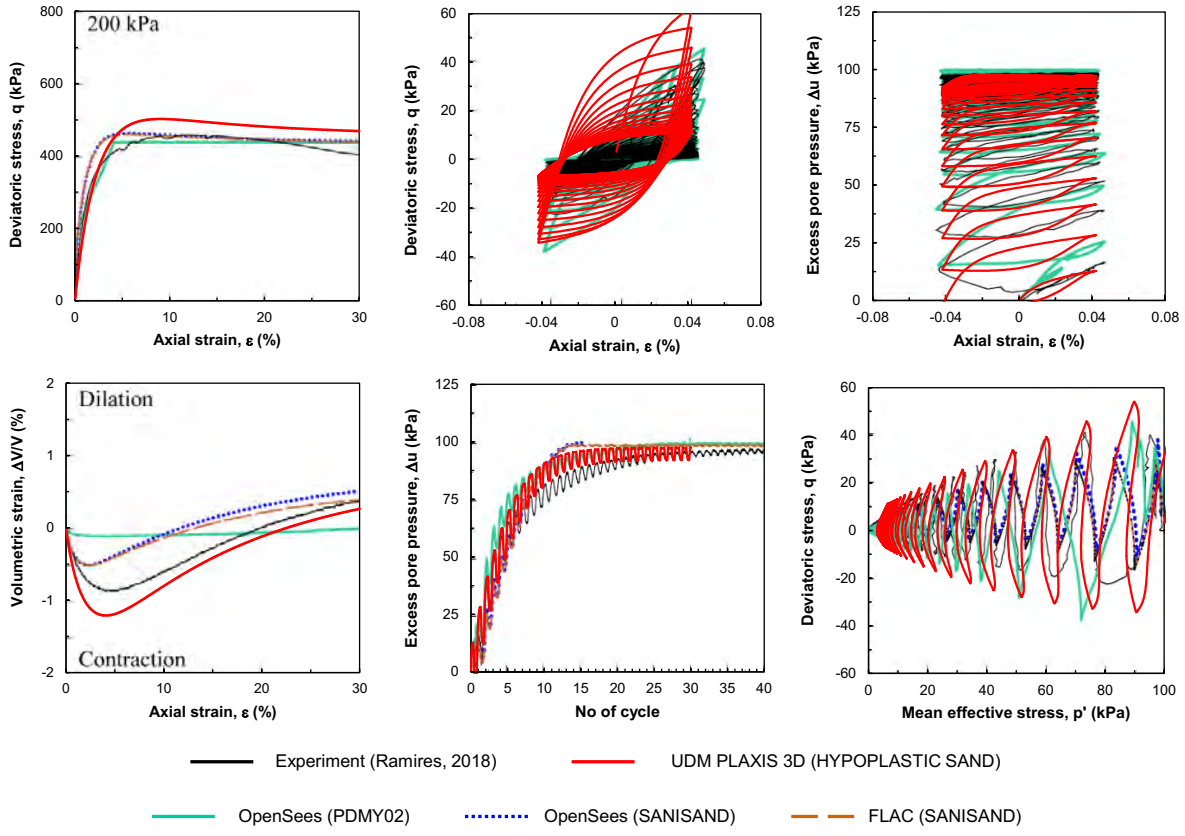


Figure 1 Example calibration of soil model against soil element test (triaxial tests)

