

2018 Monthly Webconferences: Ground Motion Simulation & Validation (GMSV)

Objective: To coordinate and obtain feedback on the plans of the [2018 QuakeCoRE GMSV research projects](#).

PLEASE NOTE: Presentation slides below are the author's property. They may contain unpublished or preliminary information and should only be used while viewing the talk.

22 November 2018 (9:00-10:30am NZT, web link: <https://canterbury.zoom.us/j/374852384>)

Purpose: To coordinate and share research activities on, and related to, 2018 QuakeCoRE GMSV research projects

Agenda:

- Invited: [Modelling uncertainty in groundwater and conceptual parallels with ground motion simulation](#) (David Dempsey, ~20 minutes)
- Discussion (All, ~5 minutes)
- Progress on: [Ground motion simulation uncertainty quantification through validation](#) (Sarah Neill, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress on: [A NZ Vs30 model for site-specific and regional applications](#) (Kevin Foster, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress on: [Stochastic variability in 3D-1D site response analysis](#) (Chris de la Torre, ~20 minutes)
- Discussion (All, ~5 minutes)

Participants: Karim Tarbali, Ethan Thomson, Chris de la Torre, Sarah Neill, Andrei Nguyen, Robin Lee, Kevin Foster, Brendon Bradley, Vahid Loghman, Manesh Malla (UC), Seokho Jeong (UWaikato), Anna Kowal (Otago), Liam Wotherspoon, David Dempsey, Romain Meite (UA), Didier Pettinga (Holmes), Jim Kaklamanos (Merrimack), Jeff Fraser, James Dismuke, Feng Li, Jie Gao, Ben Higgs, Joon Kim (Golder), Hoby Razafindrakoto (Potsdam), Jorge Macedo, Seyoum Asamenaw (Georgia Tech)

Apologies: Jagdish Vyas, Andrew Stolte, Reagan Chandramohan, Chris McGann

25 October 2018 (9:00-10:30am NZT, web link: <https://canterbury.zoom.us/j/374852384>)

Purpose: To coordinate and share research activities on, and related to, 2018 QuakeCoRE GMSV research projects

Agenda:

- Progress on: ["Automated classification of recorded ground motion quality using neural networks"](#) (Xavier Bellagamba and Robin Lee, ~20 minutes)
- Discussion (All, ~5 minutes)
- Progress on: ["Recent site characterisation work in NZ"](#) (Andrew Stolte, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress on: ["South Dunedin site characterisation and velocity modelling"](#) (Catherine Sangster, ~5 minutes)
- Discussion (All, ~5 minutes)
- Progress on: ["Advancements in NZ Cybershake through CSv18.6"](#) (Karim Tarbali, ~20 minutes)
- Discussion (All, ~5 minutes)

Participants: Karim Tarbali, Ethan Thomson, Chris de la Torre, Sarah Neill, Andrei Nguyen, Robin Lee, Jagdish Vyas, Andrew Stolte, Xavier Bellagamba, Reagan Chandramohan, Kevin Foster, Chris McGann, Manesh Malla (UC), Seokho Jeong (UWaikato), Anna Kowal, Catherine Sangster, Mark Stirling (Otago), Connor Hayden, Romain Meite (UA), Gareth Morris (Holmes), Jim Kaklamanos (Merrimack).

Apologies: Brendon Bradley

27 September 2018 (9:00-10:30am NZT, web link: <https://canterbury.zoom.us/j/374852384>)

Purpose: To plan toward 2019-2020 QuakeCoRE GMSV research projects

Agenda:

- ["Summary of 2019-2020 QuakeCoRE FP1 plans"](#) (Brendon Bradley, ~20 minutes)
- Initial Questions/Clarifications (All, ~10 minutes)
- Series of short discussions/presentations and Q&A: (~40 minutes)
 - [Basin model development and site response](#) (Seokho Jeong)
 - [Approaches for examining Cybershake ground motion simulations in the context of utilization](#) (Chris McGann)
 - [Further research on subduction zone ground motion simulation](#) (Paul Somerville)
 - [The case for simulated ground motions for the Hikurangi Subduction Zone](#) (James Dismuke)

- [GM simulation: Steps into practice application](#) (Didier Pettinga)
- Open discussion on weaknesses - what are we not adequately addressing? (20 minutes)
- Next steps: RfP submissions due on 19th October 2018

Participants: Karim Tarbali, Sarah Neill, Chris de la Torre, Ethan Thomson, Jagdish Vyas, Brendon Bradley, Vahid Loghman, Robin Lee, Andrew Stottle, Reagan Chandramohan, Chris McGann, Manesh Malla (UC), James Dismuke, Ben Higgs, Joon Kim (Golder), Catherine Sangster, Anna Kowal, Mark Stirling (UOtago), Marco Stupazzini (Munich Re), Romain Meite, Liam Wotherspoon, David Dempsey, Connor Hayden (UA), Seokho Jeong (UW), Didier Pettinga (Holmes), Jeff Bayless, Paul Somerville (AECOM), James Kaklamanos (Merrimack), Rick Wentz (WP consulting)

