

USC CENTER FOR GEOTHERMAL STUDIES (CGS)
DISTINGUISHED SPEAKER PROGRAM (DSP)

Presents

**Induced Seismicity in The Geysers
Geothermal Field, California: Prati-32
Injection Test**

By

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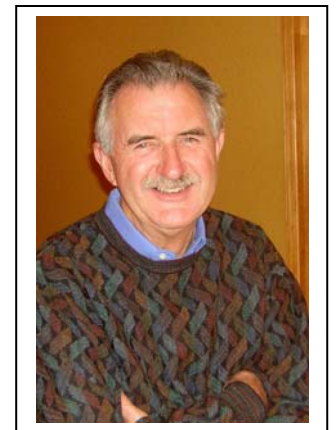
Tuesday, February 10, 2015, 10:00 -11:00a.m., HED-116

ABSTRACT:

We demonstrate an analysis of micro-earthquake data from the Prati-32 injection test at The Geysers. The goal is to identify fractures, the state of fluids, and permeable zones. The approach is to extract as much information as possible from micro-earthquake recordings. We obtain earthquake source properties (hypocenters, magnitudes, stress drops, and moment tensors), 3D isotropic velocity (V_p and V_s) and 3D attenuation properties (Q_p and Q_s - seismic quality factors), derived elastic moduli (Lambda, Bulk and Young's moduli), and Poisson's ratio. We then utilize rock physics in interpretation of these parameters to identify reservoir properties. Because the injection test is into a previously undisturbed formation (below) the traditional development zone, we can test our analysis against the location and time of injection.

BIO:

Lawrence Hutchings is a seismologist who serves as a Staff Scientist at Lawrence Berkeley National Laboratory (LBNL). Before coming to LBNL in 2007, he was a research scientist at Lawrence Livermore National Laboratory since 1989, where he primarily worked on methods to develop design ground motions for hazard studies, tomography, and source properties of earthquakes. He previously worked for 10 years in industry evaluating earthquake hazards for nuclear reactors and conventional power facilities. Since 2007 he has worked on geothermal reservoir modelling. He also has several patents in human navigation and owned a start-up company between 1997 and 2005.



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