

VISIT REPORT

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Faced with tragic events of last few days first of all I would like to offer my condolences to the Japanese people, especially to the families got affected in this awful disaster – major earthquake and giant tsunami.

During my stay in ERI I worked in cooperation with Professor Hisashi Utada, who was my host, with Associate Professor Hisayoshi SHIMIZU and Assistant Professor Kiyoshi Baba.

During my stay in ERI I have visited Kyoto University, Institute for Research on Earth Evolution (JAMSTEC), Kakioka Magnetic Observatory and Tierra Technica Ltd.

The main scientific goal of my visit was to continue our joint studies of electrical conductivity structure of the transition zone between Eurasia and the Pacific Ocean with the special focus on the role of deep faults associated with the plate boundaries.

The analysis of geophysical data including magnetic anomalies maps (see Fig. 1) makes it possible to propose the earthquakes at outer rise could be responsible for hydration of subducting oceanic lithosphere, thus enabling the formation of serpentinites at lower crustal depths. The serpentinite mantle edge is seen in magnetic and gravity fields as elongated positive magnetic and negative Bouguer anomalies.

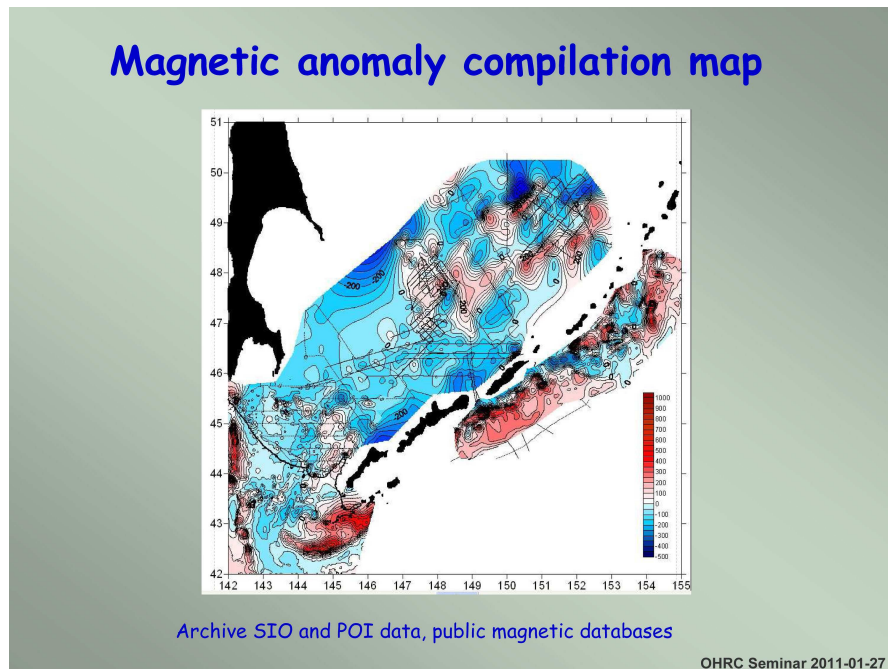


Fig.1. Magnetic anomaly map for Kuril Island Arc and the Okhotsk Sea. The elongated positive magnetic anomaly is seen in Kuril Island forearc marks the serpentinite mantle edge.

Deep cracks occurring at outer rise as going as deep 30-50 km could be responsible for electric shortening reducing coast effect. Several hypothetical 2D conductivity models were constructed to estimate the parameters of this subvertical conductive fault zone.

The results of my previous studies and some aspects of the current research were presented at two seminars, the first at ERI in Tokyo and the second at IREE in Yokosuka.

I also had fruitful discussion on submarine magnetotelluric technology with president of Tierra Technica Nobihito Onishi and with Dr. Takafumi Kasaya and Dr. Hiroshi Ichihara at JAMSTEC. The novel application of seafloor EM observation for detecting the tsunami wave propagation in the ocean was reviewed with Dr. Yozo Hamano (JAMSTEC) and Ass. Prof. Hiroaki Hoh (University of Tokyo).

From my perspective my stay at ERI was a great success. I am looking forward to the results of our collaboration and my next visit to Tokyo.

OHRC ERI, University of Tokyo
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