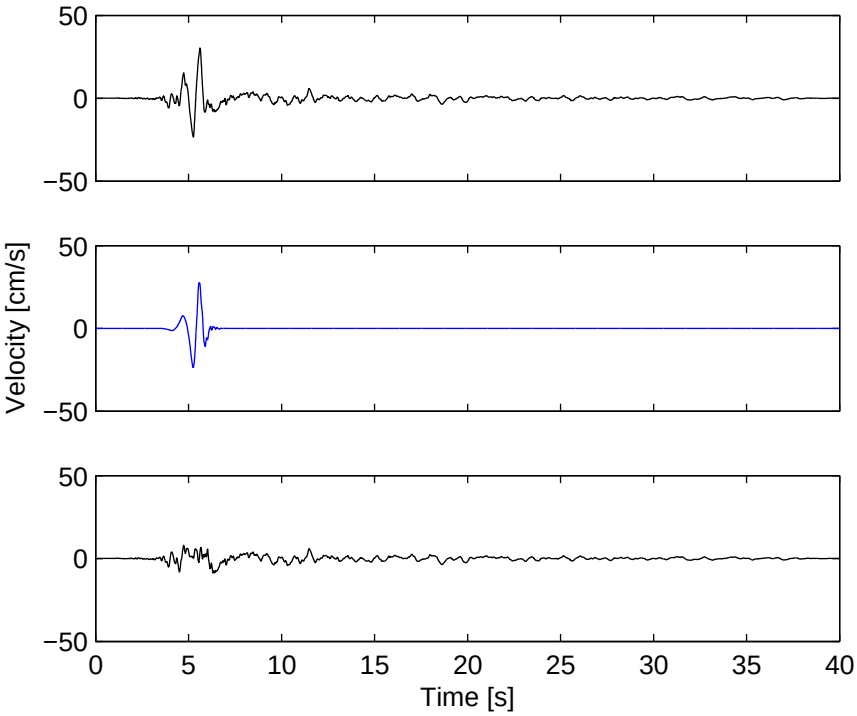


NGA record # 568
Pulse # 29
Filename = SANSALV/GIC_302_FN.acc

Magnitude = 5.8
Closest distance = 6.3 km
Epicentral distance = 7.93 km
T_p = 0.9 s
PGV = 62 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 12
FN amplification at 3s = 1.6
Spudich isochrone factor = 3.0

1987 Whittier Narrows-01, Downey - Co Maint Bldg

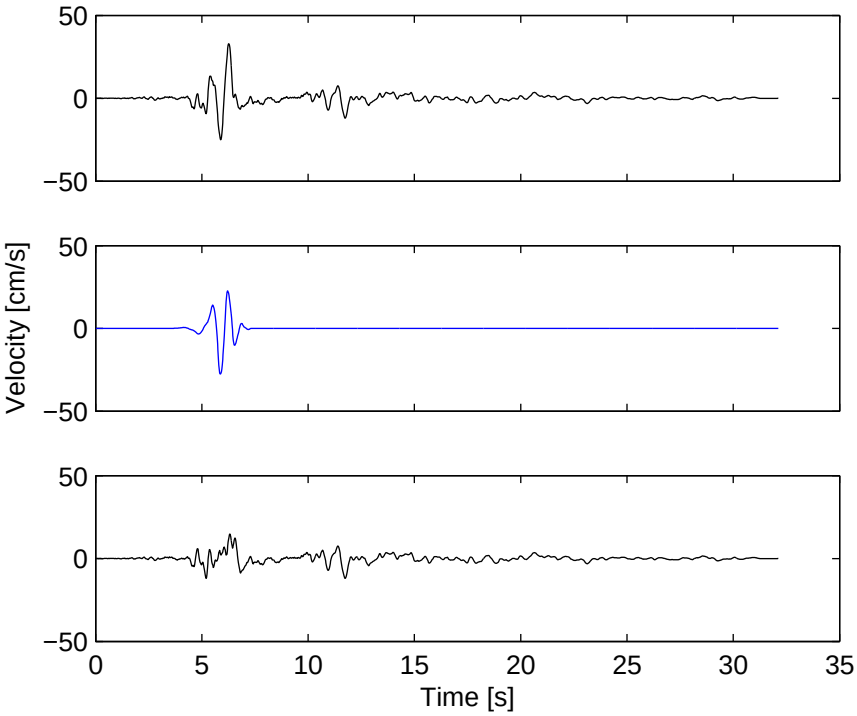


NGA record # 615
Pulse # 30
Filename = WHITTIER/A-DWN_190_FN.acc

Magnitude = 6
Closest distance = 20.82 km
Epicentral distance = 16.04 km
T_p = 0.8 s
PGV = 30 cm/s

Somerville et al. amplification factors
X = 0.0
θ = 14
FN amplification at 3s = 0.8
Spudich isochrone factor = 0.9

1987 Whittier Narrows-01, LB - Orange Ave

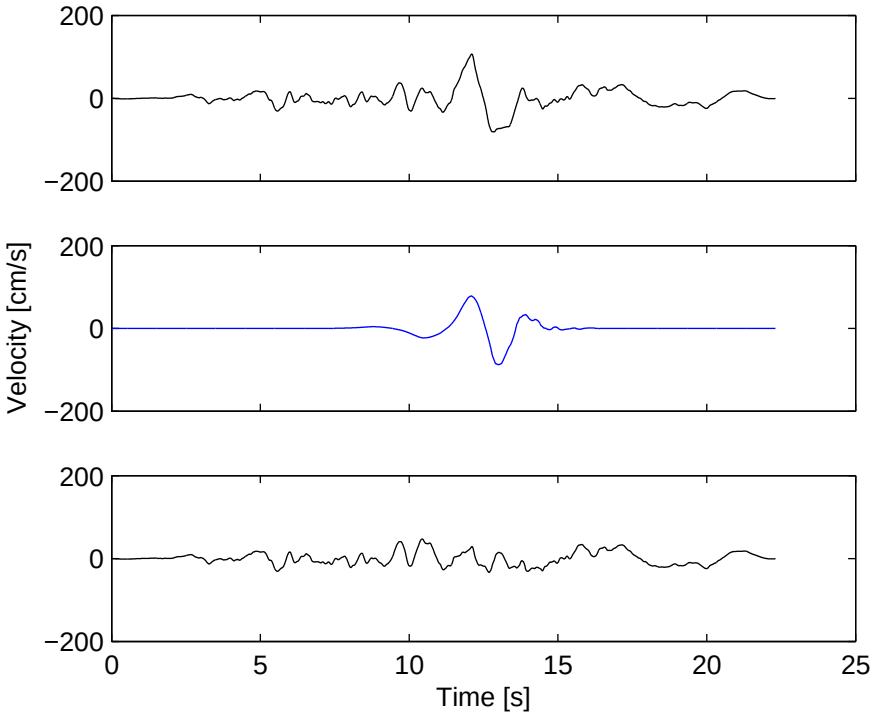


NGA record # 645
Pulse # 31
Filename = WHITTIER/A-OR2_190_FN.acc

Magnitude = 6
Closest distance = 24.54 km
Epicentral distance = 20.68 km
T_p = 1.0 s
PGV = 33 cm/s

Somerville et al. amplification factors
X = 0.0
θ = 6
FN amplification at 3s = 0.8
Spudich isochrone factor = 0.9

1987 Superstition Hills-02, Parachute Test Site

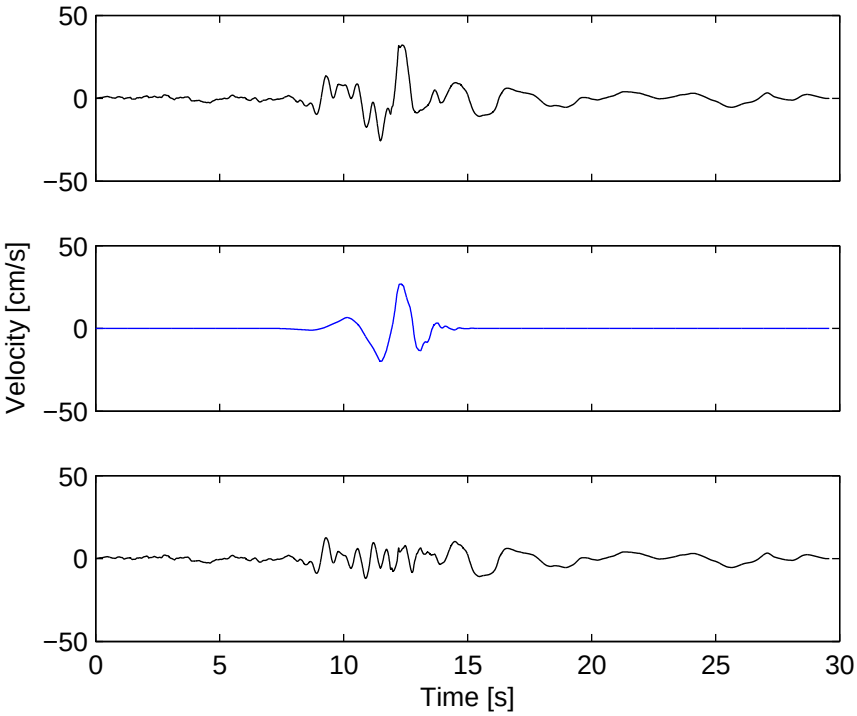


NGA record # 723
Pulse # 32
Filename = SUPERST/B-PTS_037_FN.acc

Magnitude = 6.5
Closest distance = 0.95 km
Epicentral distance = 15.99 km
T_p = 2.3 s
PGV = 107 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 3
FN amplification at 3s = 1.7
Spudich isochrone factor = 3.3

1989 Loma Prieta, Alameda Naval Air Stn Hanger

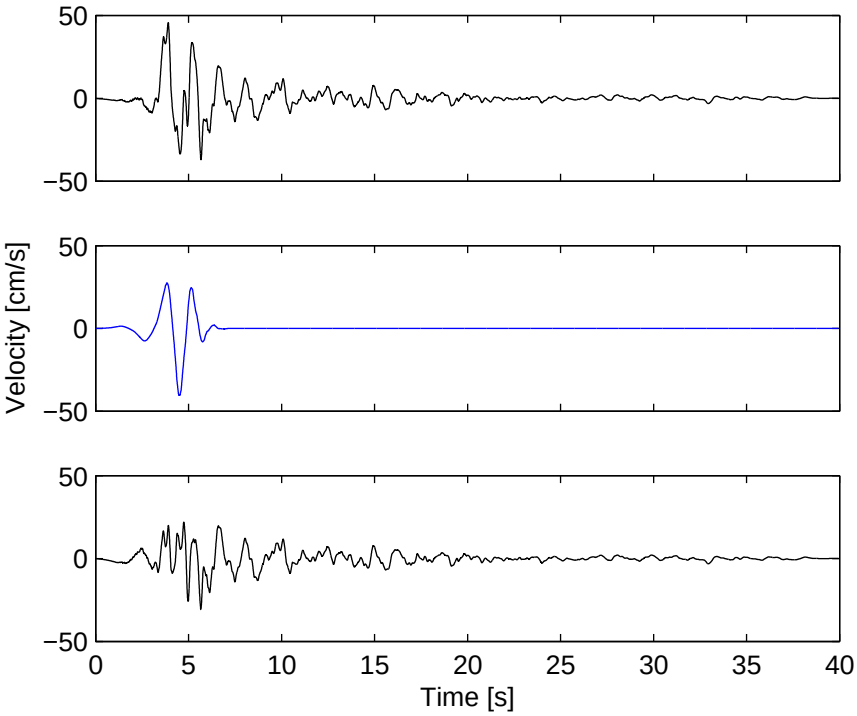


NGA record # 738
Pulse # 33
Filename = LOMAP/NAS_038_FN.acc

Magnitude = 6.9
Closest distance = 71 km
Epicentral distance = 90.77 km
T_p = 2.0 s
PGV = 32 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.6

1989 Loma Prieta, Gilroy Array #2

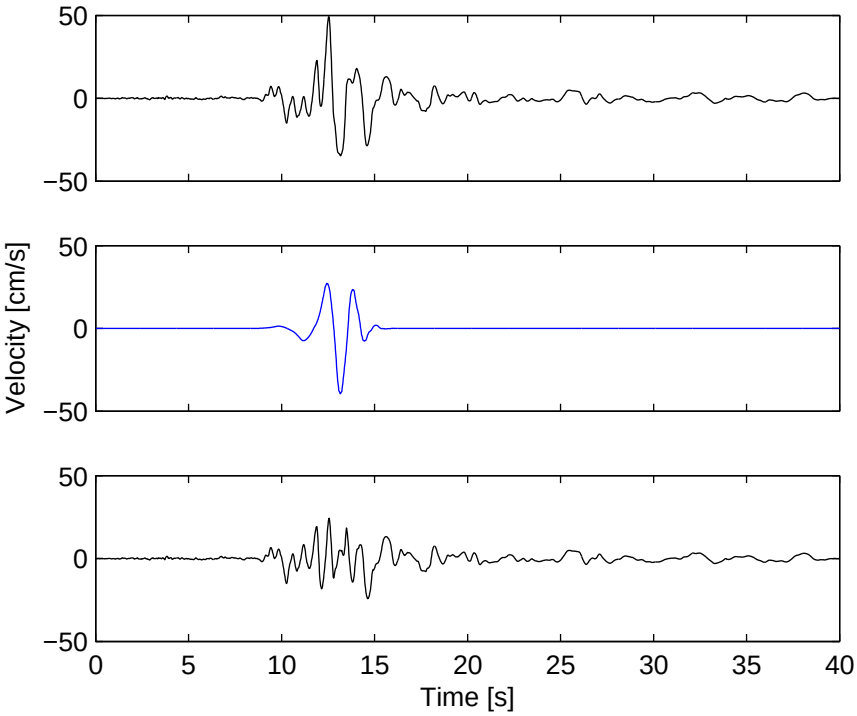


NGA record # 766
Pulse # 34
Filename = LOMAP/G02_038_FN.acc

Magnitude = 6.9
Closest distance = 11.07 km
Epicentral distance = 29.77 km
T_p = 1.7 s
PGV = 46 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 3.3

1989 Loma Prieta, Oakland - Outer Harbor Wharf

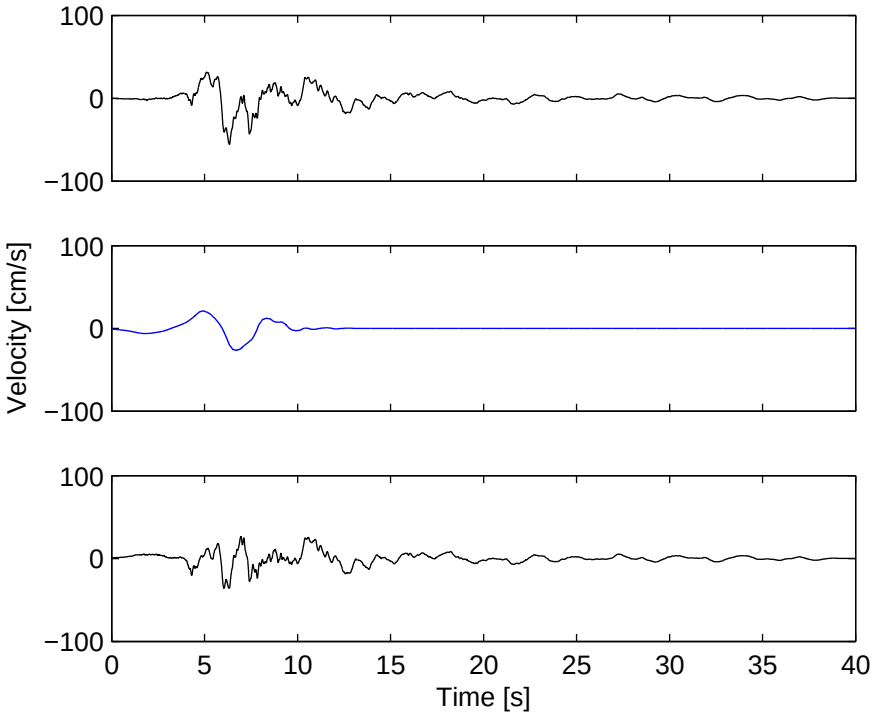


NGA record # 783
Pulse # 35
Filename = LOMAP/CH12_038_FN.acc

Magnitude = 6.9
Closest distance = 74.26 km
Epicentral distance = 94 km
T_p = 1.8 s
PGV = 49 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.6

1989 Loma Prieta, Saratoga - Aloha Ave

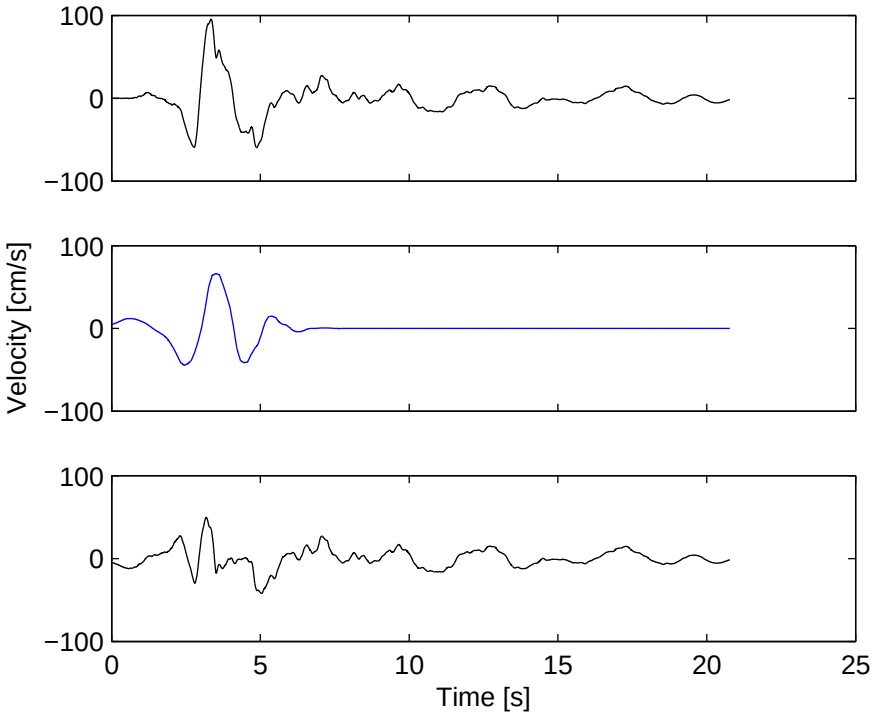


NGA record # 802
Pulse # 36
Filename = LOMAP/STG_038_FN.acc

Magnitude = 6.9
Closest distance = 8.5 km
Epicentral distance = 27.23 km
T_p = 4.5 s
PGV = 56 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 3.5