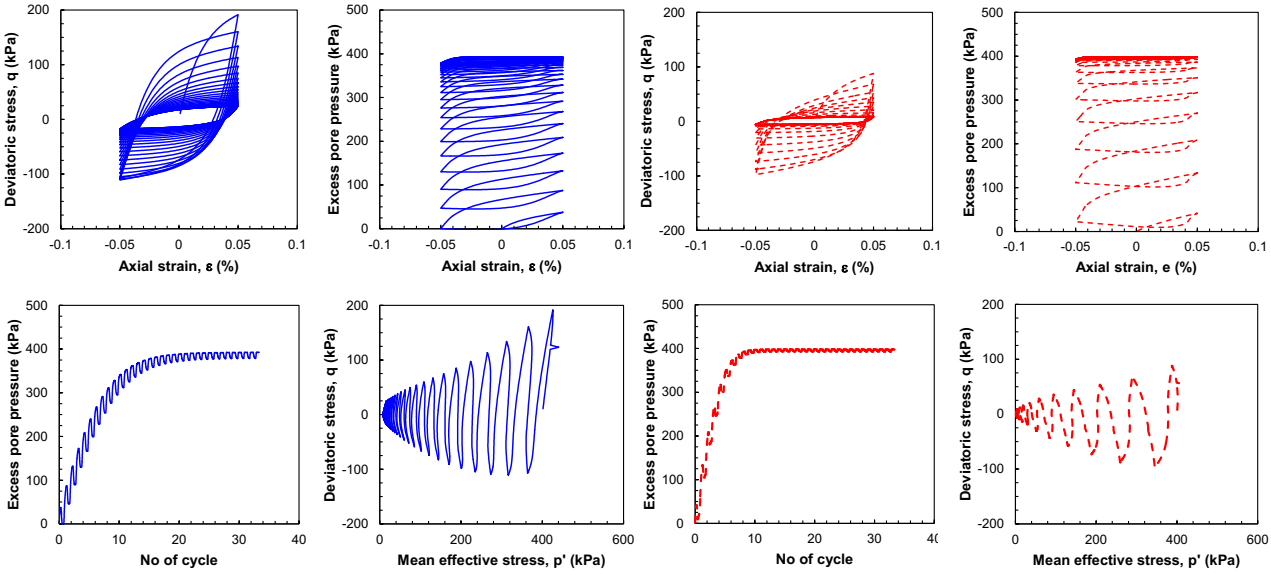


Figure 2 Comparison of numerical simulated responses of cyclic undrained triaxial tests

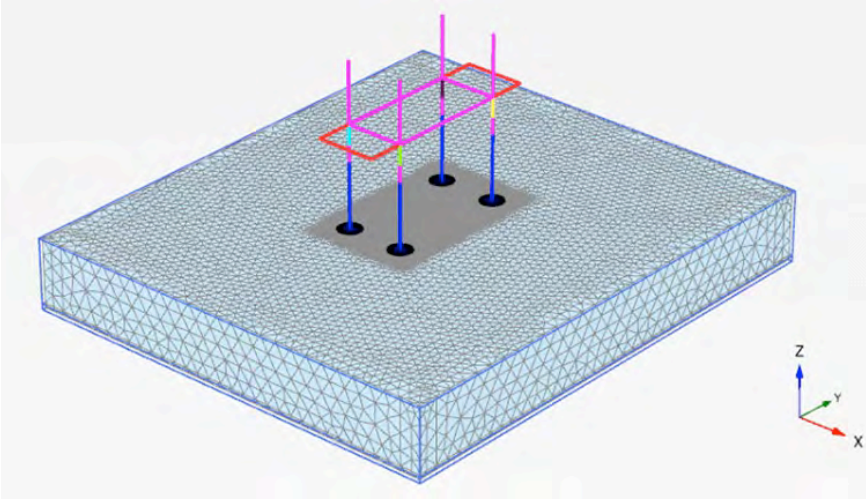


Figure 3 Plaxis 3D model (000^{o} rig orientation)

