

# "Report of Research Activity "

IPGP contact: Prof. Jean-Paul Montagner

ERI host: Prof. Hitoshi Kawakatsu

**Location :** ERI, University of Tokyo.

**Dates :** 14-30 June 2017

## **General Objectives :**

My stay took place in the framework of the collaborative programme between ERI (Earthquake Research Institute, University of Tokyo) and IPGP (Institut de Physique du Globe de Paris), both institutions having a strong tradition of excellence in the investigation, understanding and monitoring of natural earth processes (short time and long time scale phenomena). My stay was also an opportunity to discuss with Masa Kinoshita-san, Mie Ichihara-san and Takashi Iidaka-san the future joint workshop ERI-IPGP which will take place at ERI on october 3-5, 2017.

## **Specific work:**

The work carried out during the two weeks was a follow-up of the papers published by Prof. Hitoshi Kawakatsu-san and co-authors on the new parameter  $\eta_{\kappa}$ . The objective is the inversion of normal mode eigenfrequencies in order to retrieve the depth distribution in the whole mantle of this parameter and to estimate how its inversion might affect the other anisotropic parameters  $\xi$  (radial S-wave anisotropy) and  $\phi$  (radial P-wave anisotropy). So far, all inversion codes for inverting this parameter  $\eta_{\kappa}$  have been rewritten and validated. Some preliminary results on the amplitude at depth of  $\eta_{\kappa}$  have been obtained. Additional work is needed to finalize the depth profile of  $\eta_{\kappa}$ . It might be done by the end of 2017.

In conclusion, these weeks have been very productive and, I would like to thank all scientific and administrative people of ERI who always try to help you and made this stay so enjoyable.

## **Publications on $\eta_{\kappa}$ :**

Kawakatsu H., T.-R. Song, J.-P. Montagner, On DLA's  $\eta_{\kappa}$ , Special tribute to D.L. Anderson, G.S.A., 514, SPE514-03, 2015.

Kawakatsu, H., A new fifth parameter for transverse isotropy, *Geophys. Jour. Inter.*, 204 682-685, doi: 10.1093/gji/ggv479, 2016.

Kawakatsu, H., A new fifth parameter for transverse isotropy II: partial derivatives, *Geophys. Jour. Inter.*, 206, 360-367, doi: 10.1093/gji/ggw152, 2016.