



## The Moho Discontinuity Beneath the Continental Crust

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The seismic signature of the Moho from which geologic and tectonic evolution hypothesis are derived are, to a large degree, a result of the seismic methodology which has been used to obtain the image. Seismic data of different types: passive source (earthquake) broad-band recordings; controlled source seismic refraction; controlled source dense wide-angle deep seismic reflection; controlled source normal incidence (Virboseis or explosives); have contributed to delineate the Moho as a relatively complex transition zone. Of critical importance for the quality and resolution of the seismic image are the acquisition parameters, used in the imaging acquisition experiments. A variety of signatures have been obtained for the Moho at different scales. This variety prevents the development of a single universally applicable interpretation. In this way source frequency and sensor spacing are mostly responsible for the vertical and lateral resolution of the images, respectively. In most cases the different types of data have proven to be complementary in order to provide a full picture of this important structure and its relationship to the crust-mantle transition. In regional seismic studies carried out using passive source recordings the Moho is a relatively well de

fined structure with marked lateral continuity. The characteristics of this boundary change depending on the geology and tectonic evolution of the targeted area. Controlled source local studies reveal the Moho as a sharp refraction velocity contrast while the Moho in the high quality normal incidence seismic reflection images is interpreted to be the base or abrupt downward decrease in seismic reflectivity. The origin of the Moho and its relation to the crust-mantle boundary is most probably better constrained by careful analysis of the structural details of its internal structure, these are complex and varied. Simple conclusions are that: the Moho may be in areas and old feature in others, it can be interpreted as a young structure result of recent tectonic scenarios.