

INFERRED SOURCE MODELS FOR ALPINE FAULT EARTHQUAKE SCENARIOS AND INFLUENCE ON SEISMIC HAZARD

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As part of the Southern Alps Long Skinny Array (SALSA) project, ~35+ seismometers have been deployed with 10–12 km spacing along a 450 km-long section of the Alpine Fault. SALSA is focused on determining the ground motions likely to be produced by a future Alpine Fault earthquake. This project is addressing three principal objectives: (1) Determine the Alpine Fault's subsurface geometry, present-day slip rates, and spatial variations in how tectonic stresses are currently accumulating on the fault, (2) Estimate the ground shaking that would be recorded at seismometers throughout central and southern New Zealand by localised slip at different points on the Alpine Fault, focusing on the synthesis of long-period Green's functions representing accurate path effects between sources distributed along the fault and population centres throughout the South Island, and (3) Calculate the ground shaking hazard from geologically informed earthquake rupture scenarios. In this presentation we will address the influence of inferred Alpine Fault source models derived from empirical data as well as current knowledge of the fault geological and geophysical parameters on regional seismic hazard.

