

**Solid Earth Physics Seminar, Harvard University**

**Monday (not the usual day!), 30 March 2015, 1:30 pm  
Faculty Lounge, 4th Floor, Hoffman Lab, 20 Oxford Street**

***The Deep Structure and Evolution of the Red Sea and Afar***

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**Abstract:**

Continental rifting is a fundamental process that has operated on Earth since the first large continents formed at about 3.8 Ga. The late Cenozoic Afro-Arabian Rift is the best place on Earth to study the present-day process of continental rifting. Key questions include the deep crustal structure of the rifted crust, evidence for mantle flow directions, and the possible role of mantle plumes, including the African Superplume. I present a synthesis of the present knowledge of the northern Afro-Arabian Rift based on geologic, geochemical, geophysical and geodynamic studies. Key observations include seismic shear-wave splitting results that indicate mantle flow northward from the Afar plume, as well as seismic tomographic images indicating more than one plume.

