

Bay Area Geophysical Society Seminar Series



Exploring offshore plate tectonics and continental shelf groundwater using electromagnetic geophysics

Dr. Kerry Key

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Abstract:

This talk looks at recent advances in marine electromagnetic imaging of fluids in the crust and mantle at tectonic margins. At the fast spreading East Pacific Rise, magnetotelluric data image partial melts in the upwelling mantle. At the Middle American subduction zone, controlled-source electromagnetic data reveal water rich bending faults and a highly porous plate décollement. On the US Atlantic continental shelf, electromagnetic data map a laterally continuous submarine freshwater aquifer extending 90 km offshore.

Presenter's Bio:



Kerry Key is an Associate Professor of Earth and Environmental Sciences at Columbia University. He received a B.S. in Earth Science from the University of California San Diego in 1998 and a Ph.D. in Geophysics from Scripps Institution of Oceanography in 2003. Key's research applies electromagnetic geophysical methods to map fluids in Earth's crust and mantle. In 42 seagoing scientific expeditions he has collected data to study mid-ocean ridges, subduction zones, the deep-ocean abyssal plain, continental margins and island arc volcanoes. He recently spent three months collecting data on the West Antarctic Ice Stream. In support of his field projects and industry sponsored research, he develops freely available electromagnetic modeling and inversion codes. He has served as an associate editor for the journals *Geophysics* and *Geophysical Journal International*, and is a member of the American Geophysical Union and Society of Exploration Geophysicists.

Zoom meeting information:

Zoom ID: 961 0451 9129

Password: BAGS4ever