Apologies: Hoby Razafindrakoto (Potsdam)

26 July 2018 (9:00-10:30am NZT, web link: <https://canterbury.zoom.us/j/374852384>)

Purpose: To coordinate and share research activities on, and related to, 2018 QuakeCoRE GMSV research projects

Agenda:

- Invited: ["Lessons learned from Kik-Net data for site response modelling input parameters, assumptions and decisions"](#) (Jim Kaklamanos, ~20 minutes)
- Discussion (All, ~5 minutes)
- Progress on: ["New Zealand Velocity Model V2.0 and Simulations of Hope Fault earthquakes"](#) (Ethan Thomson, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress on: ["On-going validation of ground motion simulations in New Zealand"](#) (Robin Lee, ~15 minutes)
- Discussion: "" (All, ~5 minutes)
- Progress on: ["Thesis outline: Validation of ground motion simulations via response history analysis of complex seismic systems"](#) (Vahid Loghman, ~15 minutes)
- Discussion: "" (All, ~5 minutes)

Participants: Karim Tarbali, Chris de la Torre, Ethan Thomson, Jagdish Vyas, Brendon Bradley, Vahid Loghman, Robin Lee, Andrew Stottle, Reagan Chandramohan, Chris McGann, Kevin Foster (UC), James Dismuke (Golder/UC), Feng Li (Golder), Catherine Sangster, Anna Kowal, Mark Stirling (UOtago), Marco Stupazzini (Munich Re), Tahoura Khansari (UA), Seokho Jeong (UW), Didier Pettinga Holmes, Hoby Razafindrakoto (Potsdam)

Apologies: David Dempsey, Liam Wotherspoon (UA)

24 May 2018 (9:00-10:30am NZT, web link: <https://canterbury.zoom.us/j/374852384>)

Purpose: To coordinate and share research activities on, and related to, 2018 QuakeCoRE GMSV research projects

Agenda:

- Invited: ["Basin Amplification Factors for Cascadia from the 2011 Tohoku, Japan Earthquake"](#) (Andreas Skarlatoudis, ~20 minutes)
- Discussion (All, ~5 minutes)
- Progress on: ["Current SCEC Cybershake activities"](#) (Scott Callaghan, ~20 minutes)
- Discussion (All, ~5 minutes)
- Progress on: ["QuakeCoRE Cybershake v18.5"](#) (Karim Tarbali, ~20 minutes)
- Discussion: ["Similarities and differences between SCEC and QuakeCoRE Cybershake efforts"](#) (Brendon Bradley / All, ~20 minutes)

Participants: , Karim Tarbali, Chris de la Torre, Ethan Thomson, Jagdish Vyas, Brendon Bradley, Vahid Loghman, Robin Lee (UC), Scott Callaghan (SCEC/USC), James Dismuke (Golder/UC), Feng Li, Ben Higgs, Max Rossiter (Golder), Catherine Sangster, Anna Kowal, Mark Stirling (UOtago), Marco Stupazzini (Munich Re), Paul Somerville, Jeff Bayless (AECOM), , David Dempsey, Liam Wotherspoon Romain Meite (UA).Seokho Jeong (UW).

Apologies: Chris McGann (UC), Hoby Razafindrakoto (Potsdam), Connor Hayden (UA), James Kaklamanos (Merrimack), Rebecca McMahon (Beca)

26 April 2018 (9:00-10:30am NZT, web link: <https://canterbury.zoom.us/j/374852384>)

Purpose: To coordinate and share research activities on, and related to, 2018 QuakeCoRE GMSV research projects

Agenda:

- Overview of the 2018 FP1 coordinated project (Brendon Bradley, ~5 minutes)
- Plans for: [Preparation for a 3D velocity model for Dunedin CBD](#) (Catherine Sangster and Anna Kowal, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress on: Development of a Wellington CBD basin model (Anna Kaiser, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress on: [Developing site-specific high-frequency simulation componentary](#) (Jagdish Vyas and Robin Lee, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress on: [Recent fieldwork for South Island basin characterisation](#) (Chris de la Torre, Seokho Jeong , ~15 minutes)
- Discussion (All, ~10 minutes)

Participants: Chris McGann, Karim Tarbali, Chris de la Torre, Jagdish Vyas, Brendon Bradley, Vahid Loghman, Robin Lee (UC), James Dismuke (Golder /UC), Feng Li (Golder), Catherine Sangster, Anna Kowal, Mark Stirling (UOtago), Graeme McVerry, Anna Kaiser (GNS), Marco Stupazzini (Munich Re), Paul Somerville, Jeff Bayless (AECOM), Hoby Razafindrakoto (Potsdam), David Dempsey, Connor Hayden, Liam Wotherspoon (UA), James Kaklamanos (Merrimack), Rebecca McMahon (Beca).

