

Title **Memories of a Planet**

Speaker Prof. John Herndlund
Vice Director
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Date & Time Monday, November 16, 2015 4:00 p.m.

Place Meeting room, I²CNER Bldg., 2F,
Ito campus, Kyushu University

Abstract

You are a geological phenomenon. Your blood exhibits a salinity similar to the ocean, your bones are limestone, and your brain contains small magnetite crystals and senses the field generated at the core of our planet. The magnetic heart beat of the core has been pumping for over 3.5 billion years, fueled by mantle convection and plate tectonics. Plate tectonics sustains disequilibrium conditions and produces a variety of environments that support the origin, sustenance, and diversity of life on Earth. There is no easy way to draw a boundary between you and your planet, and the myriad inter-linked processes that are coupled across vast spatial and temporal scales. In this talk I will introduce some of these unifying concepts to elucidate the relationship between a planet and its life, and our efforts to establish Earth-Life science as a WPI focus center based at the Tokyo Institute of Technology. If time permits, I will discuss some of the recent progress and challenges in understanding how solid state creep accommodates plate tectonics and mantle convection, and some of the new ideas that are being fomented at the Earth-Life Science Institute (ELSI). I will also give a brief account of a geologist's deep time perspective on the issue of fossil fuels, and offer some ideas for collaboration between I²CNER and ELSI.

About the Speaker

Professor Herndlund was born in South Dakota, USA. He became interested in the Earth and a very young age, which motivated him to obtain a BS degree in Geology & Geophysics at Arizona State University. He earned a MS and PhD in Geophysics and Space Physics from the University of California, Los Angeles (UCLA) in 2006, and launched his international science career in France at the Institut de Physique du Globe de Paris (IPGP). He spent two years at the University of British Columbia before returning to the University of California, this time at Berkeley (UCB). In 2012 Herndlund became a principal investigator on the proposal to establish an Earth-Life Science Institute (ELSI) as a World Premiere International focus center at the Tokyo Institute of Technology, and moved to ELSI full-time when it was established in 2013. As a Vice Director he has played a key role as one of the founders of the institute, both in recruiting scientific staff and establishing the research organization. He is well-known for his work in the field of geophysics, particularly in the frontier research field of Earth's interior, and in his young career he has already proposed major hypotheses that have altered the course of deep Earth science. Professor Herndlund received the Durk Doornbos Memorial Prize from the International Union of Geodesy and Geophysics in 2008, as well as the Jason Morgan Early Career Award from the American Geophysical Union in 2010.

Host: Professor Petros Sofronis

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