Geotechnical

• Quantity and quality of observations provide a unparalleled opportunity to investigate key geotechnical/earth science questions that require basic research.

• Unusual sequence of highly damaging earthquake events in New Zealand and in Japan, and its implications for regions such as Southern California and Pacific NW.

• Unprecedented set of strong motion records and geodetic data for a M9 subduction zone event to inform physics-based models and empirical relations.

Geotechnical (2)

• Two of the most important events in the last one or two decades to investigate liquefaction triggering and its effects on the built environment:
  • integrated GIS of buildings/lifelines systems and their performance across a broad range of shaking levels, ground displacements, and multiple events; and
  • guides probabilistic assessments.

• Nonlinear seismic site response for downhole arrays to long-duration motions and for close proximity sites for near-fault ground motions.