Apologies:

22 March 2018 (9:00-10:30am NZT, web link: <https://canterbury.zoom.us/j/374852384>)

Purpose: To coordinate and share research activities on, and related to, 2018 QuakeCoRE GMSV research projects

Agenda:

- Overview of the 2018 FP1 coordinated project (Brendon Bradley, ~5 minutes)
- Completed project: [Nelson Tasman Dynamic Site Characterisation](#) (Rebecca McMahon, ~15 minutes)
- Discussion (All, ~5 minutes)
- Near-completion: [Development of generalised parametric functions and spatial correlations for seismic velocities in the Canterbury region based on dynamic site characterisation](#) (Ethan Thomson, ~15 minutes)
- Discussion (All, ~5 minutes)
- On-going thoughts on: [Application of code-compatible simulation vs recorded ground motions for structural and geotechnical systems](#) (Chris McGann, ~15 minutes)
- Discussion (All, ~5 minutes)
- Completed project: [Explicit Modeling of Nonlinear Site Effects in Physics-Based Ground Motion Simulations of the 2010-2011 Canterbury Earthquake Sequence](#) (Chris de la Torre, ~15 minutes)
- Discussion (All, ~10 minutes)

Participants: Paul Somerville (AECOM), Jim Kaklamanos (Merrimack), Ben Higgs, Fe Li (Golder), James Dismuke (UC/Golder), Didier Pettinga (Holmes), Rebecca McMahon (Beca), David Dempsey, Liam Wotherspoon (UA), Hoby Razafindrakoto (Potsdam), Anna Kowal, Catherine Sangster (Otago), Sjoerd van Ballegooy (Tonkin and Taylor), Chris McGann, Robin Lee, Brendon Bradley, Karim Tarbali, Vahid Loghman, Ethan Thomson, Kevin Foster, Jagdish Vyas, Reagan Chandramohan, Seokho Jeong (UC)

Apologies: Ricardo Taborda (Memphis)

22 February 2018 (9:00-10:30am NZT, web link: <https://canterbury.zoom.us/j/374852384>)

Purpose: To coordinate and share research activities on, and related to, 2018 QuakeCoRE GMSV research projects

Agenda:

- Overview of the 2018 FP1 coordinated project (Brendon Bradley, ~5 minutes)
- Plans for ["Subduction zone analogs for New Zealand"](#) (Paul Somerville / Andreas Skarlatoudis, ~15 minutes)
- Discussion (All, ~5 minutes)
- Plans for ["Hauraki rift earthquake modelling"](#) (David Dempsey, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress of ["Ground motion simulation validation for the 14 February 2016 Valentines Day earthquake"](#) (Jagdish Vyas, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress of ["Topography effects on ground motion --Simulation and analysis plans"](#) (Ricardo Taborda, ~15 minutes)
- Discussion (All, ~10 minutes)

Participants:

Brendon Bradley, Jagdish Vyas, Seokho Jeong, Ethan Thomson, Robin Lee, Chris de la Torre, Hoby Razafindrakoto (UC), Jeff Fraser (Golder), James Dismuke (Golder/UC), Paul Somerville, Andrea Skarlatoudis, Jeff Bayless (AECOM), David Dempsey, Connor Hayden (UA), Didier Pettinga (Holmes), Jim Kaklamanos (Merrimack), Khurram Aslam, Ricardo Taborda (Memphis), Mark Stirling (Otago)

Apologies: Chris McGan, Reagan Chandramohan (UC)

25 January 2018 (9:00-10:30am NZT, web link: <https://canterbury.zoom.us/j/374852384>)

Purpose: To coordinate and share research activities on, and related to, 2018 QuakeCoRE GMSV research projects

Agenda:

- [Overview of the 2018 FP1 coordinated project](#) (Brendon Bradley, ~5 minutes)
- Plans for ["Rapid development of regional basin models"](#) (verbal summary given) (Liam Wotherspoon, ~10 minutes)
- Discussion (All, ~5 minutes)
- Progress of ["Improvements to ground motion of small-to-moderate magnitude earthquakes in the Canterbury, NZ region"](#) (Robin Lee, ~15 minutes)
- Discussion (All, ~5 minutes)
- Progress of ["Ground motion simulations using a multi-segment source model for the 2010 Darfield earthquake"](#) (Hoby Razafindrakoto, ~15 minutes)
- Discussion (All, ~5 minutes)

- Progress of ["Cybershake NZ v17.9: NZ simulation-based PSHA"](#) (Karim Tarbali, ~10 minutes)
- Discussion (All, ~5 minutes)
- Progress of ["Development of Vs30 and associated uncertainty maps for NZ based on geologic and topographic proxy parameters"](#) (Kevin Foster, ~15 minutes)
- Discussion (All, ~5 minutes)

Participants: Brendon Bradley (UC), Reagan Chandramohan (UC), Jagdish Vyas (UC), James Dismuke (Golder/UC), Hoby Razafindrakoto (UC), Karim Tarbali (UC), Seokho Jeong (UC), Robin Lee (UC), Peter Stafford (Imperial), Connor Hayden (UA), Didier Pettinga (Holmes), Manesh Malla (UC), Paul Somerville (AECOM), David Dempsey (UA), Jim Kallamianos (Merrimack), Ricardo Taborda (Memphis), Chris McGann (UC), Ethan Thomson (UC), Kevin Foster (UC).

Apologies: