AOB & COE Seminar

Mr. David Shelly (Stanford University)

Title: High-Resolution Subduction Zone Seismicity and Velocity Structure Beneath Ibaraki Prefecture

Research Center for Prediction of Earthquakes and Volcanic Eruptions

August 1, 2005 （Mon）14:00-15:00

Lecture Room #1 (AOB anex)

Abstract :

We use double-difference tomography (tomoDD) [Zhang and Thurber, 2003] and waveform-derived cross-correlation differential arrival times to invert for the earthquake locations and P- and S-wave velocity distributions in the subduction zone under Ibaraki Prefecture. In order to best estimate the velocity structure, we examine different regularization techniques, including an L1-norm regularization that allows sharp velocity contrasts and a geologically motivated, directionally variable regularization that exploits our prior knowledge of slab geometry in this subduction zone. In the subduction zone beneath Ibaraki, we find a zone of interplate thrusting events extending as deep as 60 km, forming a distinct lineation in cross-section. In the upper part of the downgoing plate, we find a zone of very high Vp/Vs ratio, which may indicate the presence of high pore pressures due fluids trapped in the subducting crust.

主催：東北大学大学院理学研究科 地震・噴火予知研究観測センター　Tel: 022-225-1950（代表）

Center HP： http://www.aob.geophys.tohoku.ac.jp/education/seminar/aob-seminar/

お問合せ先：matuzawa@aob.geophys.tohoku.ac.jp