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Jian Lin: Jian Lin

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My research focuses on Earth's tectonic processes both on land the under the oceans. My colleagues and I have conducted extensive research on how earthquakes interact through the transfer of stress in space and time. I also investigated mid-ocean ridge volcanism, deep-sea hydrothermal vents, underwater earthquakes, and tsunamis, and have led and participated in numerous oceanographic expeditions to the Pacific, Atlantic, and Indian Oceans.

I collaborated extensively with colleagues at the U.S. Geological Survey and around the world on earthquake research. We seek to understand the physics of earthquakes and to develop better means for earthquake hazard assessment and forecasting. Notable earthquakes that we have investigated include the 1960 Chile, 1992 Landers, California, 1994 Northridge, 1999 Hector Mine, 2008 Wenchuan, China, and 2010 Haiti and Chile earthquakes.

My colleagues, students, and I also explored the mystery of deep-sea volcanic, tectonic, and hydrothermal processes. We have conducted marine geological and geophysical mapping, seismic experiments, hydrothermal vent surveys, and rock dredging programs in various oceans and seas. We investigated questions such as how the oceanic crust is created by mantle convection and vigorous submarine volcanism at mid-ocean ridges; how hotspots such as Iceland and the Galapagos Islands are formed; how deep-sea hydrothermal venting and biology are related to seafloor geological processes; what control the characters of deep-sea faults and abyssal hill terrains; how submarine quakes differ from those on land and what do they teach us about the physics of earthquakes. My most recent work at sea was using a deep-sea robot to explore and investigate new hydrothermal vents in a previously little studied region of the ocean.

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Mail: Woods Hole Oceanographic Institution, 266 Woods Hole Road, Woods Hole, MA 02543, USA.
E-Contact: info@whoi.edu; press relations: media@whoi.edu, tel. (508) 457-2000
Problems or questions about the site, please contact webdev@whoi.edu