

グローバルCOE地球惑星科学 フロンティアセミナー

講演者 : Caldwell Grant 教授
所属 : CRI, GNS Science, New Zealand
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担当教員 : 市來 雅啓 助教
内線#3439 / E-mail:ichiki@aob.gp.tohoku.ac.jp

Magnetotelluric exploration for the slow slip event in the Hikurangi subduction zone, New Zealand.

講義内容 :

The subduction interface beneath the Ruakumara Peninsula in northern part of the Hikurangi subduction margin off the east coast of New Zealand's north island is exceptionally shallow compared with other well studied subduction margins. Here, GPS data suggest that the upper and lower plates are weakly coupled in this region and slow-slip events occur just off-shore of the peninsula at shallow depth (<15 km). Mechanisms controlling slow slip are poorly understood, but may be controlled in part by fluids. Fluids may also provide an explanation for the weak coupling of this part of the Hikurangi subduction margin. MT data from a pilot study of the Raukumara Peninsula show that a marked decrease in the conductivity of the fore-arc sediments coincides with the onset of seismicity at ~10 km depth. Below the sediments, a dipping band of seismicity and intermediate conductivity at the subduction interface connects to a deeper more conductive zone above the down-going plate. This deeper conductive zone is interpreted to be under-plated sediments. These results and results from previous seismic tomography in the area suggest that the intermediate resistivity zone represents a region of upward fluid transport near plate interface followed by fluid escape into the upper-plate.

主催 : 東北大学 グローバルCOEプログラム
『変動地球惑星学の統合教育研究拠点』
拠点リーダー 大谷 栄治

連絡先: 宮城県仙台市青葉区荒巻字青葉
東北大学大学院理学研究科 地学棟 404号
GCOE地球惑星科学事務室 苫米地 由布
TEL/FAX 022(795)6668