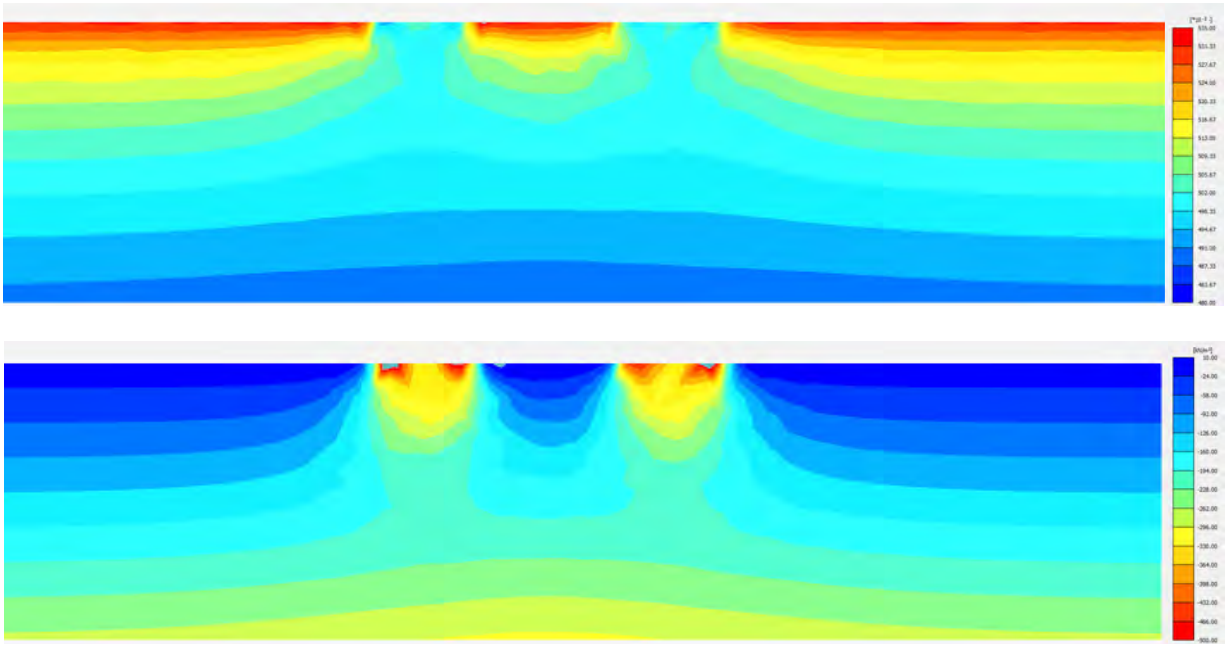


Figure 4 Change in void ratio and mean effective stress after pre-driving

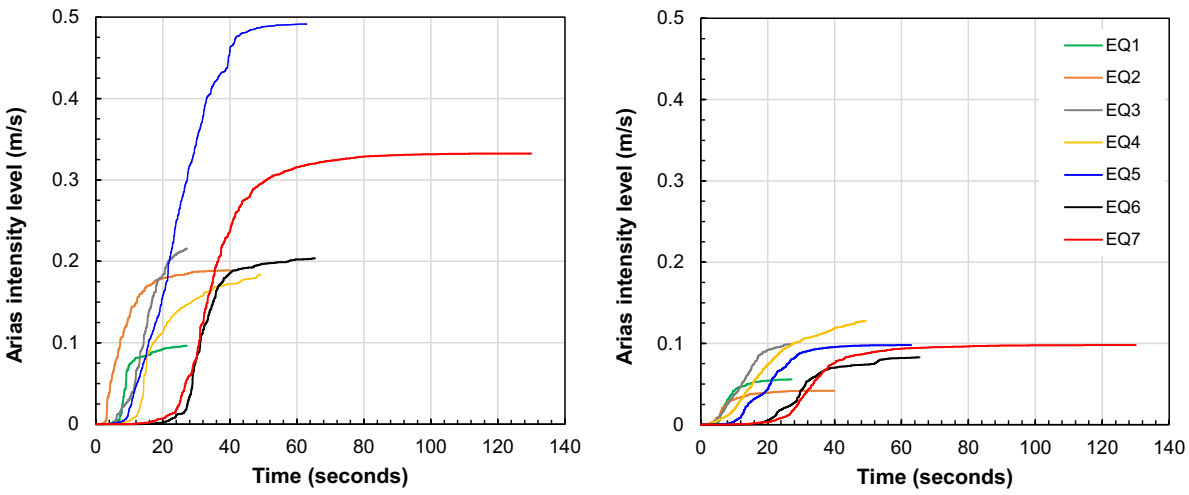


Figure 5 Arias Intensity level of spectral-matched outcrop ground motions for S_a(1.0) of 0.17g

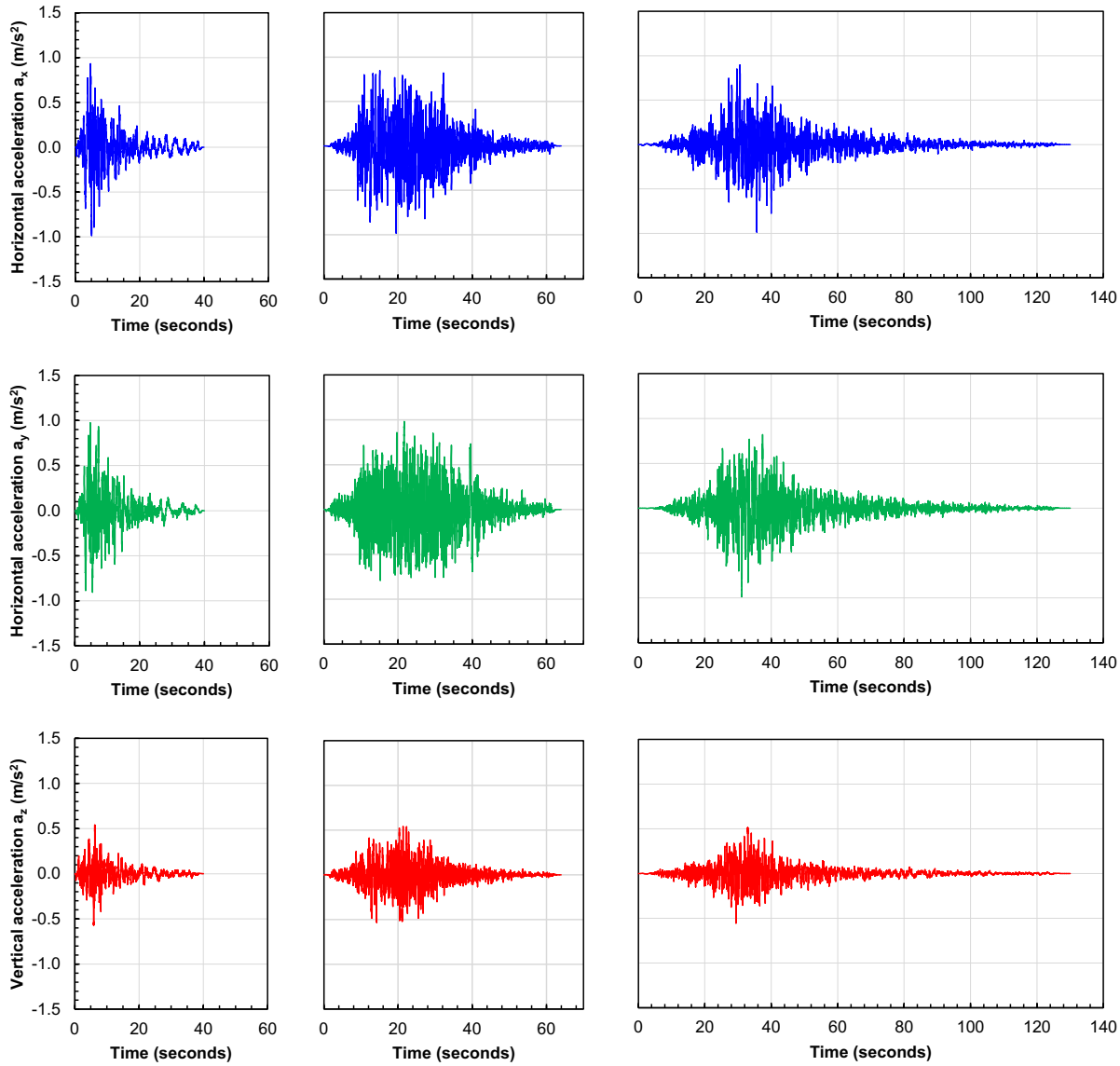
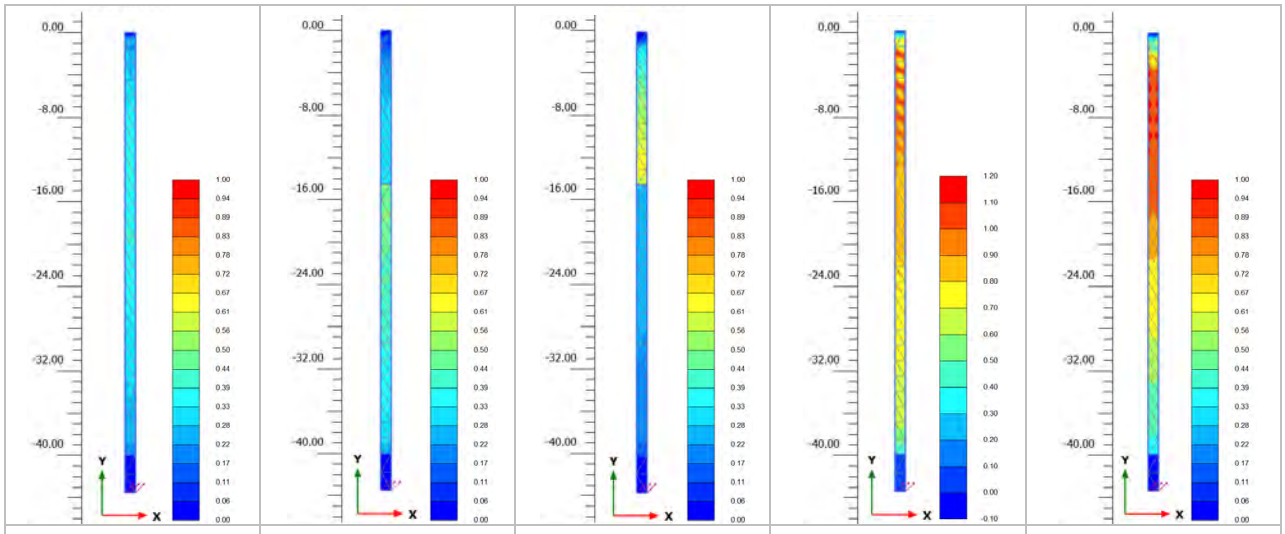


Figure 6 Spectral-matched outcrop ground motions (EQ1, EQ5, EQ7)



EQ1	EQ1	EQ1	EQ5	EQ7
Dense sand	Dense over medium dense sand	Medium dense over very dense sand	Dense sand	Dense sand
$r_{u,max} = 0.41$	$r_{u,max} = 0.54$	$r_{u,max} = 0.67$	$r_{u,max} \approx 1.00$	$r_{u,max} \approx 1.00$

Figure 7 Excess pore pressure ratios at end of seismic loading

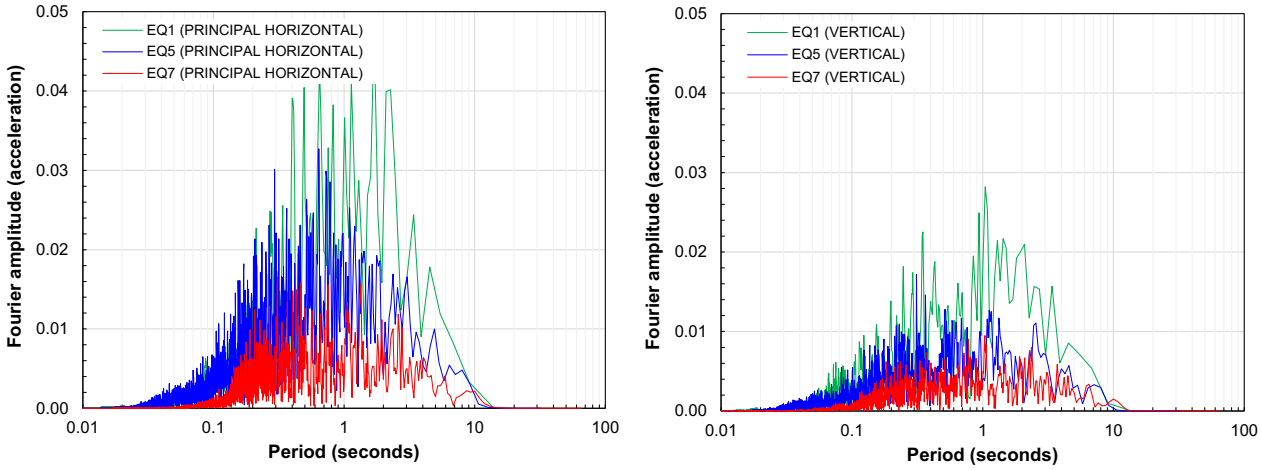


Figure 8 Fourier