Regional studies of Earth's inner core

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Earth's inner core contains a number of mysterious features - it appears to have a hemispherical nature, whereby the 'eastern' and 'western' hemispheres have different velocities. Beyond this some parts of the inner core appear contain considerable seismic anisotropy whereas others seem to be relatively isotropic. Well distributed seismic networks can provide new insights into the inner core; the optimal station geometry is a distance of around 150° between the station and source. Figure 1* below shows how data recorded in South America and Europe can illuminate the 'hemisphere boundary region' under the Pacific Ocean. As Earthscope's Transportable Array begins to record more data from the eastern portion of the United States, the equivalent hemisphere boundary region under Africa will likewise come into better seismological focus.

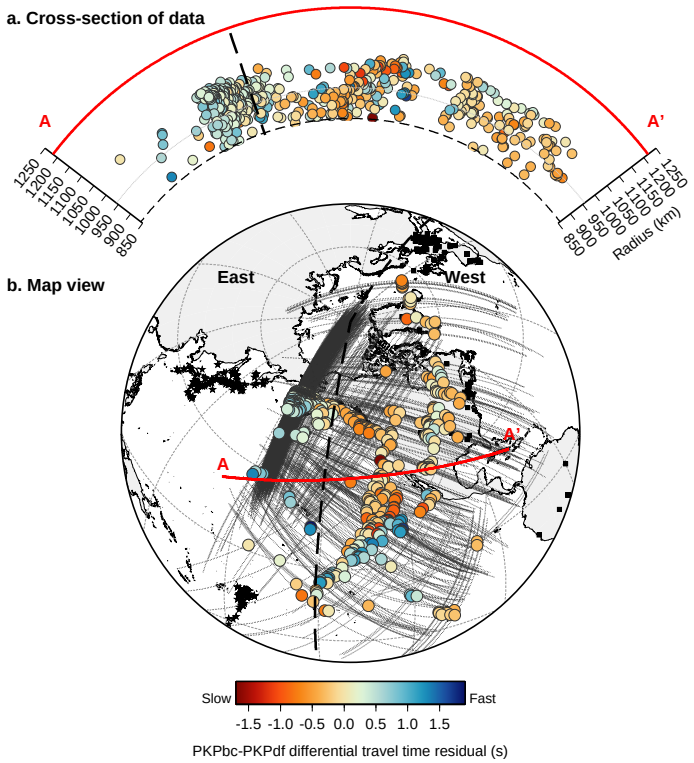

Figure 1: PKPbc-PKPdf differential travel time data corresponding to events recorded in South America and Europe.

*From Irving & Deuss, 2013, in prep.