



goals and current limitations of upper mantle seismic tomography

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Presently, we have a fantastic amount and variety of seismic methods at hands to assess uppermost mantle characteristics. With increasing general interest and the current research focus in plate tectonic processes, however, the goals of and demands for seismic tomography have again increased. The various seismic tomography methods complement each other to some degree but each is still limited to a point that they individually and combined fall short of matching sometimes even our current goals. In optimal situations, however, resolution of structure and physical parameters are within reach that allow significant improvements in geodynamic understanding. In this study, we will discuss what we presently can resolve by receiver functions, local source body wave tomography, high-resolution teleseismic tomography, anisotropy studies, surface waves by presenting results from published applications of all kinds of mantle seismic tomography.