Tectono-stratigraphic evolution of the Potwar Plateau and the Salt Range, NW Himalayan Foreland Basin, Pakistan

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Salt range and the Potwar plateau are the most recent expressions of the Himalayan orogeny.These are foreland thrust and fold belt located at the NW Himalayan front in Pakistan. Seismic interpretations of the various seismic lines across the basin has been done and used to construct the geometries of the basin. Potwar plateau and Saltrange has been sampled at 86 different location for the paleomagnetism and magnetostratigraphic studies. The anisotropy of the magnetic susceptibility (AMS) has been carried out and its results are compared with the stress orientation obtained by the paleostress inversion of the fault plane measurements. On the basis of above interpretations and the interpretation of geometries of structures developed, Potwar pleateau and salt range have been divided into 3 main divisions (NPDZ, Soan syncline, and southern potwar&saltrange). Eastern and western margins fold and thrust belt is marked by the strike slip faults. The frontal thrust developed above the basement normal step and eocambrian salt thrusted and exposed against Punjab plains. Tectonic loading coupled with tectonic wedge developed a decollement at eo-cambrian evaporites level above the Indian shield. The geometry of the salt range and Potwar plateau is controlled by the basement ramp, Autochthonous thickness of the decollement layer (evaporites) and thickness of the overlying sediments (roof Sediments).

Keyword: Seismic interpretations, Paleomagnetism, Magnetostratigraphy, AMS (anisotropy of the magnetic susceptibility), Paleostress inversion.