1992 Erzican, Turkey, Erzincan

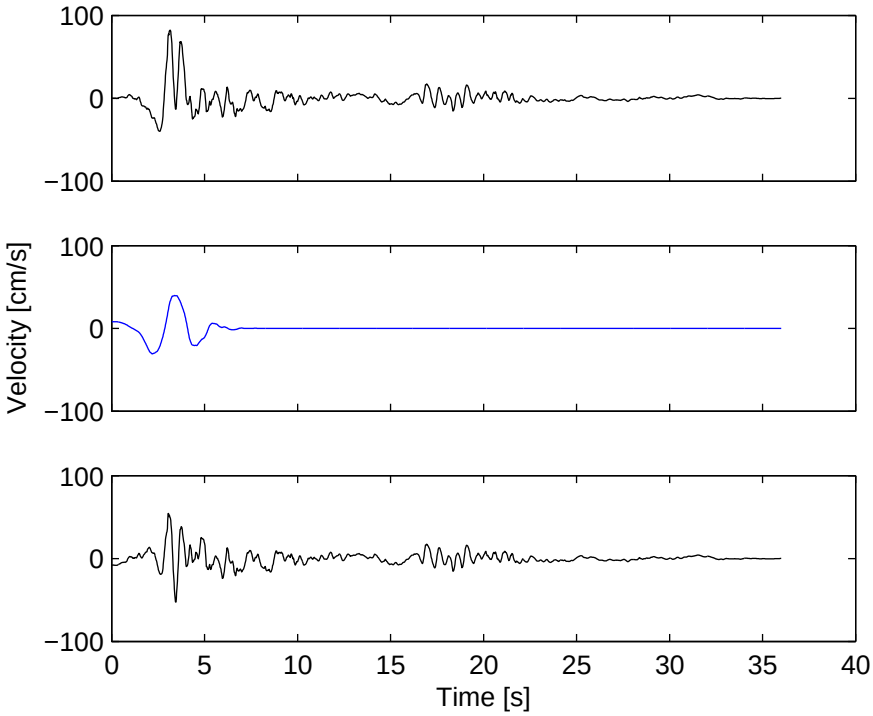


NGA record # 821
Pulse # 37
Filename = ERZIKAN/ERZ_032_FN.acc

Magnitude = 6.7
Closest distance = 4.38 km
Epicentral distance = 8.97 km
T_p = 2.7 s
PGV = 95 cm/s

Somerville et al. amplification factors
X = 0.3
θ = 2
FN amplification at 3s = 1.3
Spudich isochrone factor = 2.1

1992 Cape Mendocino, Petrolia

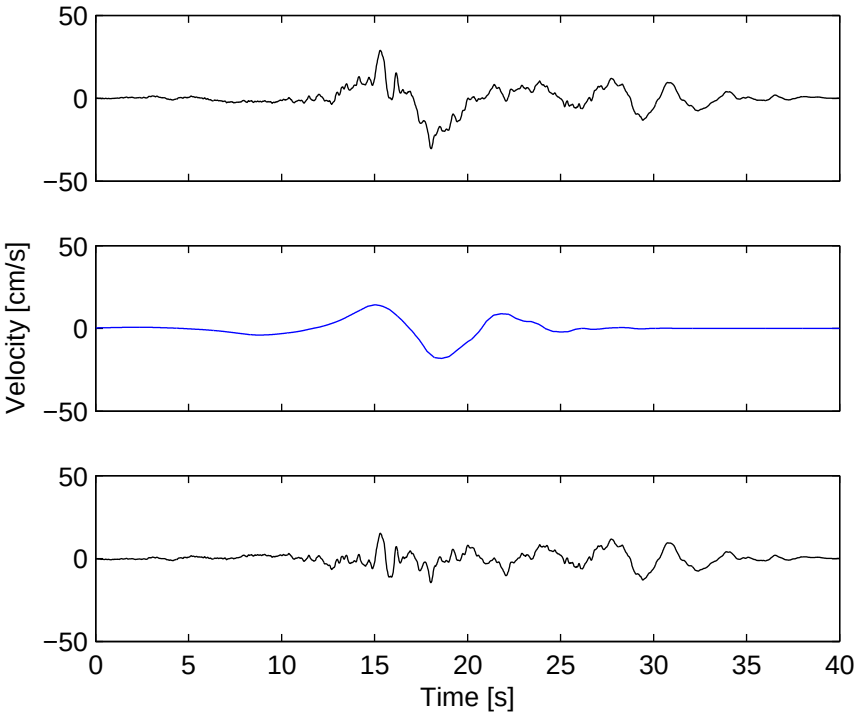


NGA record # 828
Pulse # 38
Filename = CAPEMEND/PET_260_FN.acc

Magnitude = 7
Closest distance = 8.18 km
Epicentral distance = 4.51 km
T_p = 3.0 s
PGV = 82 cm/s

Somerville et al. amplification factors
X = 0.2
θ = 51
FN amplification at 3s = 0.8
Spudich isochrone factor = 1.1

1992 Landers, Barstow

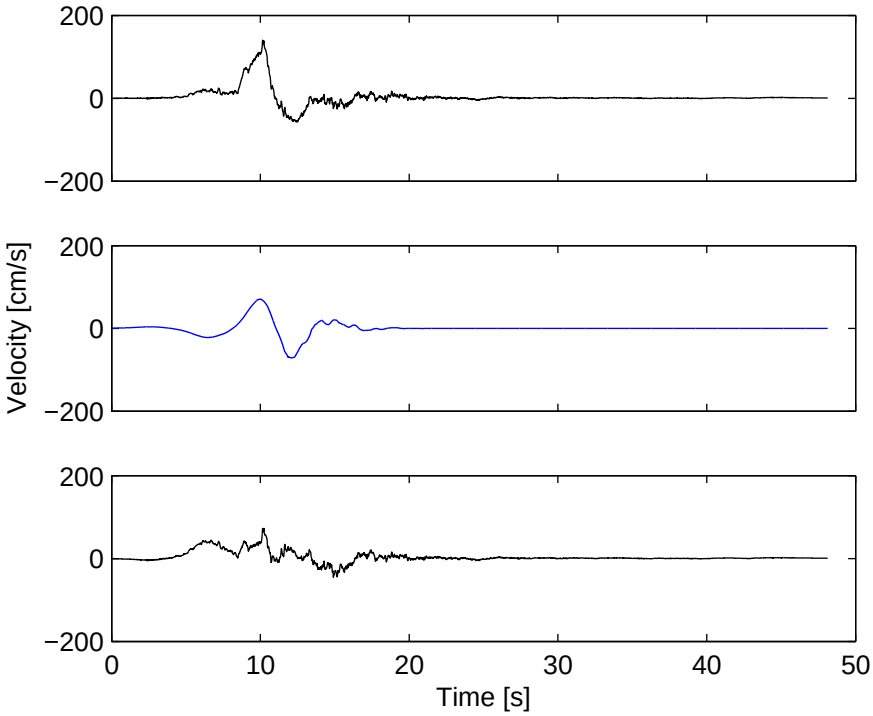


NGA record # 838
Pulse # 39
Filename = LANDERS/BRS_225_FN.acc

Magnitude = 7.3
Closest distance = 34.86 km
Epicentral distance = 94.77 km
T_p = 8.9 s
PGV = 30 cm/s

Somerville et al. amplification factors
X = 0.9
θ = 23
FN amplification at 3s = 1.4
Spudich isochrone factor = 2.9

1992 Landers, Lucerne

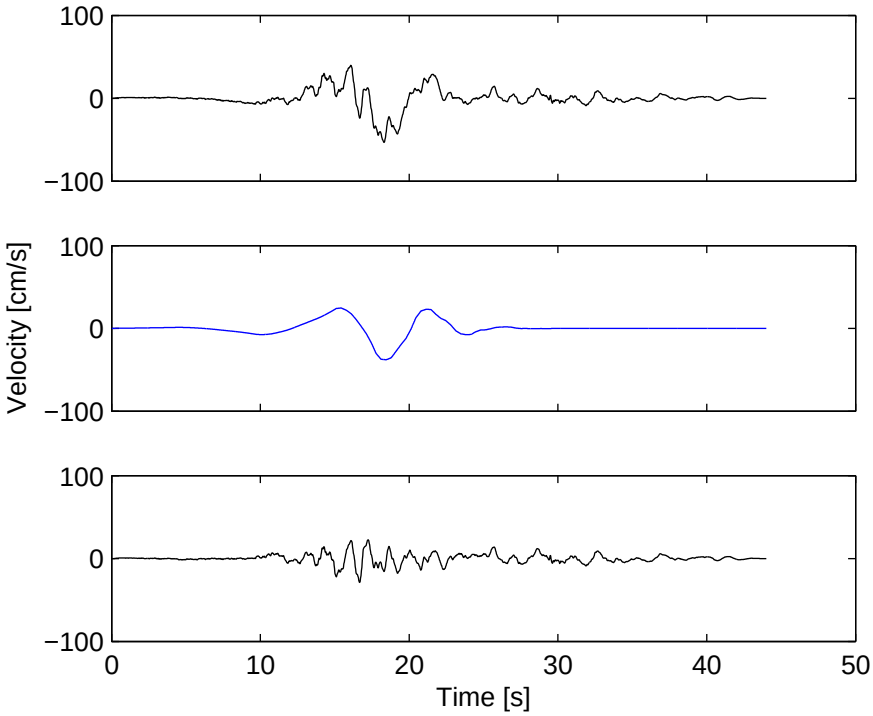


NGA record # 879
Pulse # 40
Filename = LANDERS/LCN_239_FN.acc

Magnitude = 7.3
Closest distance = 2.19 km
Epicentral distance = 44.02 km
T_p = 5.1 s
PGV = 140 cm/s

Somerville et al. amplification factors
X = 0.7
θ = 20
FN amplification at 3s = 1.5
Spudich isochrone factor = 2.7

1992 Landers, Yermo Fire Station

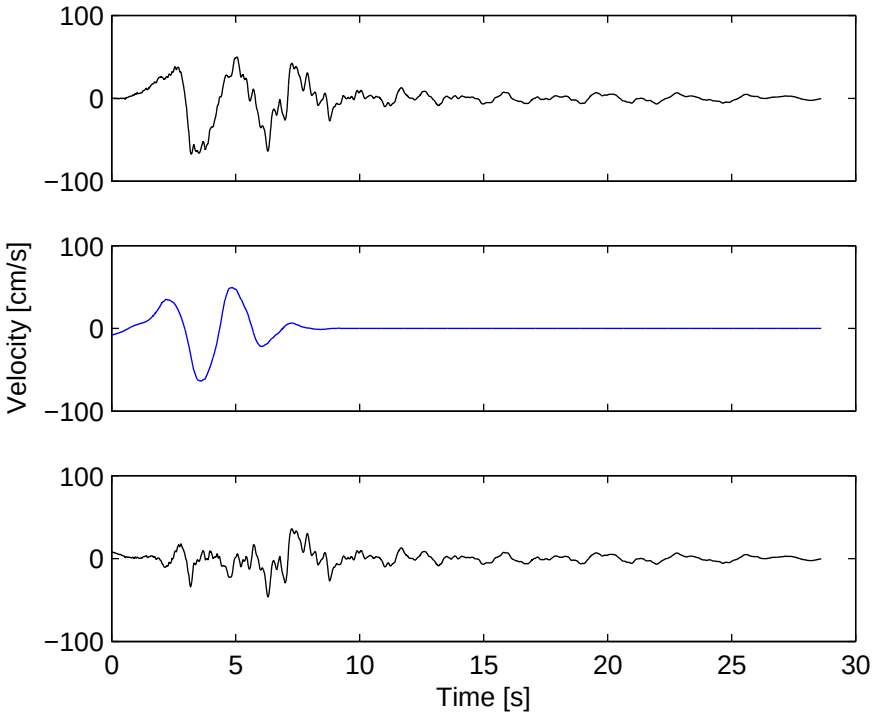


NGA record # 900
Pulse # 41
Filename = LANDERS/YER_225_FN.acc

Magnitude = 7.3
Closest distance = 23.62 km
Epicentral distance = 85.99 km
T_p = 7.5 s
PGV = 53 cm/s

Somerville et al. amplification factors
X = 0.9
θ = 17
FN amplification at 3s = 1.5
Spudich isochrone factor = 3.3

1994 Northridge-01, Jensen Filter Plant

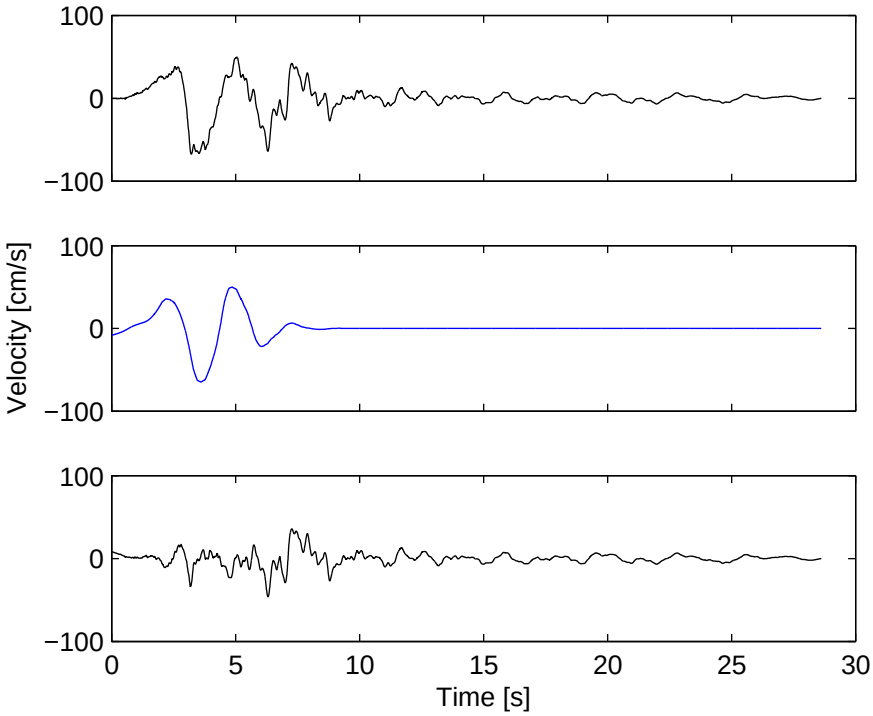


NGA record # 982
Pulse # 42
Filename = NORTHR/JEN_032_FN.acc

Magnitude = 6.7
Closest distance = 5.43 km
Epicentral distance = 12.97 km
T_p = 3.5 s
PGV = 67 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 14
FN amplification at 3s = 1.2
Spudich isochrone factor = 2.4

1994 Northridge-01, Jensen Filter Plant Generator

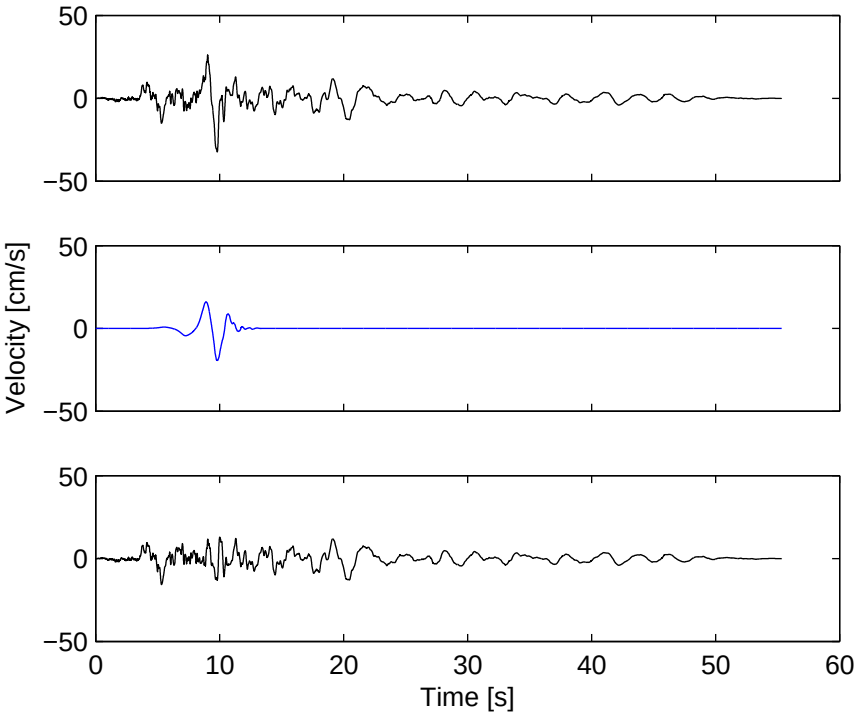


NGA record # 983
Pulse # 43
Filename = NORTHR/0655_032_FN.acc

Magnitude = 6.7
Closest distance = 5.43 km
Epicentral distance = 13 km
T_p = 3.5 s
PGV = 67 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 14
FN amplification at 3s = 1.2
Spudich isochrone factor = 2.4