amplitude of EQ1, EQ5 and EQ7 ground motions

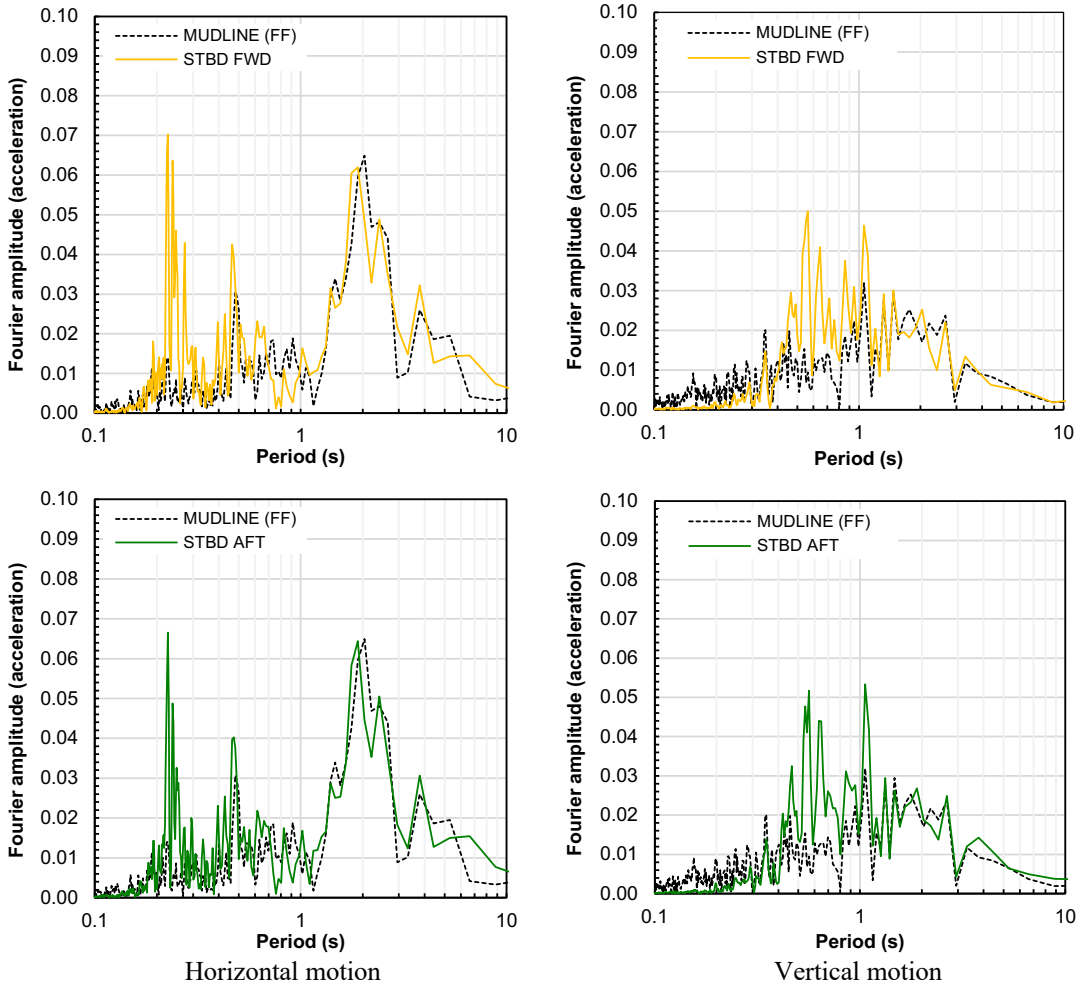
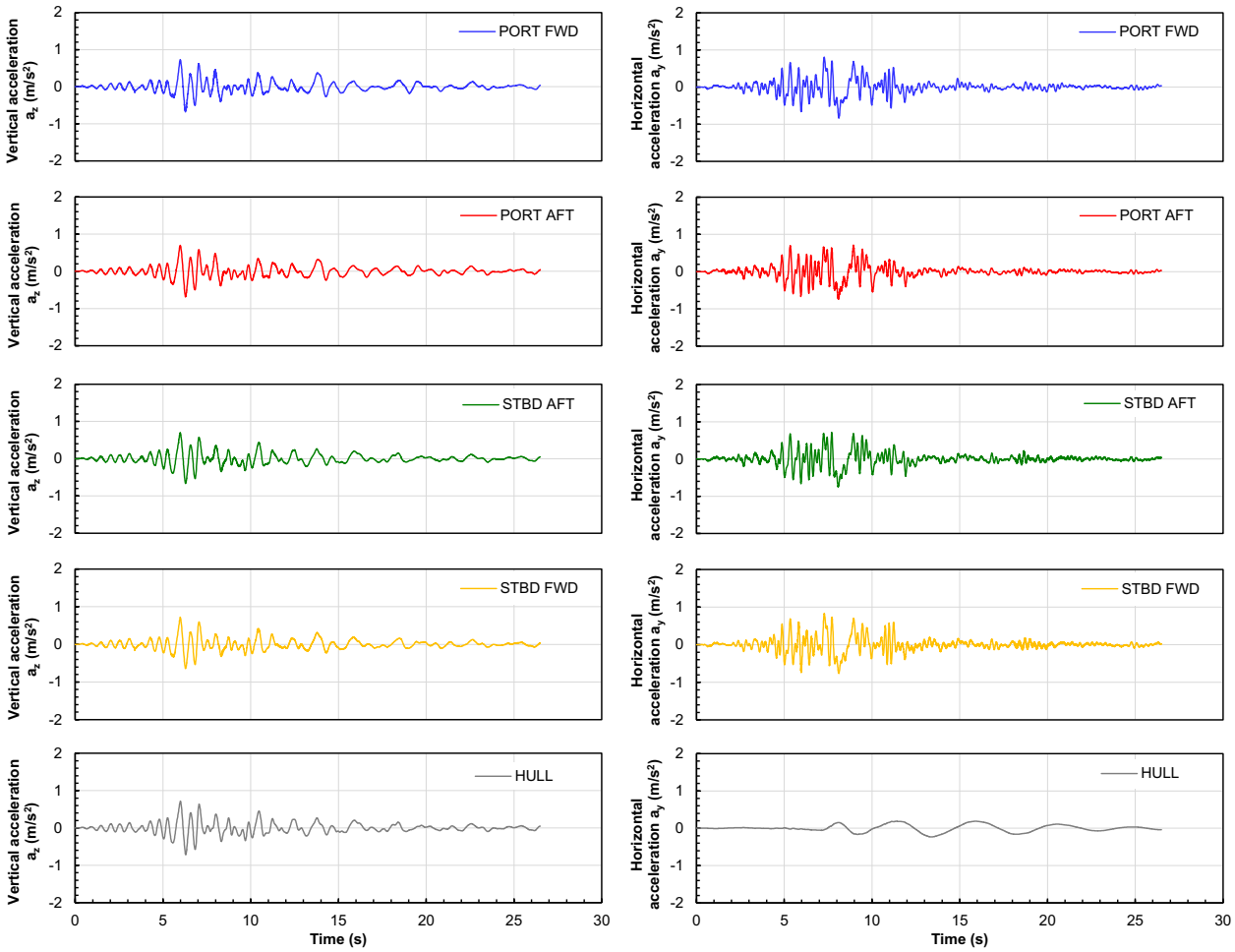


