The Lithosphere – Asthenosphere System: Nature of the Tectonic Plates (LAB 2015)

British Geophysical Association
New Advances in Geophysics 2015

The Geological Society, Burlington House, Piccadilly, London
5th & 6th February 2015

UNIVERSITY OF
Southampton
**Schedule**

**Thursday 5th February 2015**

09.30  Registration & Coffee
10.15  Introduction – Kate Rychert

**Session 1: Chaired by Kate Rychert**

10.30  Mid-lithospheric discontinuity below oceans from seismic surface waves – *Jean-Paul Montagner*
10.55  Olivine textural evolution constraints the nature of the lithosphere – asthenosphere boundary – *Lars Hansen*
11.20  Origin of the low velocity zone – *Lars Stixrude*
11.45  Seismic imaging of a mid-lithospheric discontinuity beneath Ontong Java Plateau – *Saikiran Tharimena*
12.05  Trans-Atlantic imaging of lithosphere – asthenosphere boundary using active source seismic methods – *Satish Singh*
12.25  Discussion
12.30  Lunch

**Session 2: Chaired by Nicholas Harmon**

13.30  Origin of geophysical characteristics of the asthenosphere – *Shun-Ichiro Karato*
13.55  Experimental constraints on seismic properties and rheology of the upper mantle: Effects of water and melt – *Ulrich Faul*
14.20  Models of lithosphere thickness and dynamic topography inferred from seismic tomography – *Bernhard Steinberger*
14.40  Oceanic boundary layer structure and dynamics from a comprehensive analysis of seismic anisotropy – *Thorsten Becker*
15.00  Implications of possible rapid core cooling for Earth’s atmosphere-mesosphere boundary and a plume-fed asthenosphere – *Jason Morgan*
15.25  Discussion
15.30  Break

**Session 3: Chaired by Satish Singh**

16.00  Synthetic seismic structure of oceanic lithosphere – asthenosphere and comparison with observations – *Saskia Goes*
16.20  Constraints on melt geometry and distribution in the crust and mantle from seismic anisotropy – *James Hammond*
16.40  Stability of the LAB during lithosphere extension and rifted margin formation: insights from forward numerical modelling – *Ritske Huismans*
17.05  Discussion
17.15  Poster Session and Wine Reception (Lower Library) – See the end of schedule for list of posters
Friday 6th February 2015

Session 4: Chaired by Ulrich Faul
10.00 A brief against the lithosphere – asthenosphere boundary hypothesis of plate tectonics – Thomas Jordan
10.20 Seismological constraints on the continental lithosphere – asthenosphere boundary – Karen Fischer
10.45 Break

Session 5: Chaired by Karen Fischer
11.20 LAB – transition between fossil and present-day flow-related velocity anisotropy – Jaroslava Plomerova
11.40 Deciphering the formation of the continental lithosphere – Rainer Kind
12.00 Mantle discontinuities and the origins of cratonic lithosphere in the northern U.S. – Emily Hopper
12.20 Lithospheric and upper mantle stratifications beneath Colombia: Using receiver functions from S waves – Jose Faustino Blanco Chia
12.40 Discussion
13.00 Lunch

Session 6: Chaired by Saikiran Tharimena
14.00 Constraining the conditions required for the delamination of subducting crust – Ben Maunder
14.20 The role of small-scale convection on the formation of volcanic passive margins – Jeroen van Hunen
14.40 Evidence for power-law flow in the Wharton basin asthenosphere – Sylvain Barbot
15.00 New constraints on the nature of the eastern Mediterranean crust – Roi Granot
15.20 Discussion
15.45 Conclusion – Kate Rychert

Instructions:
- Please report to the conference reception desk at the main entrance of the Geological Society situated on Piccadilly.
- Talk sessions will be held at the Janet Watson Lecture theatre.
- Poster and wine reception will be held in the lower library.

Contact:
Website: http://projects.noc.ac.uk/lab2015/
Email: lab2015@soton.ac.uk
Poster Presentation – 5th February 2015

1. Crustal imaging of Northern Scandinavian mountains from receiver function and ambient seismic noise analysis – Walid Ben Mansour

2. Slab driven mantle weakening and laterally variable plate–mantle decoupling – Margarete Jadamec

3. LIRHOS-CAPP: Exploring the lithosphere–asthenosphere system of northern Scandinavia applying ambient noise and surface wave tomography – Alexandra Gassner

4. The effect of strong heterogeneities in the upper mantle rheology on the dynamic topography, tectonic plate motion and the geoid – Anthony Osei Tutu

5. Bayesian inversion of broadband, surface-wave dispersion curves for shear-velocity structure and anisotropy of the lithosphere and asthenosphere – Matteo Ravenna

6. Slab dehydration and deep water recycling from present-day to the early Earth – Valentina Magni

7. Numerical modeling of slab breakoff and mantle flow patterns to assess the potential for generating post-collisional magmatism – Rebecca Hayes

8. Investigating the influence of viscoelastic post-seismic deformation at GPS site over the East Anatolian fault region – Fatih Sunbul

9. Lithospheric structure and LAB depth beneath the north Anatolian fault zone, Turkey – David Thompson

10. A seismic reflection image for the base of a tectonic plate – Tozer B.