1994 Northridge-01, LA - Wadsworth VA Hospital North

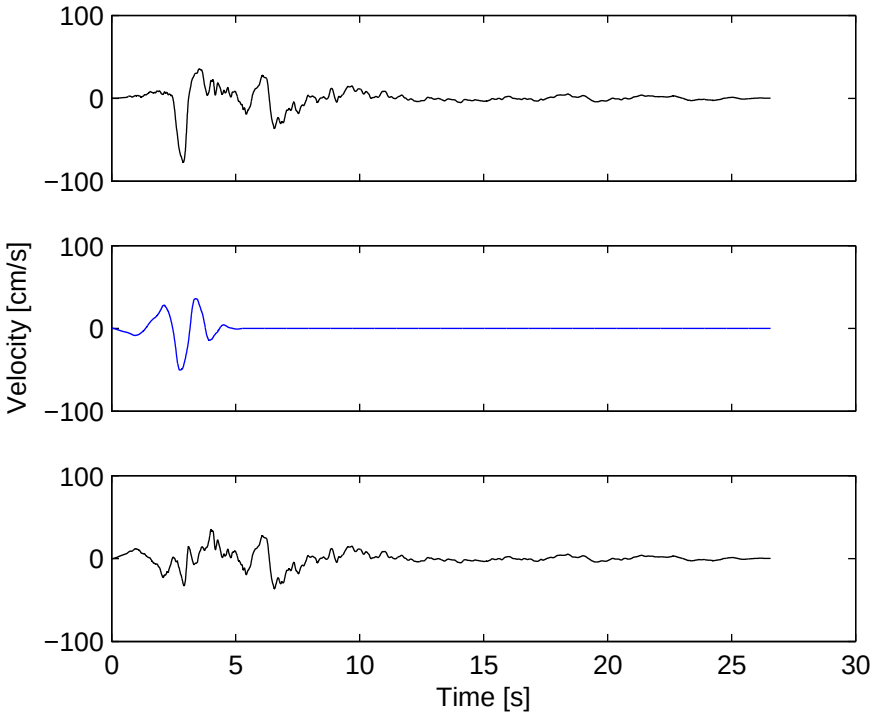


NGA record # 1009
Pulse # 44
Filename = NORTHR/5082A_032_FN.acc

Magnitude = 6.7
Closest distance = 23.6 km
Epicentral distance = 19.55 km
T_p = 2.4 s
PGV = 32 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 1.3

1994 Northridge-01, LA Dam

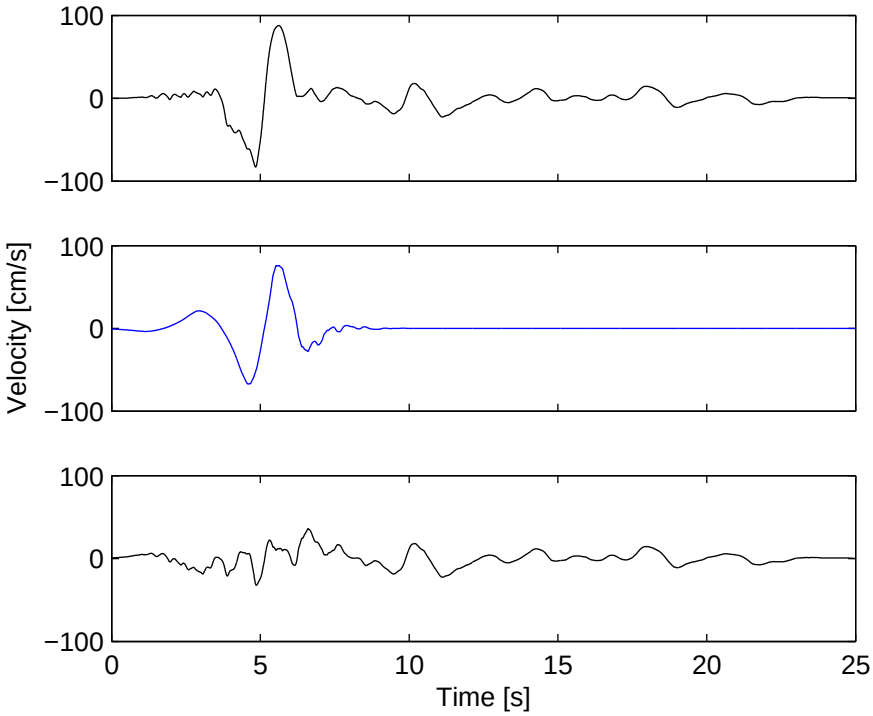


NGA record # 1013
Pulse # 45
Filename = NORTHR/LDM_032_FN.acc

Magnitude = 6.7
Closest distance = 5.92 km
Epicentral distance = 11.79 km
T_p = 1.7 s
PGV = 77 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 16
FN amplification at 3s = 1.2
Spudich isochrone factor = 2.1

1994 Northridge-01, Newhall - W Pico Canyon Rd.

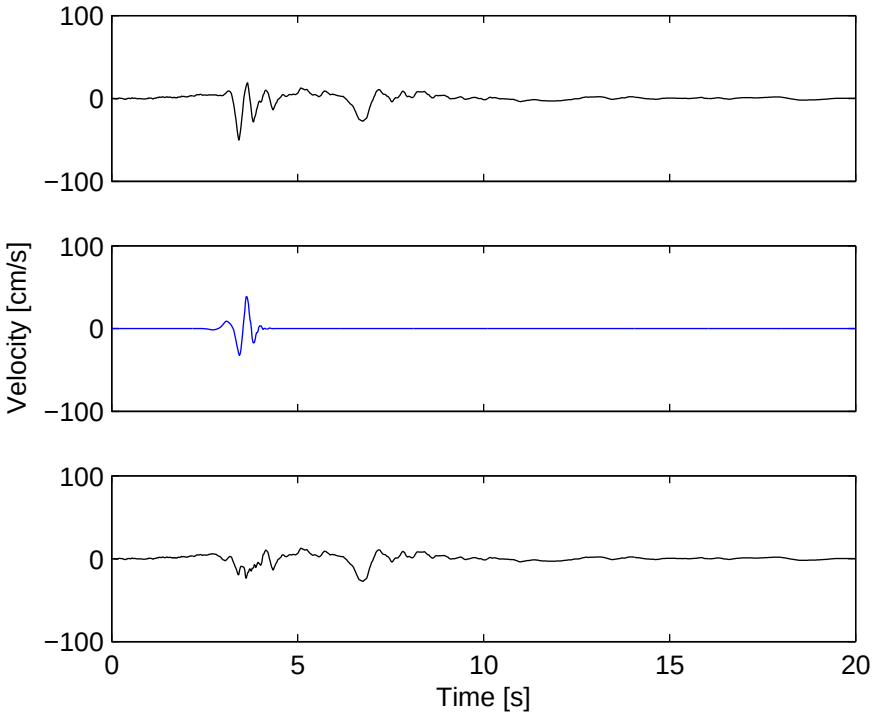


NGA record # 1045
Pulse # 46
Filename = NORTHR/WPI_032_FN.acc

Magnitude = 6.7
Closest distance = 5.48 km
Epicentral distance = 21.55 km
T_p = 2.4 s
PGV = 88 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 3.1

1994 Northridge-01, Pacoima Dam (downstr)

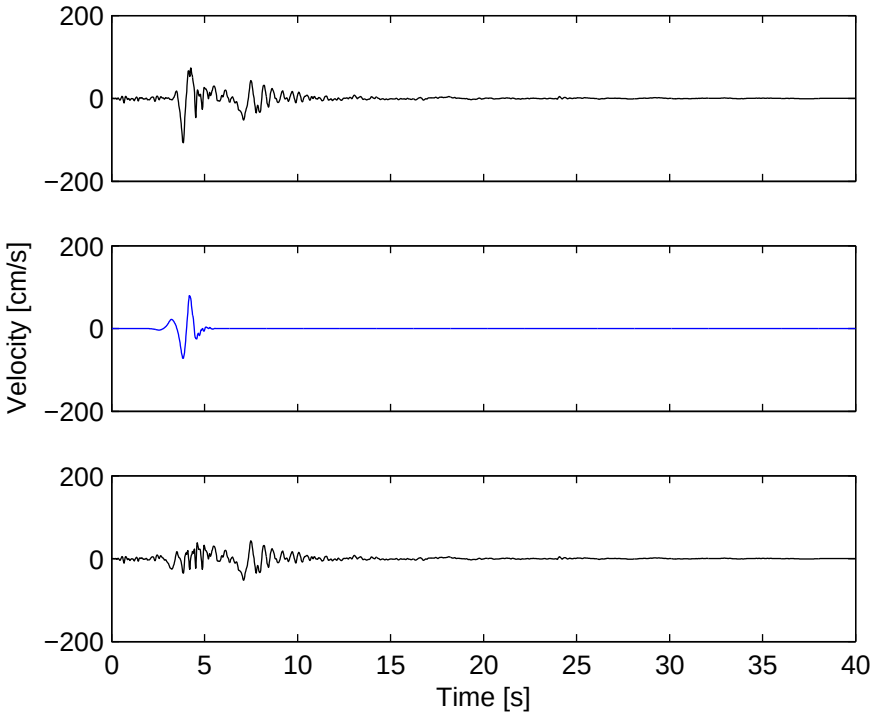


NGA record # 1050
Pulse # 47
Filename = NORTHR/PAC_032_FN.acc

Magnitude = 6.7
Closest distance = 7.01 km
Epicentral distance = 20.36 km
T_p = 0.5 s
PGV = 50 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 1
FN amplification at 3s = 1.2
Spudich isochrone factor = 4.0

1994 Northridge-01, Pacoima Dam (upper left)

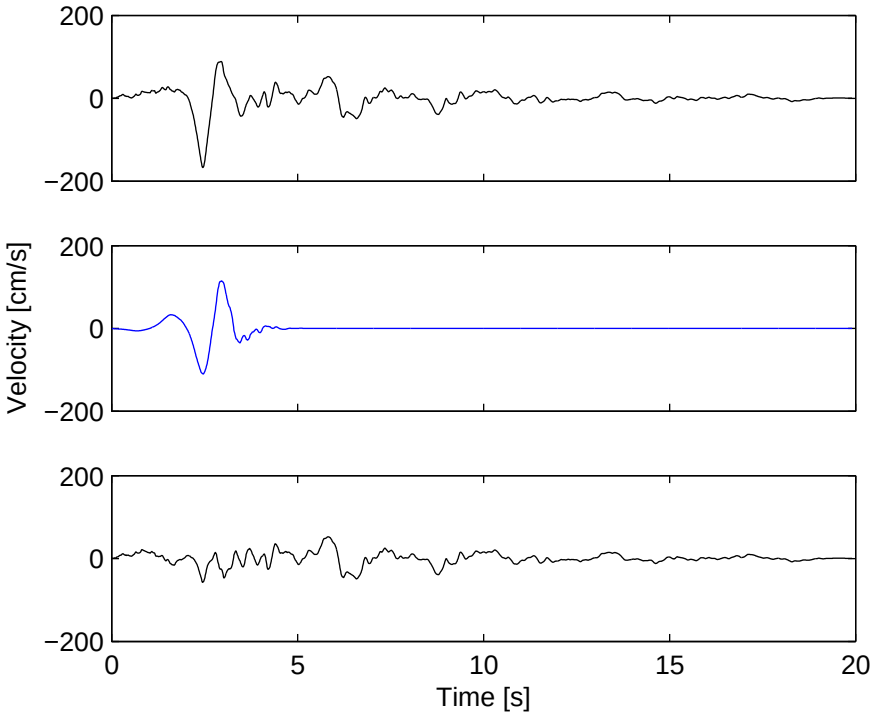


NGA record # 1051
Pulse # 48
Filename = NORTHR/PUL_032_FN.acc

Magnitude = 6.7
Closest distance = 7.01 km
Epicentral distance = 20.36 km
T_p = 0.9 s
PGV = 107 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 1
FN amplification at 3s = 1.2
Spudich isochrone factor = 4.0

1994 Northridge-01, Rinaldi Receiving Sta

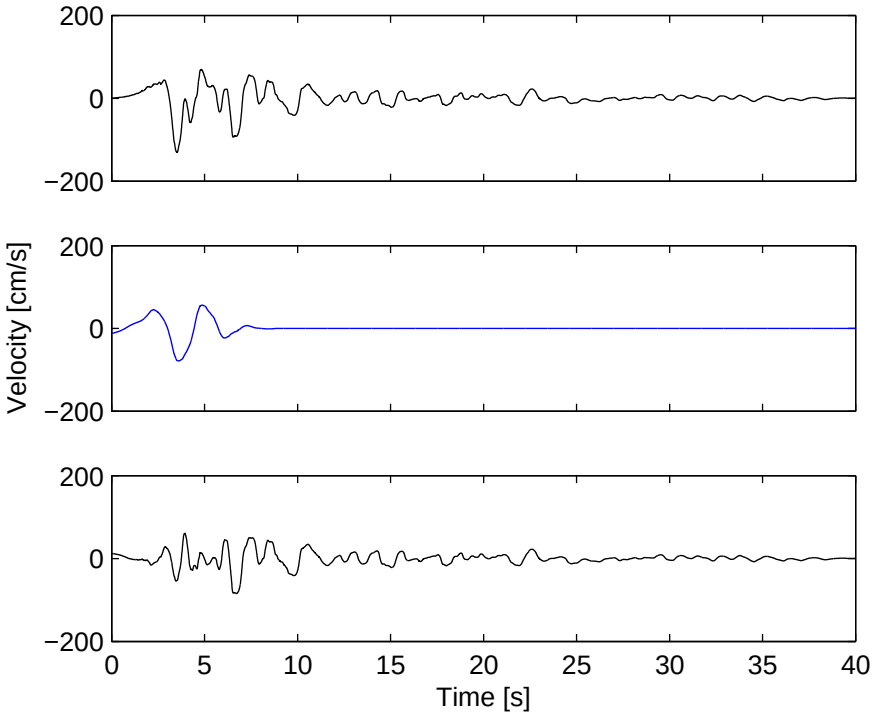


NGA record # 1063
Pulse # 49
Filename = NORTHR/RRS_032_FN.acc

Magnitude = 6.7
Closest distance = 6.5 km
Epicentral distance = 10.91 km
T_p = 1.2 s
PGV = 167 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 18
FN amplification at 3s = 1.2
Spudich isochrone factor = 1.9

1994 Northridge-01, Sylmar - Converter Sta

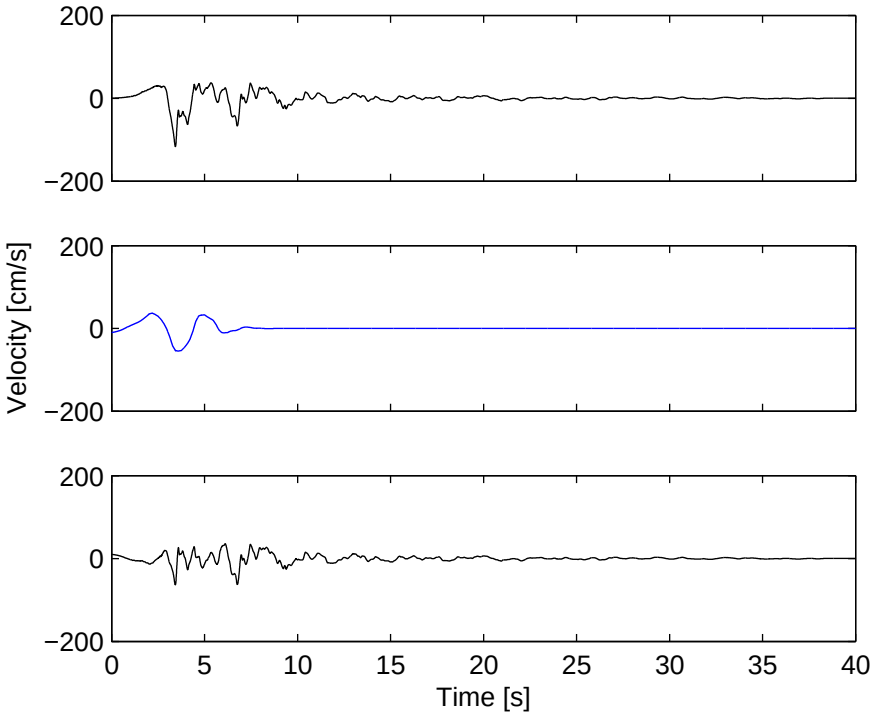


NGA record # 1084
Pulse # 50
Filename = NORTHR/SCS_032_FN.acc

Magnitude = 6.7
Closest distance = 5.35 km
Epicentral distance = 13.11 km
T_p = 3.5 s
PGV = 130 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 13
FN amplification at 3s = 1.2
Spudich isochrone factor = 2.5

1994 Northridge-01, Sylmar - Converter Sta East

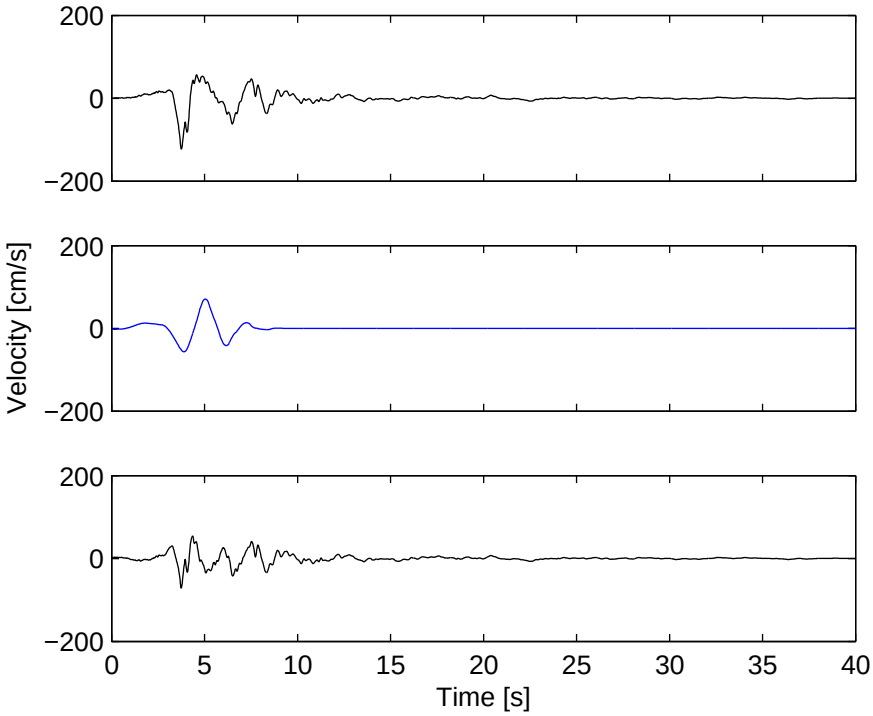


NGA record # 1085
Pulse # 51
Filename = NORTHR/SCE_032_FN.acc

Magnitude = 6.7
Closest distance = 5.19 km
Epicentral distance = 13.6 km
T_p = 3.5 s
PGV = 117 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 12
FN amplification at 3s = 1.2
Spudich isochrone factor = 2.6

