

Crustal study of the core of Hazara Kashmir Syntaxis based on geophysical Data in Azad Jammu and Kashmir

Muhammad Rustam Khan, M. Saleem Mughal and Fahad Hameed
Institute of Geology, University of Azad Jammu and Kashmir Muzaffarabad

The geological study based on geophysical data has been carried out in the core of the Hazara Kashmir Syntaxis. The present study based on geophysical data demarcated the northwest-southeast trending Bagh Basement Fault (BBF) and Kashmir Boundary Thrust (KBT) in the core of Hazara Kashmir Syntaxis (HKS). The thick skinned Bagh Fault on surface is running within the Murree Formation that dips at an angle of 45° NE and penetrated upto Moho depth. The study also delineated the NW – SE trending KBT in the northeast of BBF. In Muzaffarabad area the carbonate rocks of Cambrian to Eocene age are thrust over the Molasse of Murree Formation along this fault and from Muzaffarabad to Bagh it is also running within the Murree Formation. The seismicity, landsliding, shearing, crushing and cracks along the KBT, Jhelum strike slip fault and Main Boundary Thrust (MBT) indicated that the area in the core of HKS is tectonically active. After the 8th October, 2005 earthquake a NW – SE trending rupture developed between Kawai and Davalian. The seismicity in the crystalline crust under the rupture and magnetic and gravity variation across the Kawai Davalian fault also confirm that this fault joins the Indus Kohistan Seismic Zone (IKSZ) which is penetrated upto Moho depth