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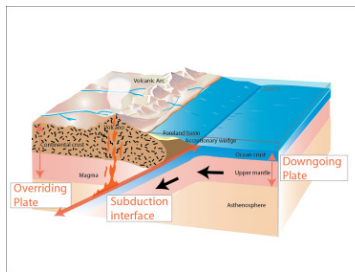
Home Counties North Regional Group

Did the earth move for you? From great earthquakes to silent slip

Dr Rebecca Bell

Where one tectonic plate slides beneath another, motion in the subduction zone is controlled by the plate boundary fault zone. Although some plate boundary faults fail in catastrophic earthquakes, such as the 2011 Tōhoku-oki, Japan and the 2004 Sumatra-Andaman earthquakes, at some subduction margins the plates creep past each other effortlessly with no stress build-up along the fault and no large earthquakes. Determining the controls on how the fault moves is fundamental to assessing the seismic hazard and to our understanding of the earthquake process itself. In the last 15 years a completely new type of seismic phenomena has been discovered at subduction zones - “silent earthquakes” or slow-slip events. These release as much energy as a large earthquake, but do so over several weeks or even months with no ground-shaking at all. Determining whether such events may trigger highly destructive earthquakes and why they occur at all are 2 of the most important questions in earthquake seismology today.

The talk will discuss the various types of fault-slip behaviour that have now been discovered at subduction margins and look at the new techniques being used to learn why some subduction megathrust faults slip in devastating earthquakes and others slide silently.



Rebecca Bell began her career in Earth Science by completing a MSci degree at the University of Oxford. She then undertook a PhD in Marine Geophysics at the National Oceanography Centre Southampton before moving to New Zealand to work as an Active Source Seismologist at GNS Science. Rebecca is now a Research Lecturer in the Department of Engineering and Earth Science at Imperial College, London.

Date: Thursday 23 April 2015

Venue: Affinity Water, Tamblin Way, Hatfield, Herts AL10 9EZ

Refreshments 18.00

Meeting starts 18.30

For more information on the Home Counties North Regional Group visit the website at

<http://www.geolsoc.org.uk/hcnrg>