1994 Northridge-01, Sylmar - Olive View Med FF

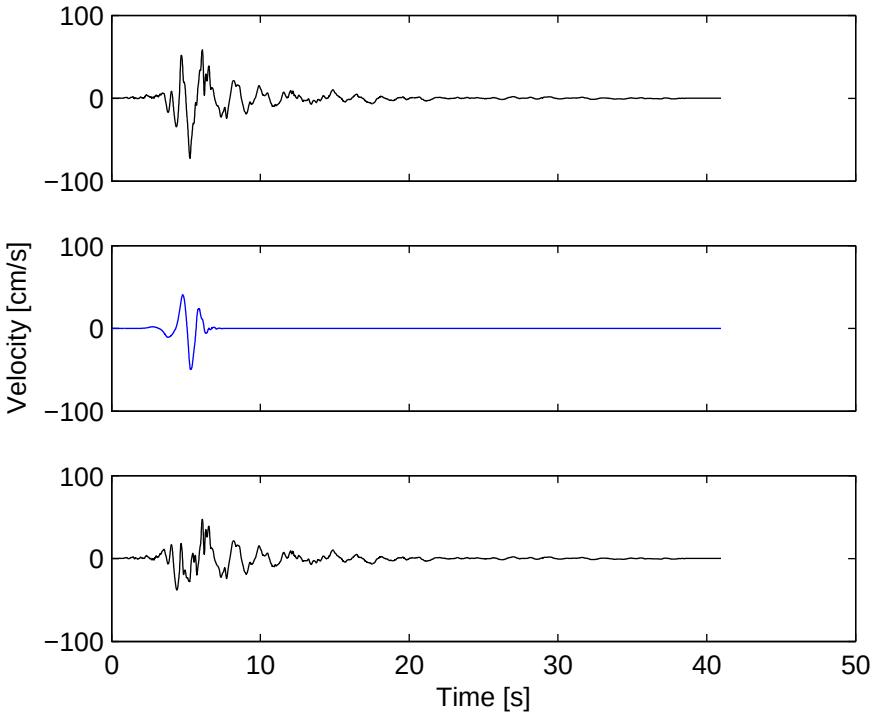


NGA record # 1086
Pulse # 52
Filename = NORTHR/SYL_032_FN.acc

Magnitude = 6.7
Closest distance = 5.3 km
Epicentral distance = 16.77 km
T_p = 3.1 s
PGV = 123 cm/s

Somerville et al. amplification factors
X = 0.8
θ = 6
FN amplification at 3s = 1.2
Spudich isochrone factor = 3.6

1995 Kobe, Japan, Takarazuka

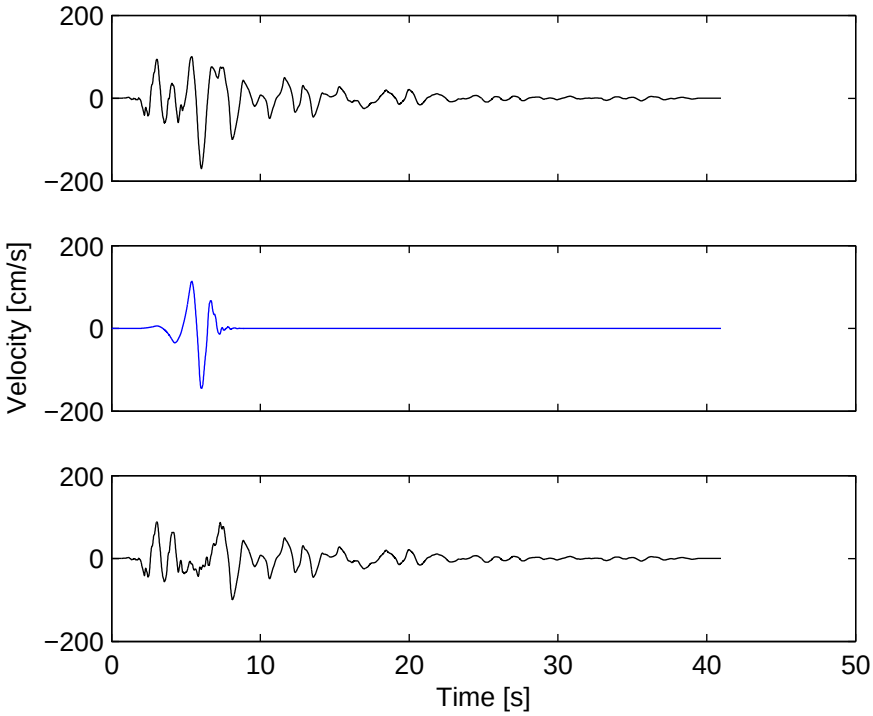


NGA record # 1119
Pulse # 53
Filename = KOBE/TAZ_140_FN.acc

Magnitude = 6.9
Closest distance = 0.27 km
Epicentral distance = 38.6 km
T_p = 1.4 s
PGV = 73 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 2
FN amplification at 3s = 1.7
Spudich isochrone factor = 4.0

1995 Kobe, Japan, Takatori

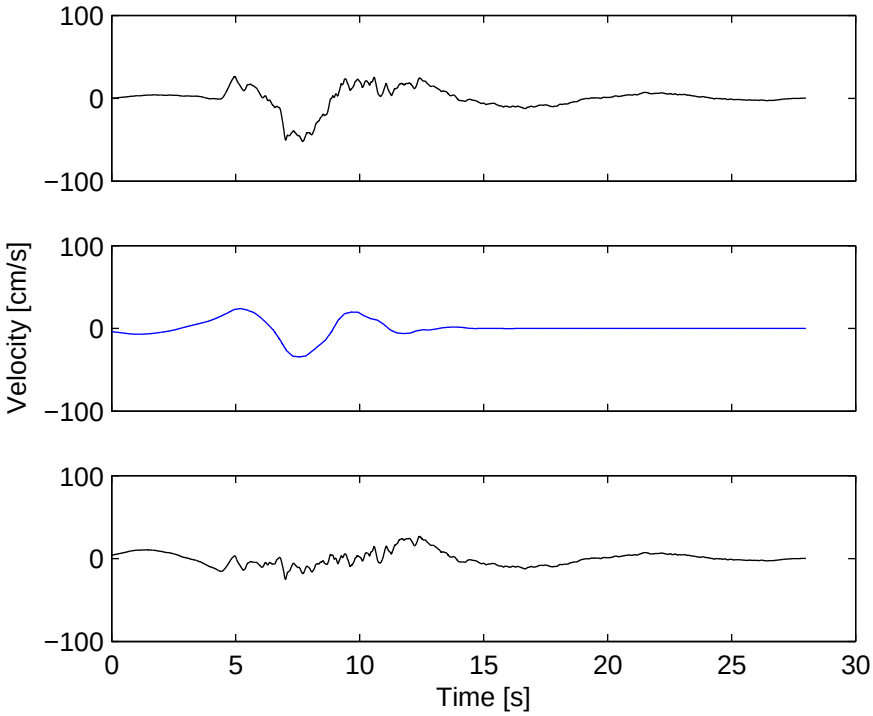


NGA record # 1120
Pulse # 54
Filename = KOBE/TAK_140_FN.acc

Magnitude = 6.9
Closest distance = 1.47 km
Epicentral distance = 13.12 km
T_p = 1.6 s
PGV = 170 cm/s

Somerville et al. amplification factors
X = 0.2
θ = 13
FN amplification at 3s = 1.0
Spudich isochrone factor = 3.4

1999 Kocaeli, Turkey, Gebze

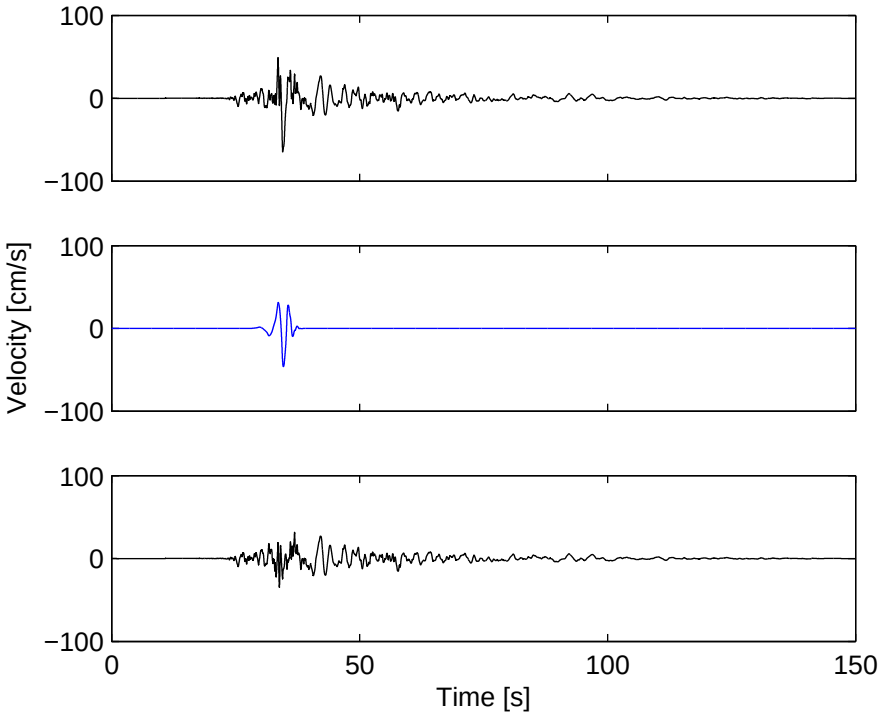


NGA record # 1161
Pulse # 55
Filename = KOCAELI/GBZ_184_FN.acc

Magnitude = 7.5
Closest distance = 10.92 km
Epicentral distance = 47.03 km
T_p = 5.9 s
PGV = 52 cm/s

Somerville et al. amplification factors
X = 0.3
θ = 24
FN amplification at 3s = 1.3
Spudich isochrone factor = 2.2

1999 Chi-Chi, Taiwan, CHY006

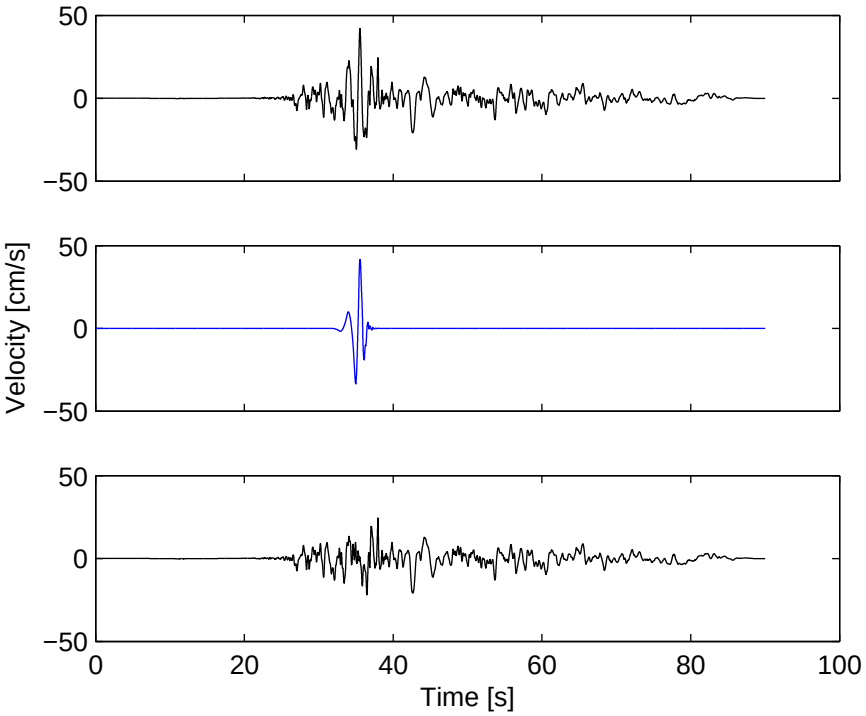


NGA record # 1182
Pulse # 56
Filename = CHICHI/CHY006_292_FN.acc

Magnitude = 7.6
Closest distance = 9.77 km
Epicentral distance = 40.47 km
T_p = 2.6 s
PGV = 65 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 3.2

1999 Chi-Chi, Taiwan, CHY035

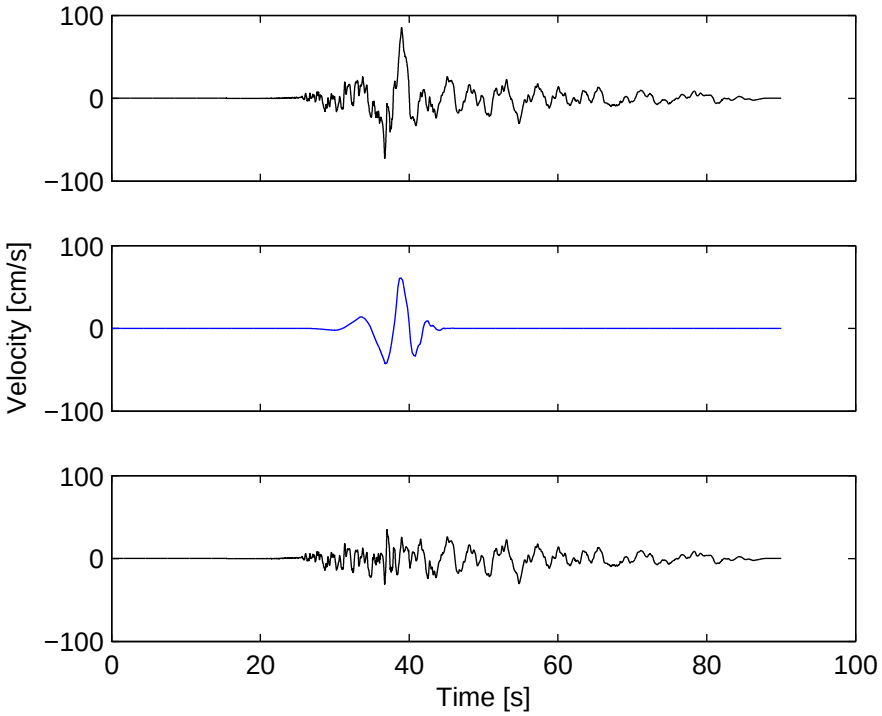


NGA record # 1202
Pulse # 57
Filename = CHICHI/CHY035_292_FN.acc

Magnitude = 7.6
Closest distance = 12.65 km
Epicentral distance = 43.9 km
T_p = 1.4 s
PGV = 42 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 3.4

1999 Chi-Chi, Taiwan, CHY101

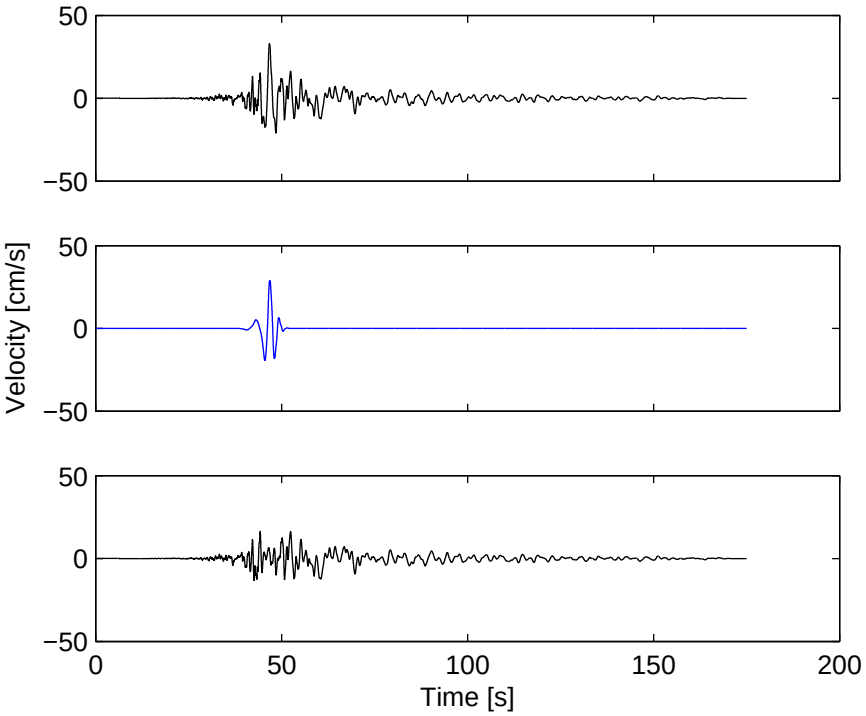


NGA record # 1244
Pulse # 58
Filename = CHICHI/CHY101_289_FN.acc

Magnitude = 7.6
Closest distance = 9.96 km
Epicentral distance = 31.96 km
T_p = 4.8 s
PGV = 85 cm/s

Somerville et al. amplification factors
X = 0.3
θ = 4
FN amplification at 3s = 0.9
Spudich isochrone factor = 1.9

1999 Chi-Chi, Taiwan, TAP003

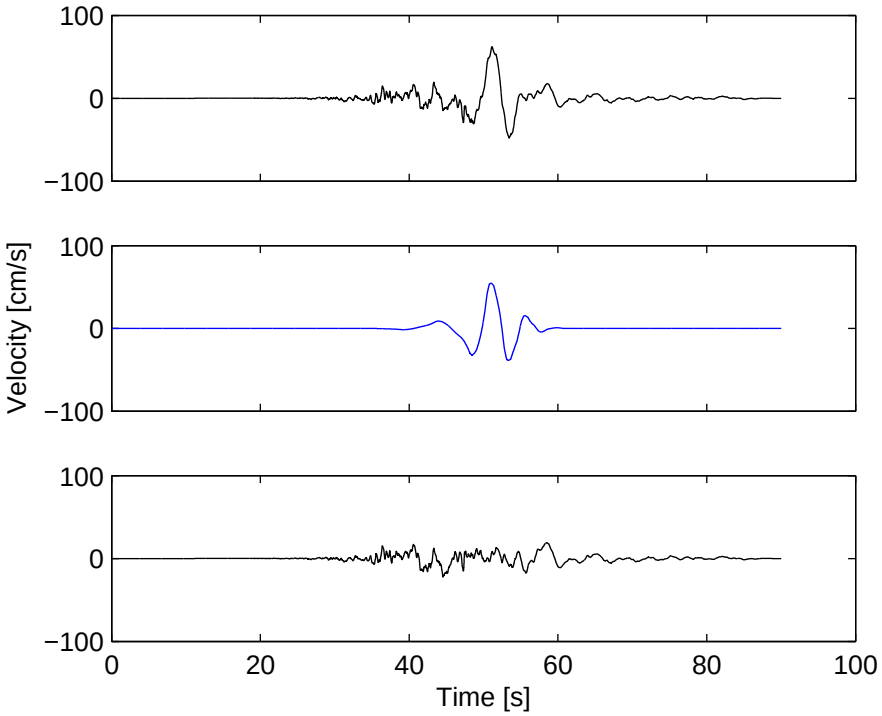


NGA record # 1410
Pulse # 59
Filename = CHICHI/TAP003_306_FN.acc

Magnitude = 7.6
Closest distance = 102.39 km
Epicentral distance = 151.65 km
T_p = 3.4 s
PGV = 33 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.8

