

Crustal study of Muzaffarabad area based on gravity data

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The geological study based on gravity data has been carried out in the Muzaffarabad city. The geological model computed by geophysical experiment delineated the thickness of crust and the subsurface structural elements i.e. Main Boundary Thrust (MBT) and Jhelum strike slip Fault (JF). These thin skinned faults are developed due to compressional stresses which are generated on the eastern and western limbs of HKS due to collision of Indian and Eurasian plates. In the study area MBT lies between Muree Formation of Miocene age and Hazara Slates of Precambrian age and dips at an angle of 73° SW and penetrated throughout the sedimentary/metasedimentary wedge. In the study area model also delineated the Jhelum left lateral strike slip fault which joins the MBT at the depth of 12 km. The model computed 15 km thick sedimentary/metasedimentary wedge and 53 km total thickness of the crust in study area. The study also delineated the 38 km thick crystalline crust of Indian shield which is dipping at an angle of 5° NE in the Muzaffarabad city.