

# 2016 QC Annual Meeting Workshop on "Ground Motion Simulation and Validation"

**Objective:** This workshop intends to provide closer personal connections between NZ researchers, end-users and international collaborators on ground motion simulation through a mix of invited presentations and open floor discussion on research challenges and implementation issues.

QuakeCoRE's ground motion simulation activities strive for a paradigm shift in strong ground motion prediction through the use of high-fidelity physics-based simulation methods; merging state-of-the-art knowledge in strong motion seismology and geotechnical earthquake engineering; validating simulations via application to advanced numerical models of engineering infrastructure; and developing guidance for the use of such simulation methods in engineering design and assessment.

**Date:** 31 August 2016

**Location:** Wairakei, Taupo (in conjunction with the QuakeCoRE Annual Meeting)

**Conveners:** Brendon Bradley (University of Canterbury)

**Agenda:** (presentations can be viewed via the links below)

**1:15pm** [Welcome and workshop aims](#) (Brendon Bradley)

**1:20pm** **Validation (10min talks)**

- [SCEC efforts in ground motion simulation validation](#) (Christine Goulet)
- [Validation of physics-based ground motion simulations of past earthquakes](#) (Ricardo Taborda)
- [Validation of ground motion simulations in the Canterbury, NZ, region](#) (Hoby Razafindrakoto)
- [Validation of strong ground motion simulations of two historical NZ subduction zone earthquakes on the SCEC BBP](#) (Andreas Skarlatoudis)
- [The composite source model: Calibrations and validation for the SCEC BBP and precariously balanced rocks](#) (John Anderson)
- [Implementation of GMSV TAG validation gauntlets on the SCEC BBP for engineering applications](#) (Sanaz Rezaeian)
- [Explicit validation of uncertainties in ground motion simulation](#) (Brendon Bradley)
- Open Discussion: Advancing simulation validation

**3:00pm** Coffee break

**3:20pm** **Advances in GM Sim: High frequencies and shallow soil response (10min talks)**

- [Current efforts and future challenges in high frequency ground motion simulation](#) (Ricardo Taborda)
- [Improvements in ground motion prediction via explicit simulation of near-surface site response at Heathcote Valley during the Canterbury earthquakes](#) (Seokho Jeong)
- [Near surface site characterization](#) (Liam Wotherspoon)
- Open Discussion: Advancing modeled physics in simulations

**4:20pm** **Utilization of simulated ground motions (10min talks)**

- [Guidelines for the utilization of ground motion simulations in engineering practice](#) (Didier Pettinga / Brendon Bradley)
- [Utilization of simulated ground motions in the US hazard and design maps](#) (Christine Goulet / Sanaz Rezaeian)
- Open Discussion: Utilization of simulations

**5:00pm** Workshop close

**Participants:**