1999 Chi-Chi, Taiwan, TCU029

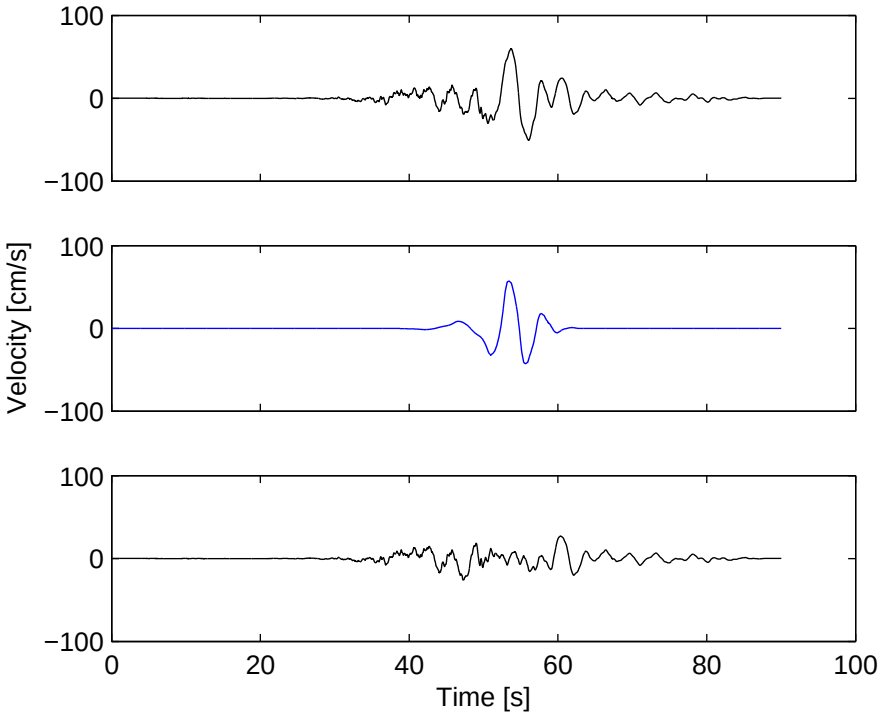


NGA record # 1476
Pulse # 60
Filename = CHICHI/TCU029_306_FN.acc

Magnitude = 7.6
Closest distance = 28.05 km
Epicentral distance = 79.2 km
T_p = 6.4 s
PGV = 62 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.7

1999 Chi-Chi, Taiwan, TCU031

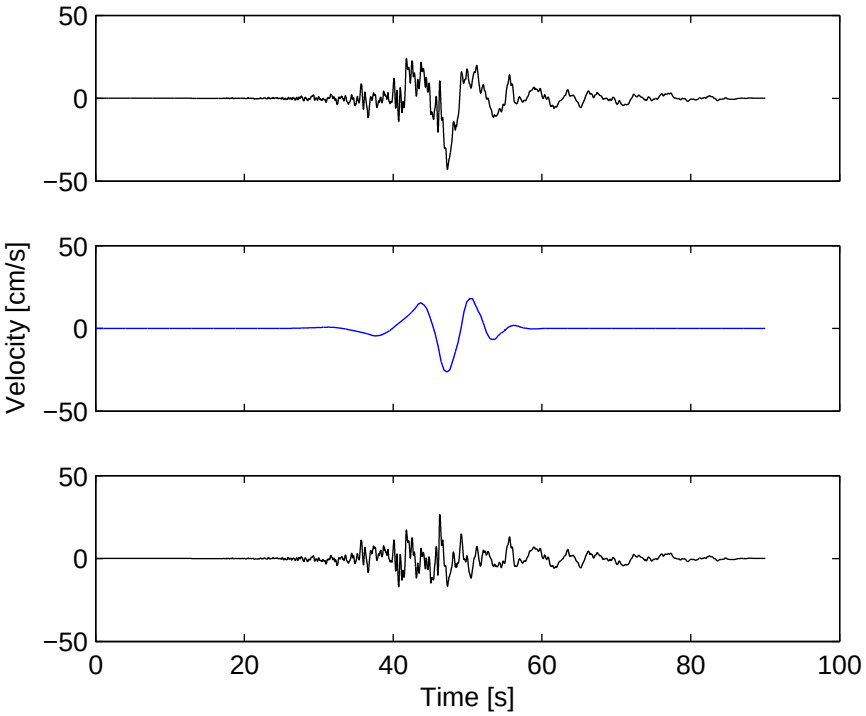


NGA record # 1477
Pulse # 61
Filename = CHICHI/TCU031_306_FN.acc

Magnitude = 7.6
Closest distance = 30.18 km
Epicentral distance = 80.09 km
T_p = 6.2 s
PGV = 60 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.6

1999 Chi-Chi, Taiwan, TCU034

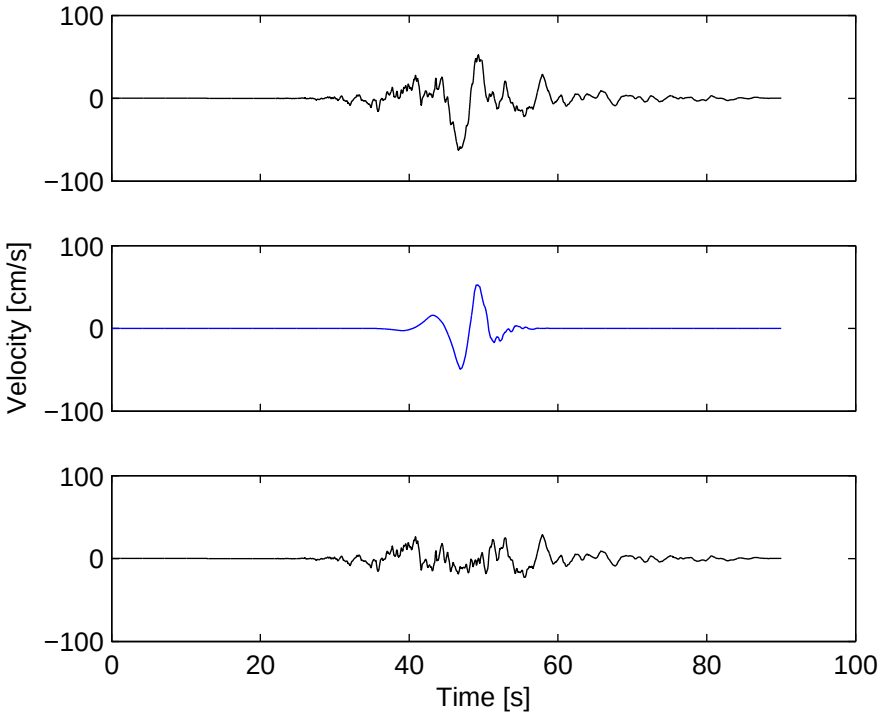


NGA record # 1479
Pulse # 62
Filename = CHICHI/TCU034_306_FN.acc

Magnitude = 7.6
Closest distance = 35.69 km
Epicentral distance = 87.88 km
T_p = 8.6 s
PGV = 43 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.9

1999 Chi-Chi, Taiwan, TCU036

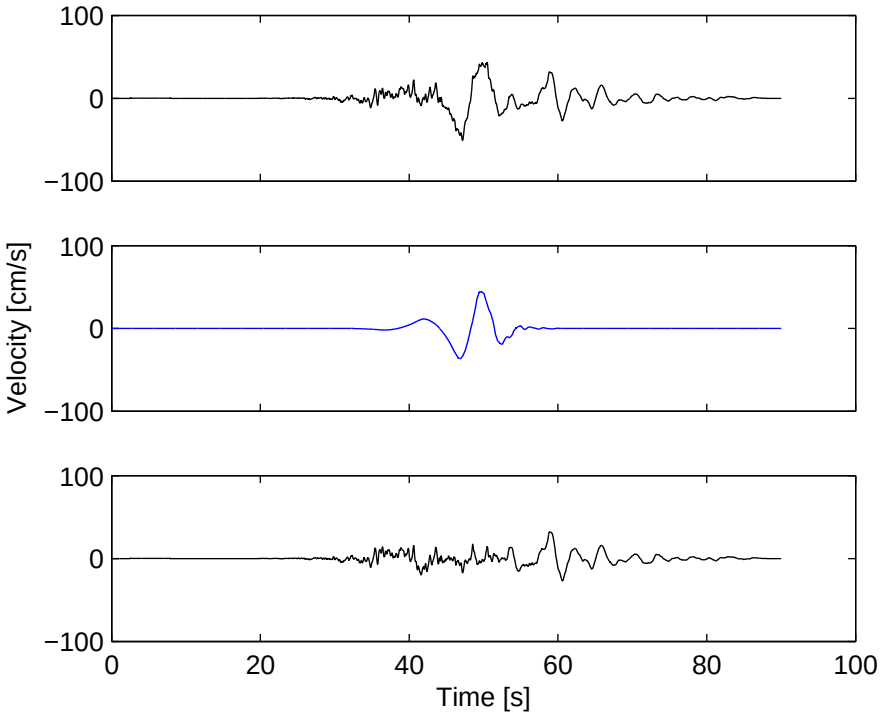


NGA record # 1480
Pulse # 63
Filename = CHICHI/TCU036_277_FN.acc

Magnitude = 7.6
Closest distance = 19.84 km
Epicentral distance = 67.81 km
T_p = 5.4 s
PGV = 62 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 16
FN amplification at 3s = 0.9
Spudich isochrone factor = 3.4

1999 Chi-Chi, Taiwan, TCU038

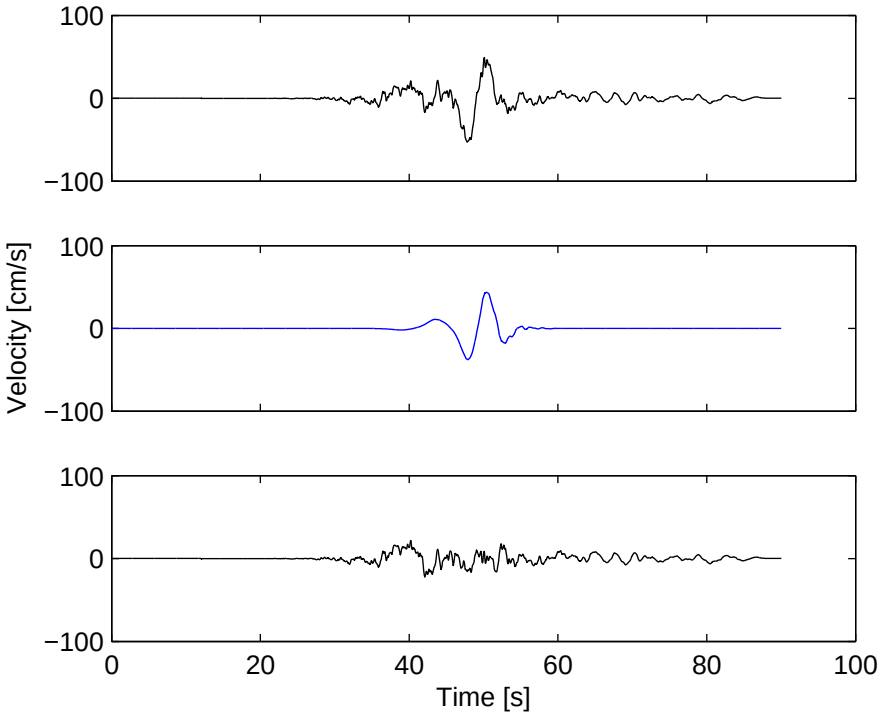


NGA record # 1481
Pulse # 64
Filename = CHICHI/TCU038_277_FN.acc

Magnitude = 7.6
Closest distance = 25.44 km
Epicentral distance = 73.11 km
T_p = 7.0 s
PGV = 51 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 18
FN amplification at 3s = 0.9
Spudich isochrone factor = 3.4

1999 Chi-Chi, Taiwan, TCU040

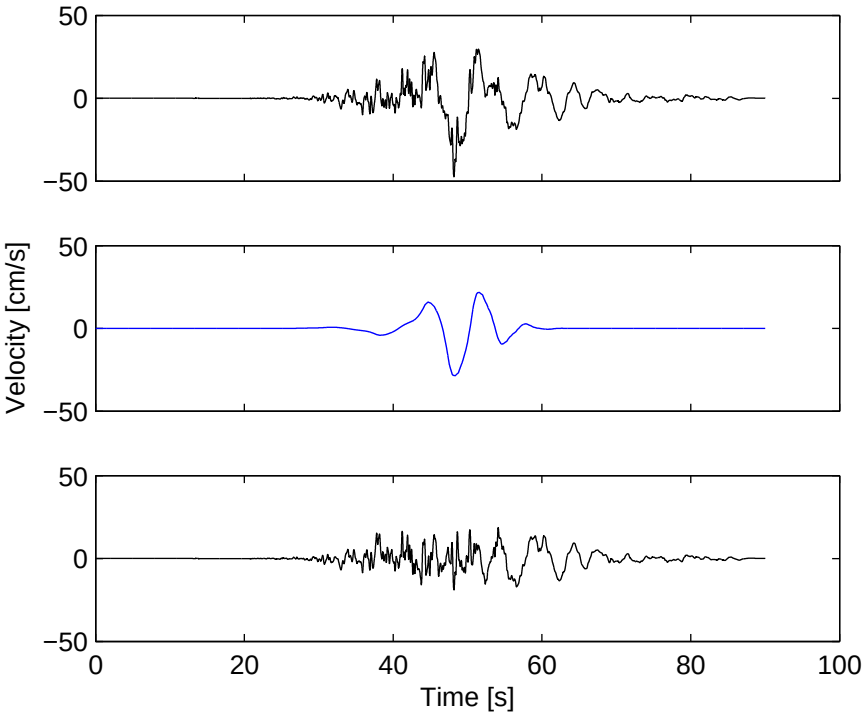


NGA record # 1483
Pulse # 65
Filename = CHICHI/TCU040_277_FN.acc

Magnitude = 7.6
Closest distance = 22.08 km
Epicentral distance = 69.04 km
T_p = 6.3 s
PGV = 53 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 18
FN amplification at 3s = 0.9
Spudich isochrone factor = 3.2

1999 Chi-Chi, Taiwan, TCU042

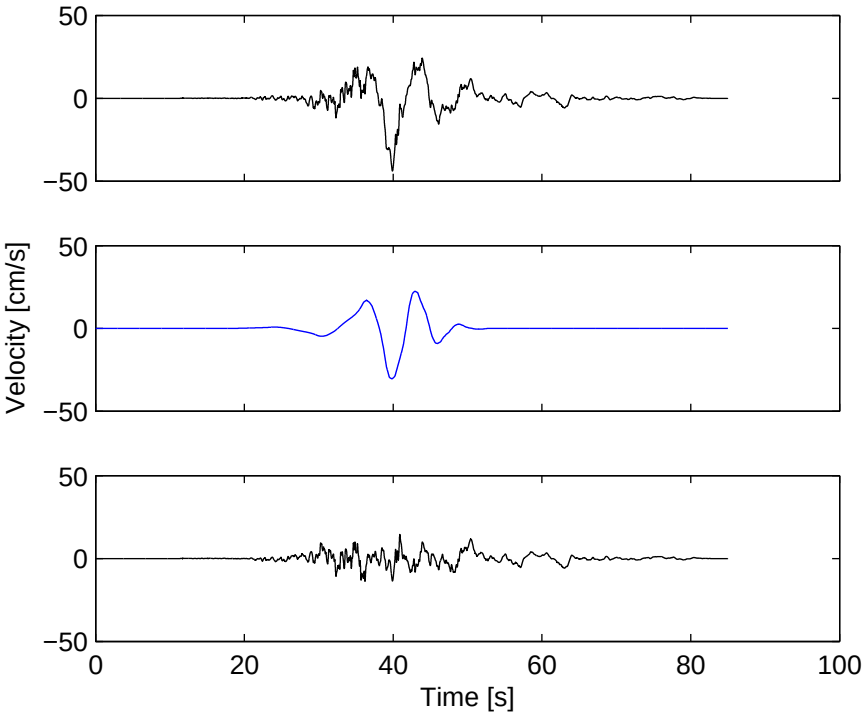


NGA record # 1484
Pulse # 66
Filename = CHICHI/TCU042_306_FN.acc

Magnitude = 7.6
Closest distance = 26.32 km
Epicentral distance = 78.37 km
T_p = 9.1 s
PGV = 47 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.8

1999 Chi-Chi, Taiwan, TCU046

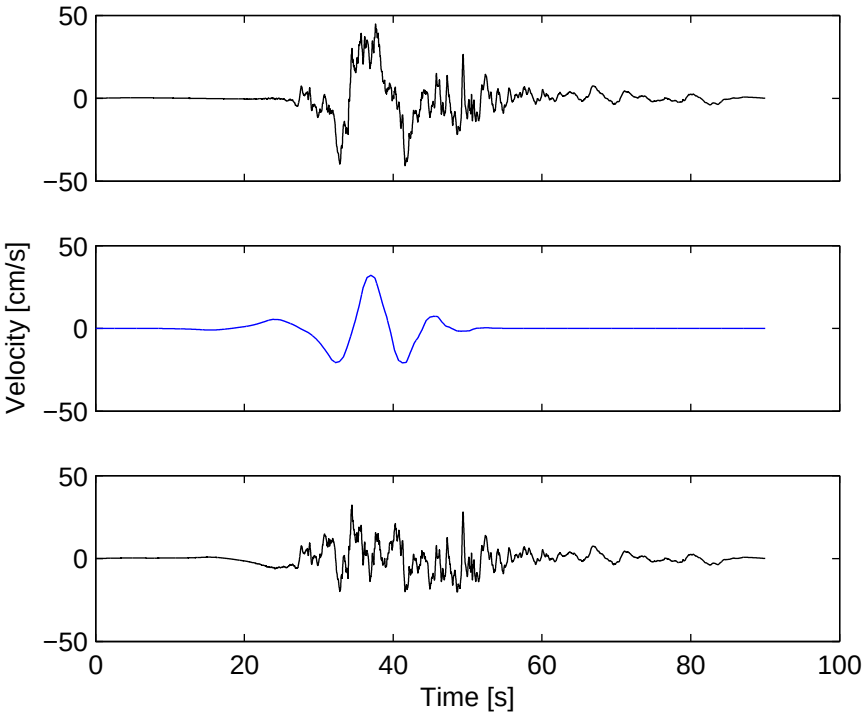


NGA record # 1486
Pulse # 67
Filename = CHICHI/TCU046_306_FN.acc

Magnitude = 7.6
Closest distance = 16.74 km
Epicentral distance = 68.89 km
T_p = 8.6 s
PGV = 44 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.9