Figure 9 Fourier amplitude of spudcan motions (starboard) compared to surface ground motions (EQ1)



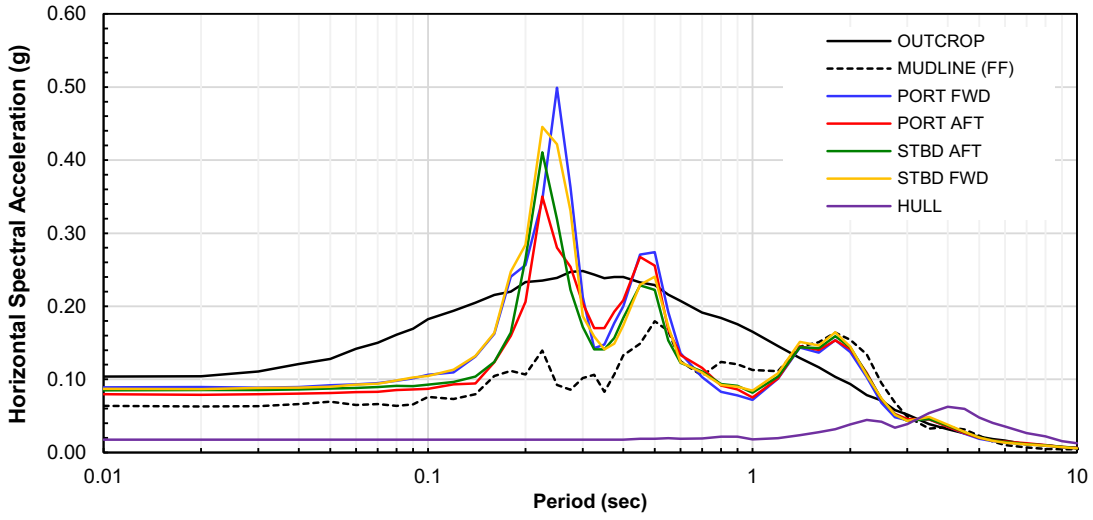


Figure 10 Example of spudcan and hull motions and response spectra of horizontal accelerations (Case 1)

