
[EJ] Evening Poster | S (Solid Earth Sciences) | S-CG Complex & General

[S-CG58] Investigation of inputs to subduction zones: Influence of tectonic processes on the incoming plate

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Various tectonic processes occur on the seaward side of the trench associated with bending of the incoming oceanic plate, e.g., fracturing of oceanic crust, infiltration of water, and intraplate volcanism. Investigation of these processes and their influence on the incoming plate provides important information on the boundary condition at the trench, inputs to subduction zones. We welcome contributions from a broad range of earth science (geophysics, geology, petrology, and so on) discussing topics related to inputs to subduction zones such as occurrence of tectonic processes due to bending of the incoming plate, modification of the incoming plate by the processes, relationship between the processes and the inherited structure of the incoming plate, and influence of the processes on the subduction plate interface. We hope discussions are made on studies of a variety of subduction zones, including the Japan Trench and the Nankai Trough, and comparative studies among different subduction zones.

[SCG58-P01] Progress and perspective of drilling plans that elucidate modification of oceanic plate just prior to subduction

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It is essential for understanding of the plate boundary earthquake in the subduction zone and elemental input through the subducting oceanic plate to elucidate the nature and conditions of the subducting oceanic plate. One of the most important discoveries in ocean floor sciences in the last decade is the extensive hydration along plate-bending induced normal faults in the oceanic plate just prior to subduction. We have already submitted a pre-proposal for International Ocean Discovery Program for plate bending-induced normal fault hydration in the northwest Pacific region where the old, therefore cold, oceanic plate is subducting. It is very important to note that the northwest Pacific region may be facing a special geological stage that suffers extensive deep hydration by the 2011 off the Pacific coast of Tohoku Earthquake. In order to decide the drilling site in the northwest Pacific region, the difference in angle between the direction of paleo mid-ocean ridge and the trench. In addition, it has recently suggested that petit spot volcanism activity on the old oceanic plate in the northwest Pacific region (Hirano et al., 2006 Science) could modify physical property of the oceanic plate. A new science drilling program (Chikyu Shallow Core Program: SCORE) using drilling vessel "Chikyu" has been launched and a new drilling proposal on modification of top surface of the oceanic plate by petit spot magmatic activity has been applied for the SCORE. In the presentation, we will introduce the recent research progress and future prospects for these drilling programs on incoming plate.