1999 Chi-Chi, Taiwan, TCU049

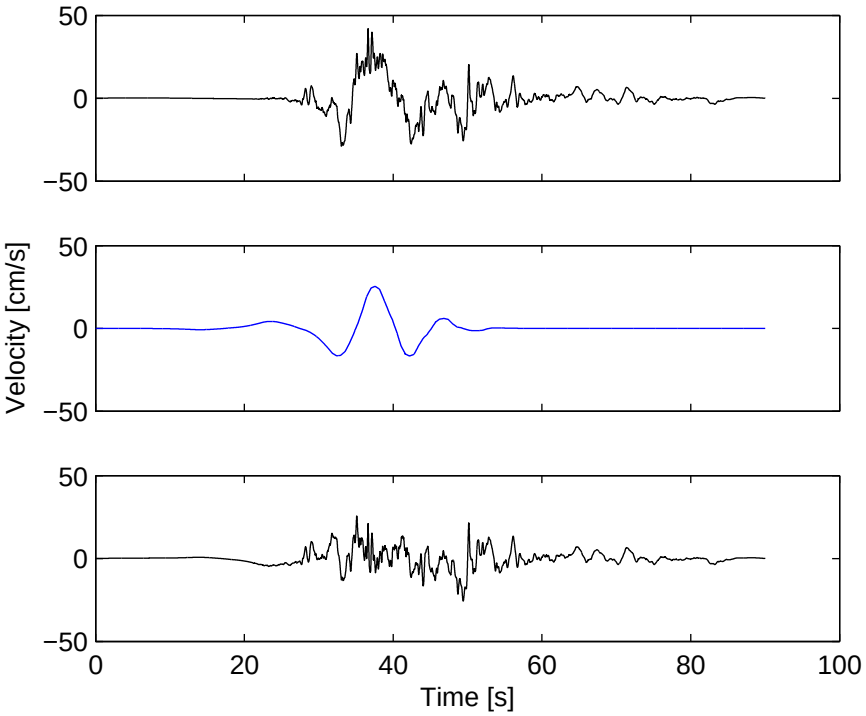


NGA record # 1489
Pulse # 68
Filename = CHICHI/TCU049_278_FN.acc

Magnitude = 7.6
Closest distance = 3.78 km
Epicentral distance = 38.91 km
T_p = 11.8 s
PGV = 45 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 10
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.9

1999 Chi-Chi, Taiwan, TCU053

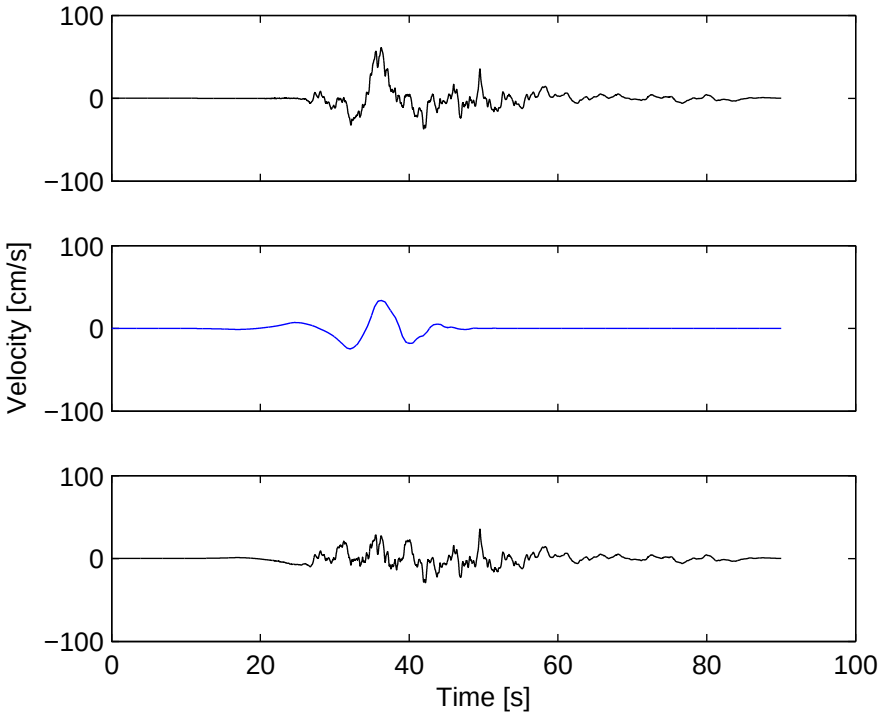


NGA record # 1493
Pulse # 69
Filename = CHICHI/TCU053_278_FN.acc

Magnitude = 7.6
Closest distance = 5.97 km
Epicentral distance = 41.2 km
T_p = 12.9 s
PGV = 42 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 12
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.6

1999 Chi-Chi, Taiwan, TCU054

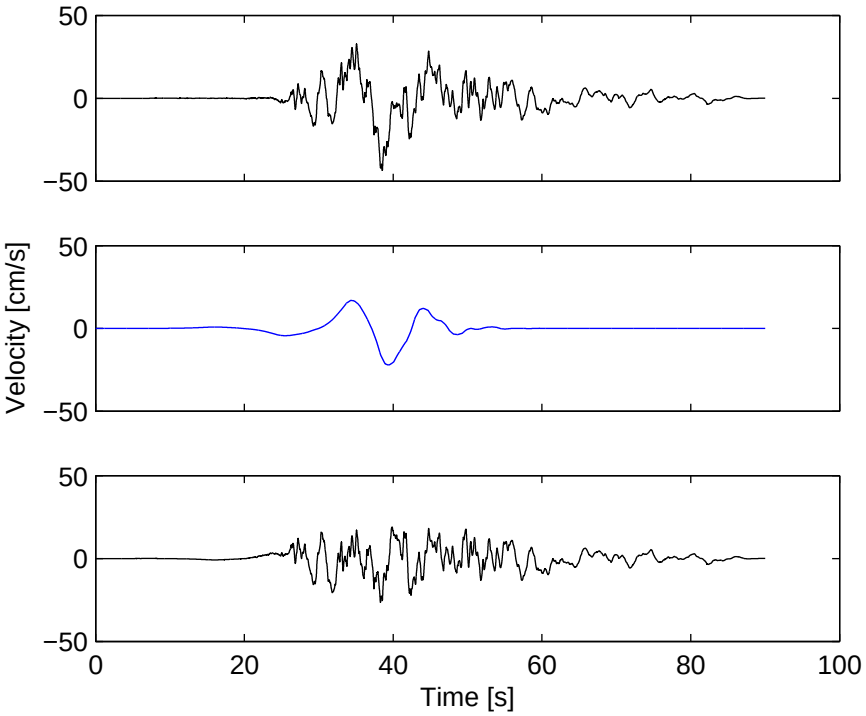


NGA record # 1494
Pulse # 70
Filename = CHICHI/TCU054_283_FN.acc

Magnitude = 7.6
Closest distance = 5.3 km
Epicentral distance = 37.64 km
T_p = 10.5 s
PGV = 61 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 11
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.6

1999 Chi-Chi, Taiwan, TCU056

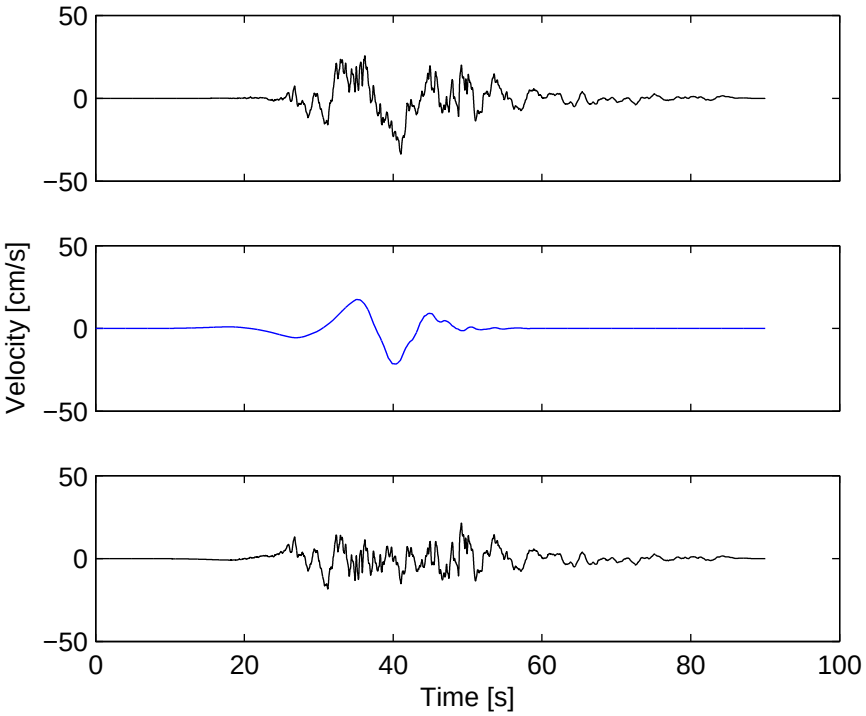


NGA record # 1496
Pulse # 71
Filename = CHICHI/TCU056_283_FN.acc

Magnitude = 7.6
Closest distance = 10.5 km
Epicentral distance = 39.73 km
T_p = 12.9 s
PGV = 44 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 14
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.2

1999 Chi-Chi, Taiwan, TCU060

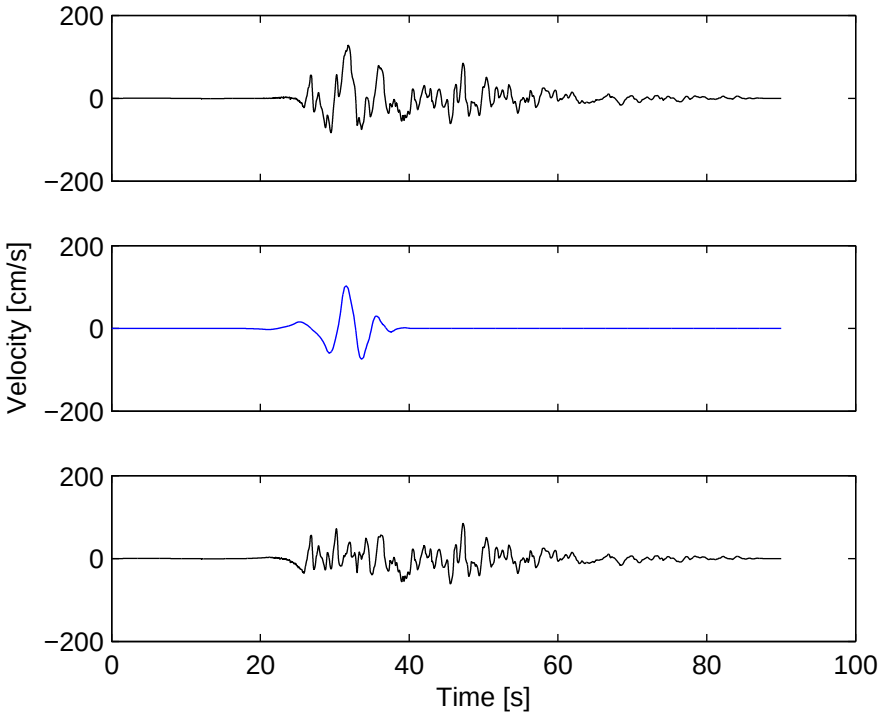


NGA record # 1499
Pulse # 72
Filename = CHICHI/TCU060_278_FN.acc

Magnitude = 7.6
Closest distance = 8.53 km
Epicentral distance = 45.37 km
T_p = 12.0 s
PGV = 34 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 14
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.5

1999 Chi-Chi, Taiwan, TCU065

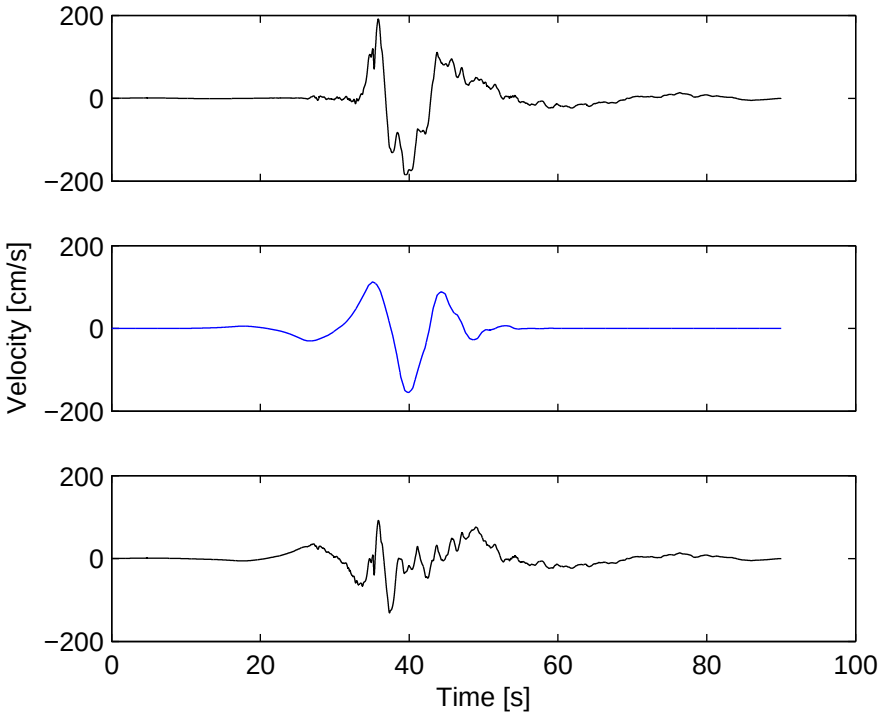


NGA record # 1503
Pulse # 73
Filename = CHICHI/TCU065_272_FN.acc

Magnitude = 7.6
Closest distance = 0.59 km
Epicentral distance = 26.67 km
T_p = 5.7 s
PGV = 128 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 6
FN amplification at 3s = 1.0
Spudich isochrone factor = 3.8

1999 Chi-Chi, Taiwan, TCU068

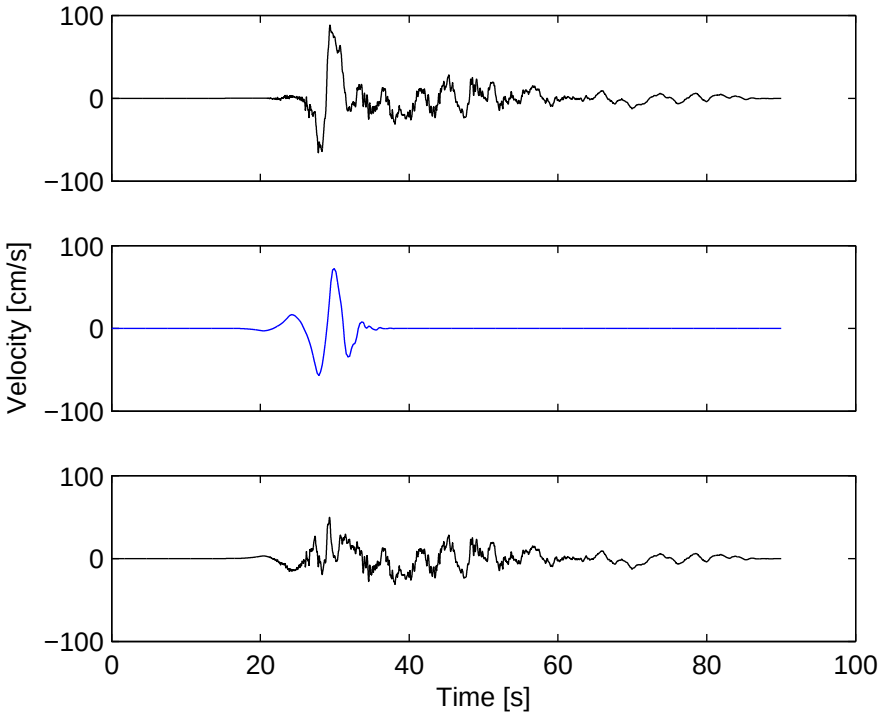


NGA record # 1505
Pulse # 74
Filename = CHICHI/TCU068_280_FN.acc

Magnitude = 7.6
Closest distance = 0.32 km
Epicentral distance = 47.86 km
T_p = 12.2 s
PGV = 191 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 7
FN amplification at 3s = 1.0
Spudich isochrone factor = 3.4

1999 Chi-Chi, Taiwan, TCU075

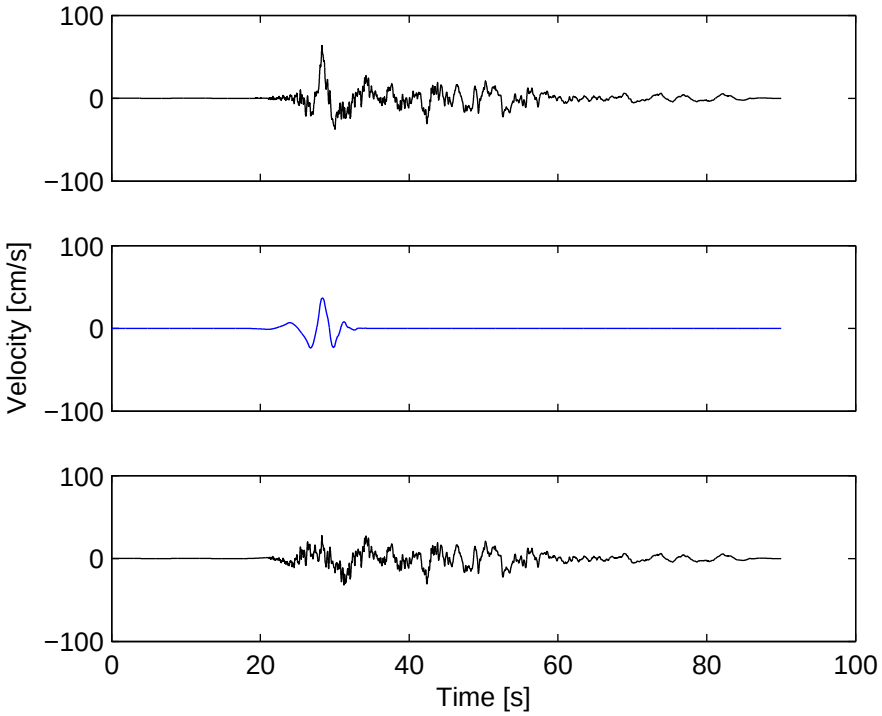


NGA record # 1510
Pulse # 75
Filename = CHICHI/TCU075_271_FN.acc

Magnitude = 7.6
Closest distance = 0.91 km
Epicentral distance = 20.67 km
T_p = 5.1 s
PGV = 88 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 4
FN amplification at 3s = 1.0
Spudich isochrone factor = 3.7

