

The structure beneath the South India and the Himalaya: a quantitative assessment of past and present geology

Abstract: The Continental crust with a thickness varying from ~30 to 70 km is store house for all the natural resources. Being far more ancient than the oceanic crust, it is the primary archive of the Earth's geological history. There are two central ideas that govern our thinking about the continental crust and its history. One is the nature and origin of the material that went into making of the crust and the other is process responsible for its present structure. A clear consensus has not been reached about the formation of the continental crust and remains topic of active research and debate. Understanding how the continental crust evolved through time and how it has been preserved are key issues of the ongoing debate. This talk aims at providing new knowledge related to the evolution of the continental crust in South India and Himalaya that has long geological history beginning from Precambrian to present day tectonics. The study used multiple seismological approaches to map the crustal structure. These includes: Moho depth and V_p/V_s determination from the stacking and search algorithm applied to teleseismic receiver functions; 3-D shear velocity and seismic anisotropy using Rayleigh and Love waves waveform computed from ambient noise; mapping the shear velocity structure at individual station using joint inversion of receiver function and Rayleigh wave group velocity data and mapping the structure using joint inversion of body and surface waves.

by
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WHERE
Class room 1, Academic Building

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