

## Christopher Sherman

Lawrence Livermore National Laboratory (LLNL)

May 21, 2018 3:00 PM

McCone Hall 265, UC Berkeley

**Title: Building a geomechanical framework for interpreting DAS measurements**

**Abstract:** The development of distributed fiber-optic acoustic sensor (DAS) technology has produced a massive source of new data that has the potential for monitoring processes in the subsurface, such as geothermal energy production or hydraulic fracturing. DAS is designed to measure strain (or strain rate) at a high spatial and temporal resolution over large distances, using the fiber itself as a sensor. Because of its relative novelty to the geophysical community, a robust and quantitative framework for interpreting these data is currently lacking. In our work, we use a massively parallel geomechanics code to generate synthetic DAS

measurements, directly relate them features observed in the models, and develop strategies for interpret the equivalent field data. Because this approach is numerical, we are also able to design and evaluate the effectiveness of new acquisition geometries.

**Speaker Bio:**



Dr. Sherman received his Ph.D. from UC Berkeley in 2015, and is now a staff scientist at Lawrence Livermore National Laboratory. His current research interests include computational geophysics, induced microseismicity, and fiber-optic distributed acoustic sensor (DAS) technology.