1999 Chi-Chi, Taiwan, TCU076

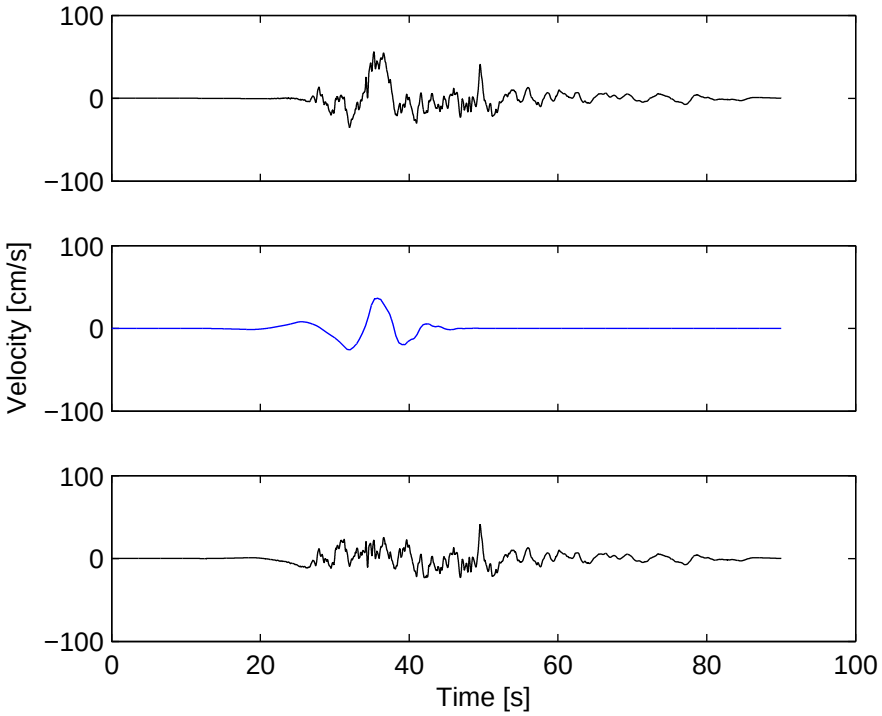


NGA record # 1511
Pulse # 76
Filename = CHICHI/TCU076_271_FN.acc

Magnitude = 7.6
Closest distance = 2.76 km
Epicentral distance = 16.03 km
T_p = 4.0 s
PGV = 64 cm/s

Somerville et al. amplification factors
X = 0.3
θ = 0
FN amplification at 3s = 1.0
Spudich isochrone factor = 3.5

1999 Chi-Chi, Taiwan, TCU082

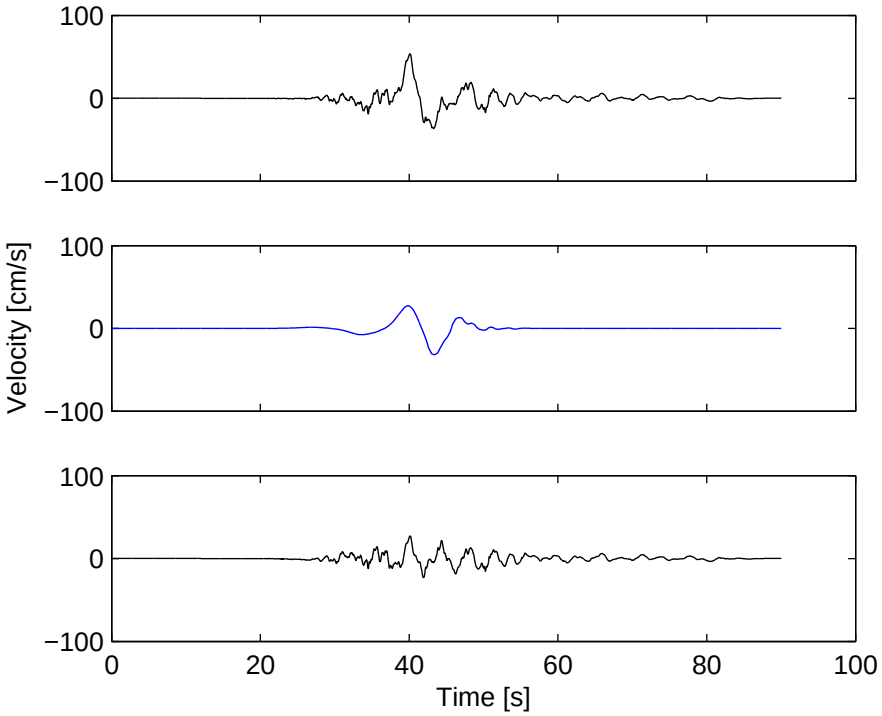


NGA record # 1515
Pulse # 77
Filename = CHICHI/TCU082_283_FN.acc

Magnitude = 7.6
Closest distance = 5.18 km
Epicentral distance = 36.2 km
T_p = 9.2 s
PGV = 56 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 11
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.6

1999 Chi-Chi, Taiwan, TCU087

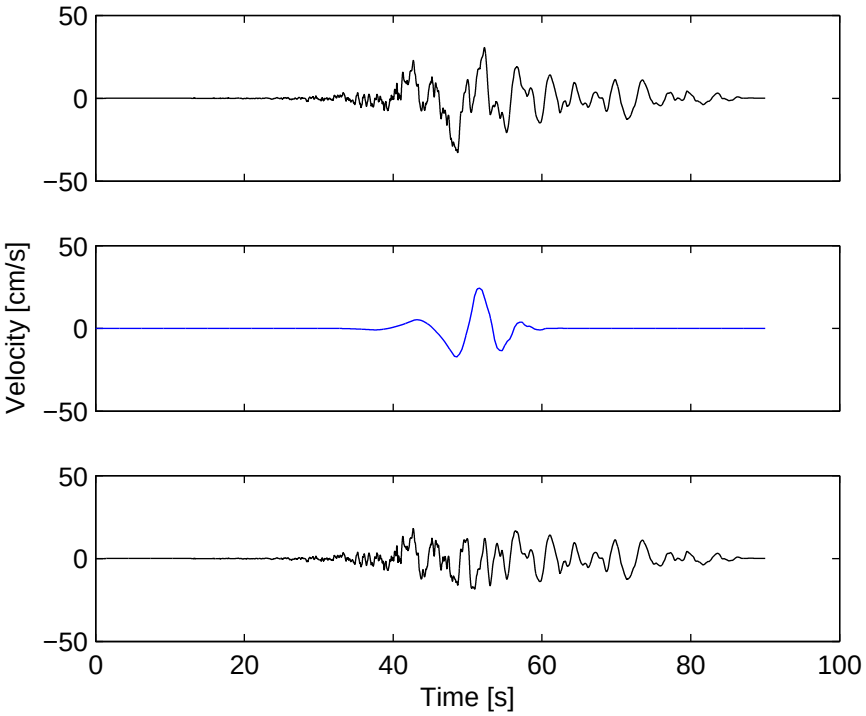


NGA record # 1519
Pulse # 78
Filename = CHICHI/TCU087_306_FN.acc

Magnitude = 7.6
Closest distance = 7 km
Epicentral distance = 55.64 km
T_p = 9.0 s
PGV = 54 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 9
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.5

1999 Chi-Chi, Taiwan, TCU098

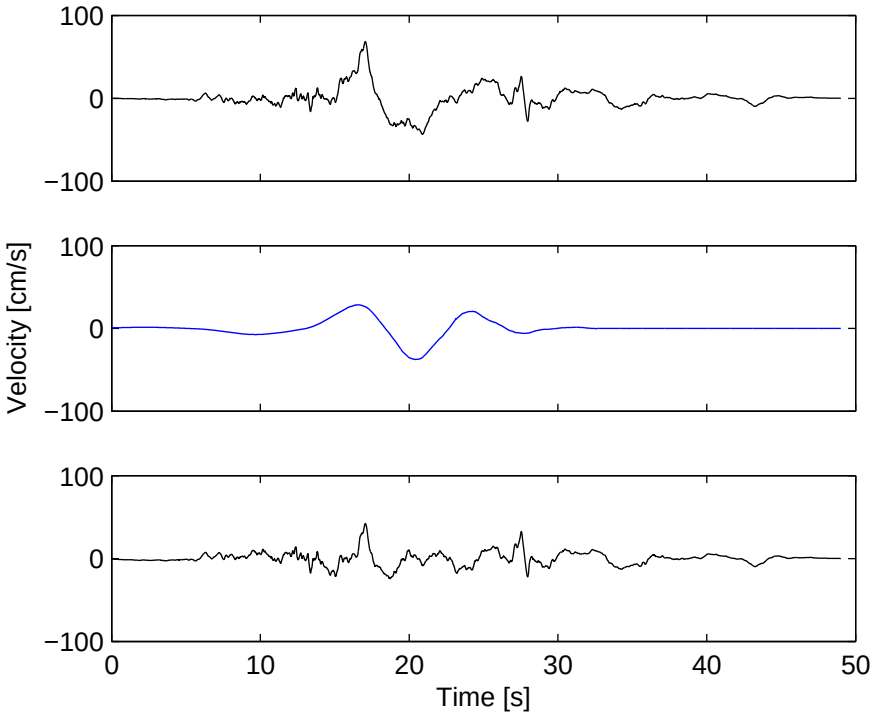


NGA record # 1526
Pulse # 79
Filename = CHICHI/TCU098_306_FN.acc

Magnitude = 7.6
Closest distance = 47.67 km
Epicentral distance = 99.73 km
T_p = 7.5 s
PGV = 33 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.8

1999 Chi-Chi, Taiwan, TCU101

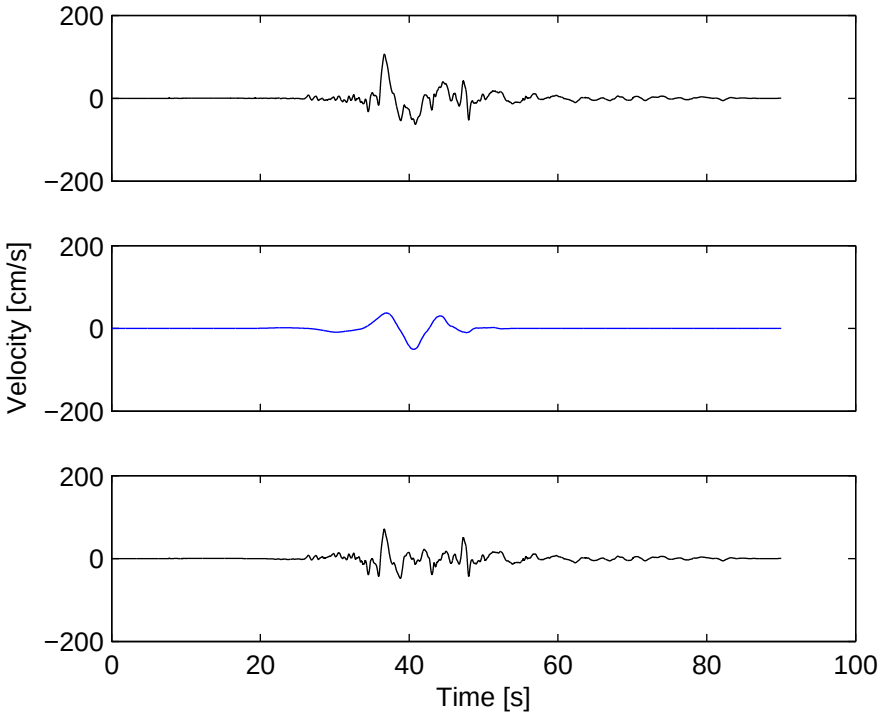


NGA record # 1528
Pulse # 80
Filename = CHICHI/TCU101_278_FN.acc

Magnitude = 7.6
Closest distance = 2.13 km
Epicentral distance = 45.05 km
T_p = 10.0 s
PGV = 68 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 11
FN amplification at 3s = 1.0
Spudich isochrone factor = 3.4

1999 Chi-Chi, Taiwan, TCU102

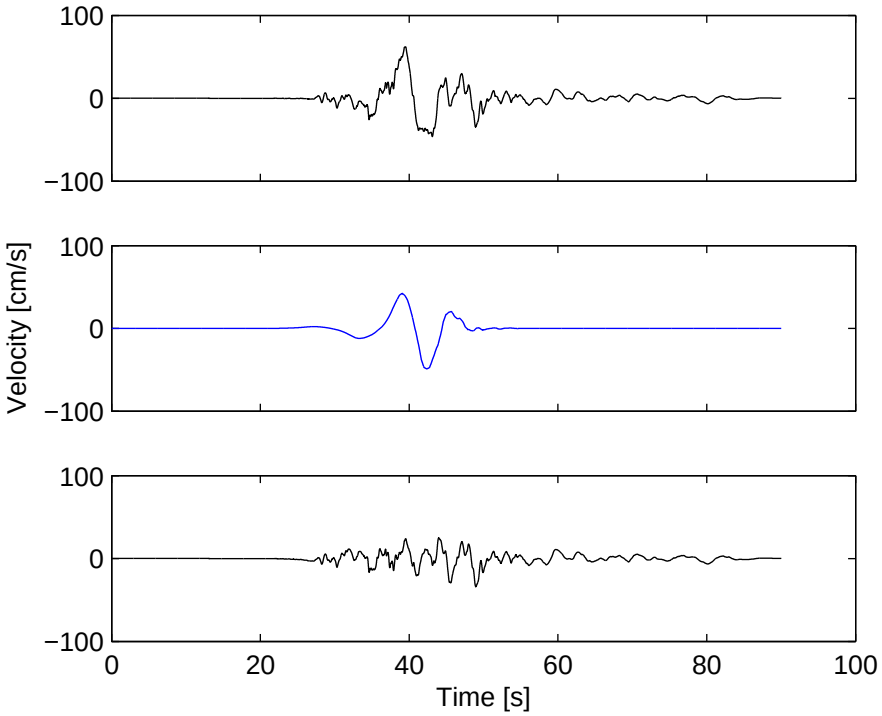


NGA record # 1529
Pulse # 81
Filename = CHICHI/TCU102_278_FN.acc

Magnitude = 7.6
Closest distance = 1.51 km
Epicentral distance = 45.56 km
T_p = 9.7 s
PGV = 107 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 10
FN amplification at 3s = 1.0
Spudich isochrone factor = 3.5

1999 Chi-Chi, Taiwan, TCU103

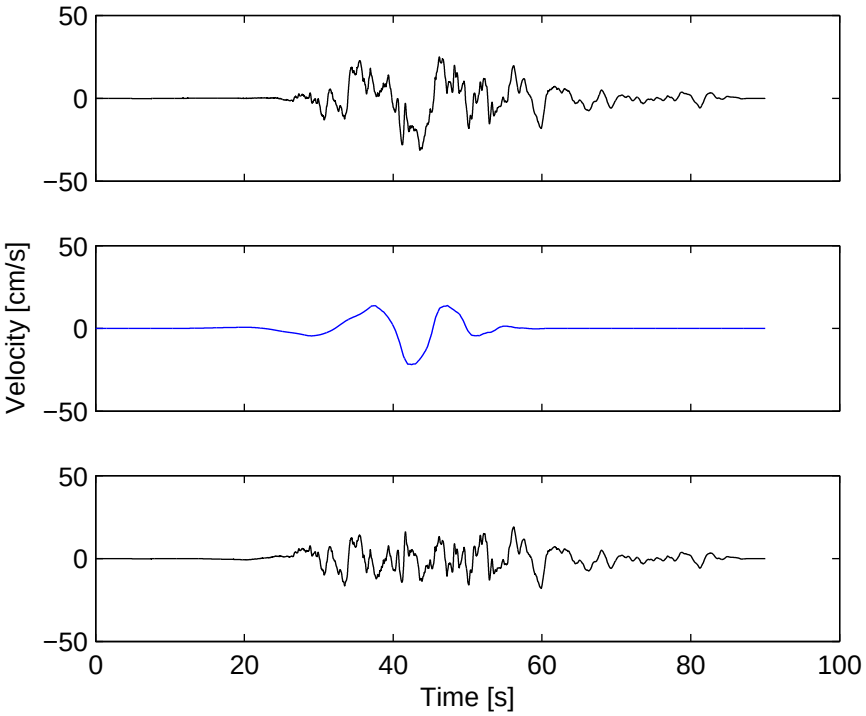


NGA record # 1530
Pulse # 82
Filename = CHICHI/TCU103_277_FN.acc

Magnitude = 7.6
Closest distance = 6.1 km
Epicentral distance = 52.43 km
T_p = 8.3 s
PGV = 62 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 13
FN amplification at 3s = 1.0
Spudich isochrone factor = 3.1