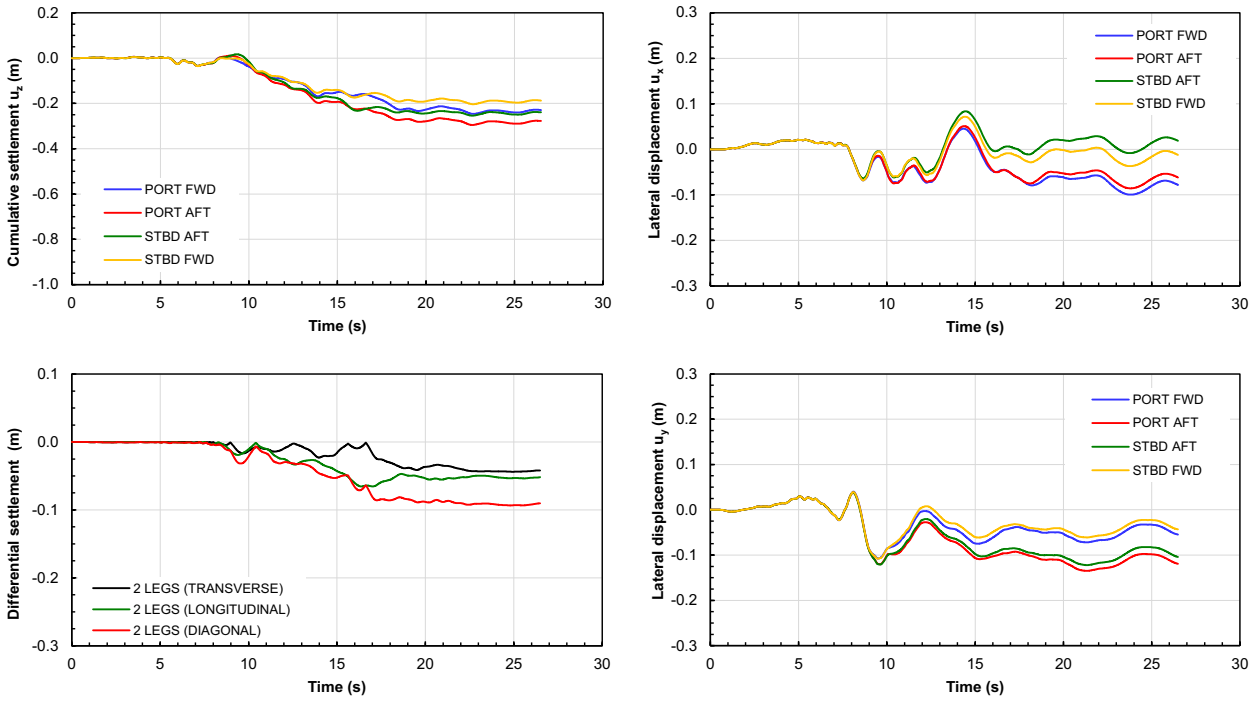


Figure 11 Example of spudcan settlement and lateral displacement (Case 1)

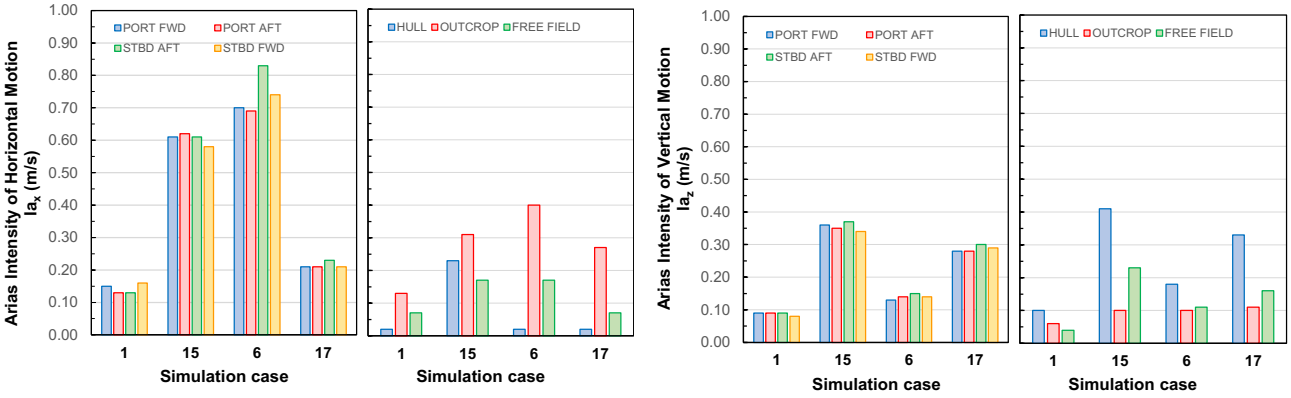


Figure 12 Effect of ground motion characteristics on Arias intensity level

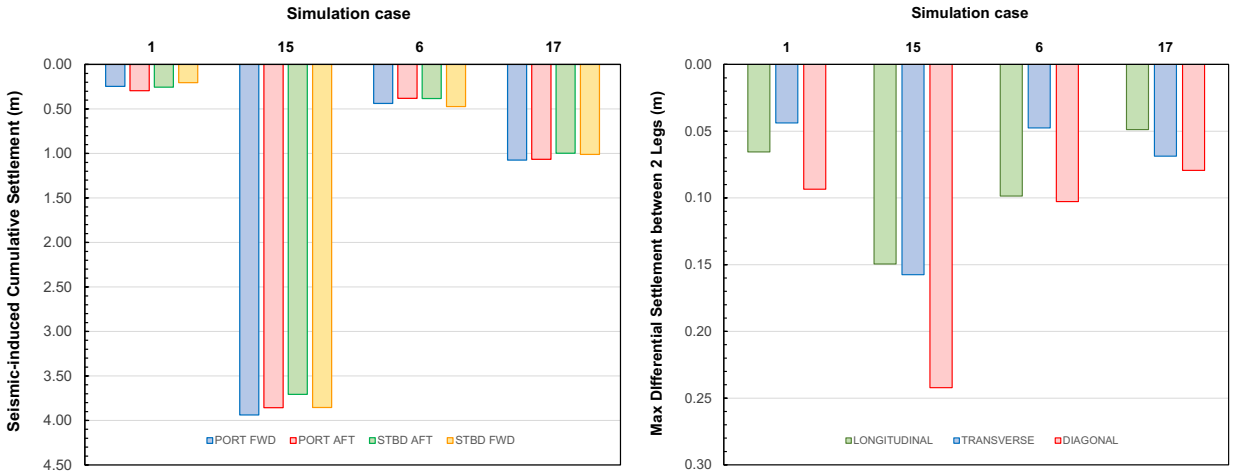


Figure 13 Effect of ground motion characteristics on spudcan settlement