1999 Chi-Chi, Taiwan, TCU104

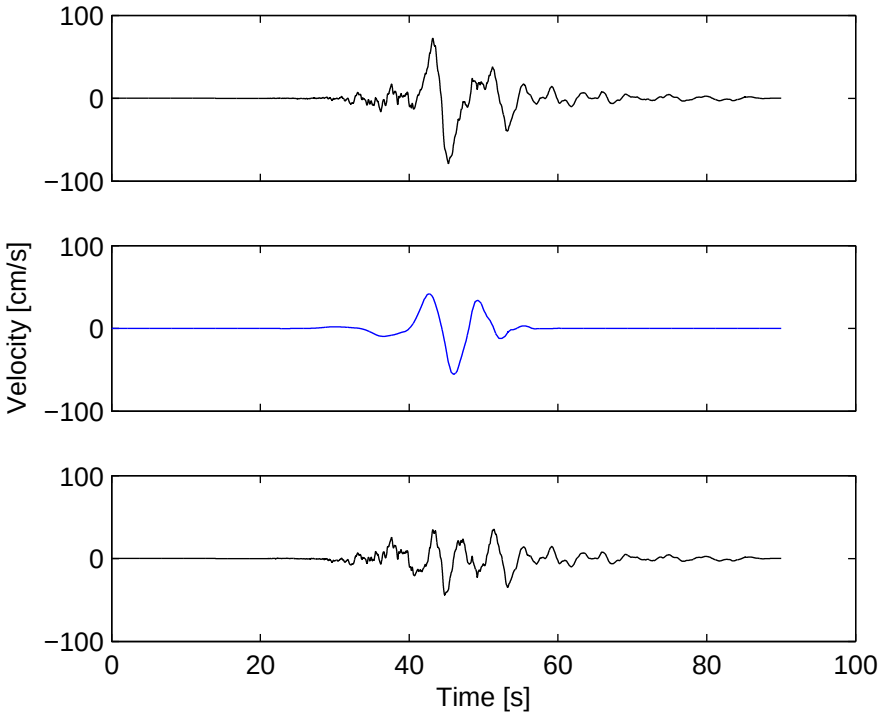


NGA record # 1531
Pulse # 83
Filename = CHICHI/TCU104_278_FN.acc

Magnitude = 7.6
Closest distance = 12.89 km
Epicentral distance = 49.28 km
T_p = 12.0 s
PGV = 31 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 17
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.3

1999 Chi-Chi, Taiwan, TCU128

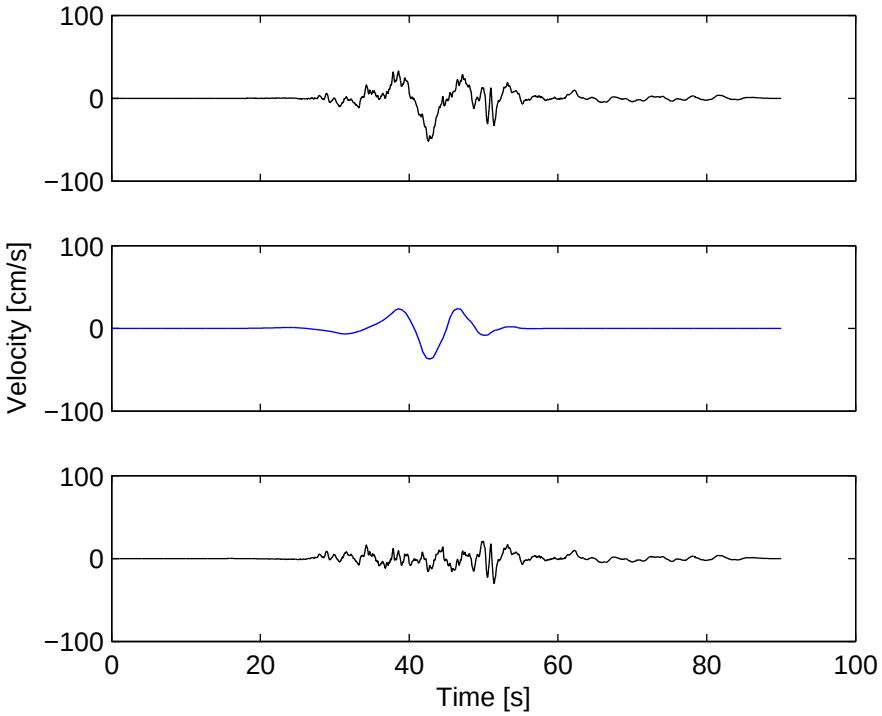


NGA record # 1548
Pulse # 84
Filename = CHICHI/TCU128_306_FN.acc

Magnitude = 7.6
Closest distance = 13.15 km
Epicentral distance = 63.29 km
T_p = 9.0 s
PGV = 79 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 2.6

1999 Chi-Chi, Taiwan, TCU136

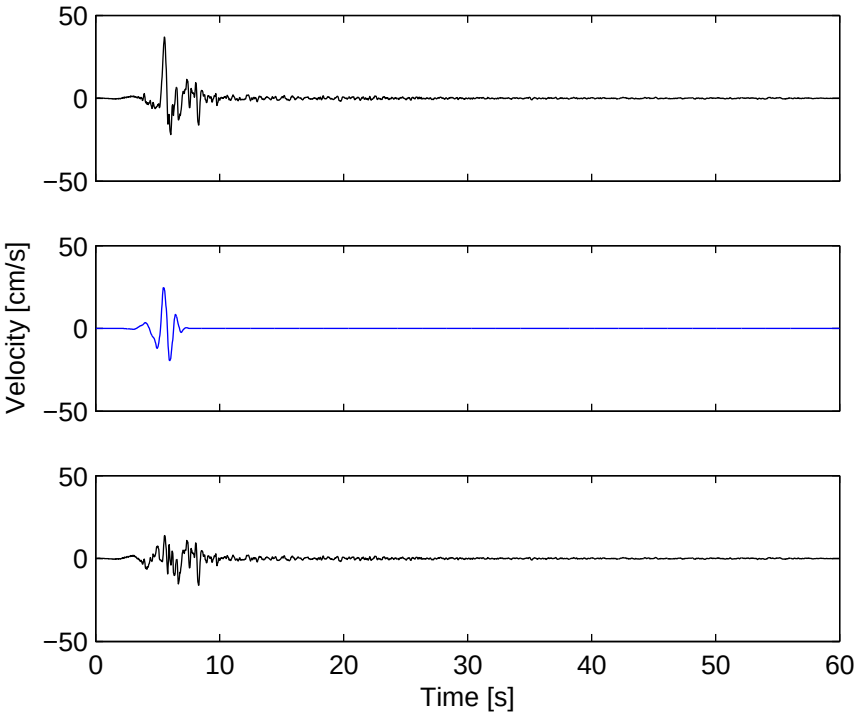


NGA record # 1550
Pulse # 85
Filename = CHICHI/TCU136_278_FN.acc

Magnitude = 7.6
Closest distance = 8.29 km
Epicentral distance = 48.75 km
T_p = 10.3 s
PGV = 52 cm/s

Somerville et al. amplification factors
X = 0.4
θ = 15
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.9

1997 Northwest China-03, Jiashi

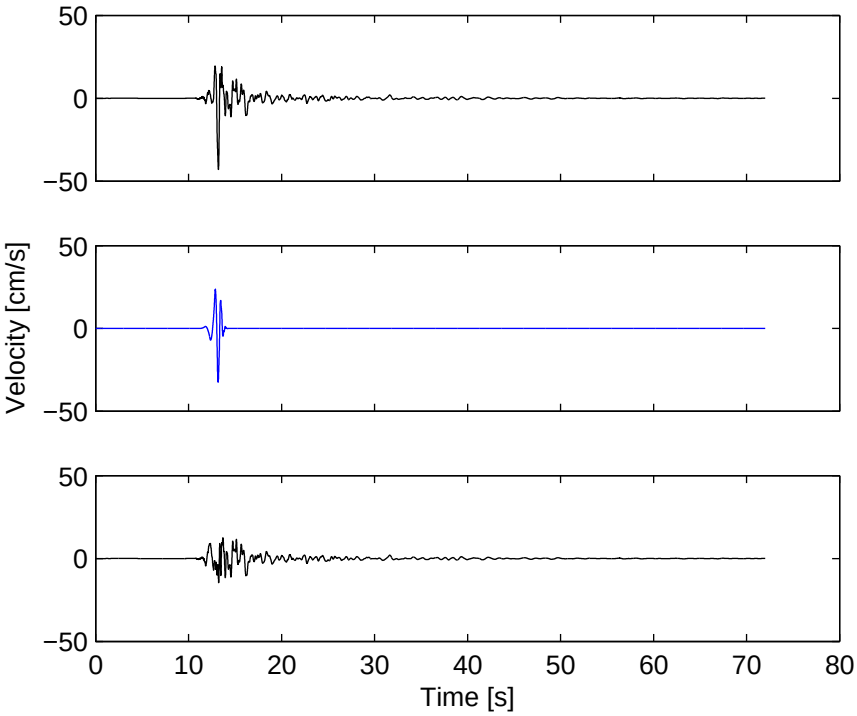


NGA record # 1752
Pulse # 86
Filename = NWCHINA3/J411N_292_FN.acc

Magnitude = 6.1
Closest distance = NaN km
Epicentral distance = 19.11 km
T_p = 1.3 s
PGV = 37 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = NaN

2000 Yountville, Napa Fire Station #3

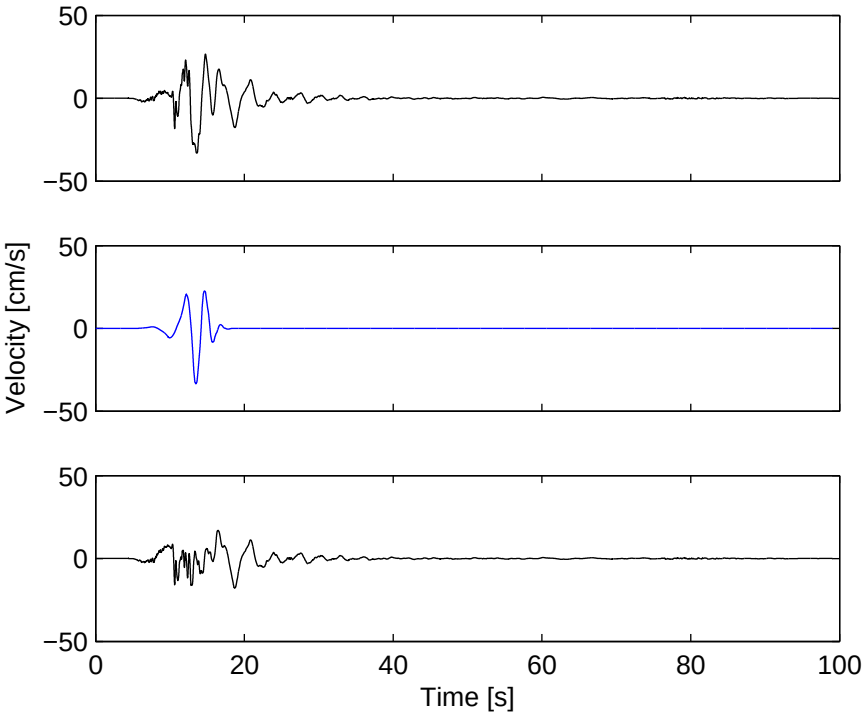


NGA record # 1853
Pulse # 87
Filename = YOUNTVL/2016a_061_FN.acc

Magnitude = 5
Closest distance = NaN km
Epicentral distance = 9.89 km
T_p = 0.7 s
PGV = 43 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = NaN

1999 Chi-Chi, Taiwan-03, CHY024

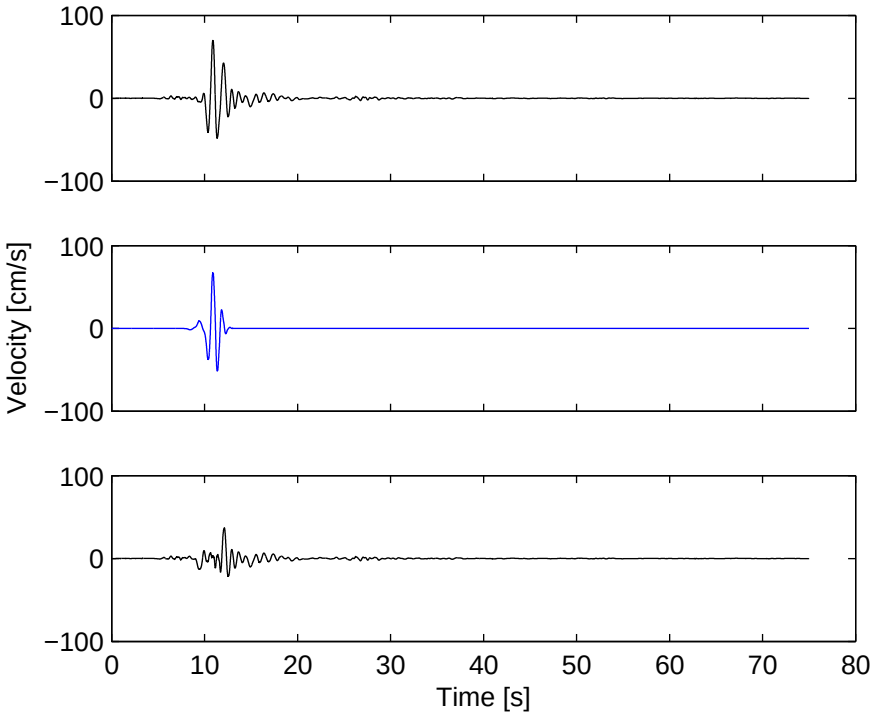


NGA record # 2457
Pulse # 88
Filename = CHICHI03/CHY024_270_FN.acc

Magnitude = 6.2
Closest distance = 19.65 km
Epicentral distance = 25.52 km
T_p = 3.2 s
PGV = 33 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 7
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.4

1999 Chi-Chi, Taiwan-03, CHY080

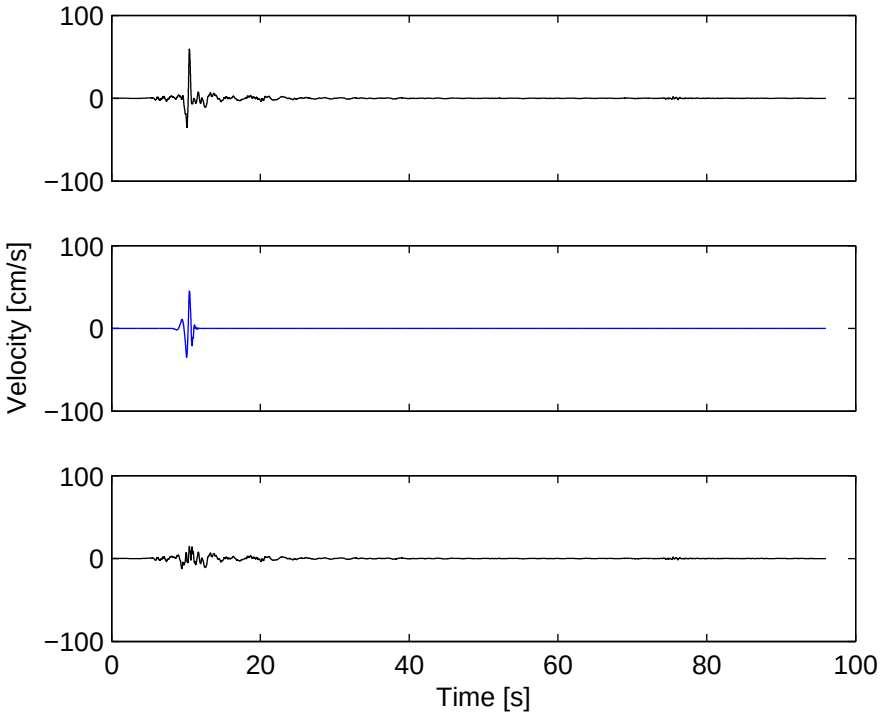


NGA record # 2495
Pulse # 89
Filename = CHICHI03/CHY080_270_FN.acc

Magnitude = 6.2
Closest distance = 22.37 km
Epicentral distance = 29.48 km
T_p = 1.4 s
PGV = 70 cm/s

Somerville et al. amplification factors
X = NaN
θ = NaN
FN amplification at 3s = NaN
Spudich isochrone factor = 3.4

1999 Chi-Chi, Taiwan-03, TCU076

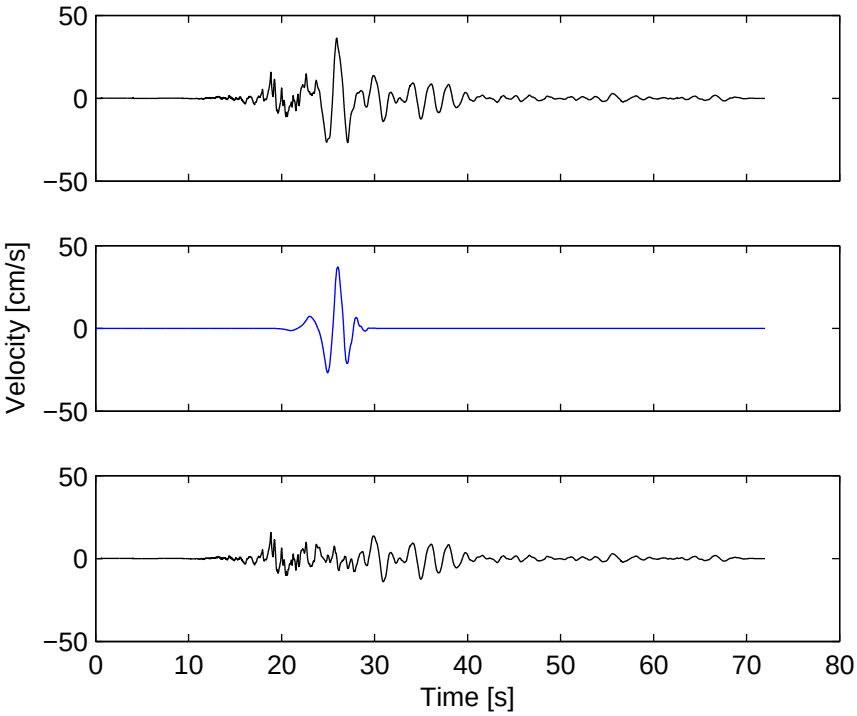


NGA record # 2627
Pulse # 90
Filename = CHICHI03/TCU076_270_FN.acc

Magnitude = 6.2
Closest distance = 14.66 km
Epicentral distance = 20.8 km
T_p = 0.9 s
PGV = 59 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 14
FN amplification at 3s = 1.0
Spudich isochrone factor = 3.5

1999 Chi-Chi, Taiwan-06, CHY101



NGA record # 3317
Pulse # 91
Filename = CHICHI06/CHY101_275_FN.acc

Magnitude = 6.3
Closest distance = 35.97 km
Epicentral distance = 49.98 km
T_p = 2.8 s
PGV = 36 cm/s

Somerville et al. amplification factors
X = 0.6
θ = 10
FN amplification at 3s = 1.0
Spudich isochrone factor = 2.6