

## **The Macroseismic Field Generated by the mb= 6.4 Chamoli Earthquake(NW Himalaya) of 28<sup>TH</sup> March, 1999**

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On 28<sup>th</sup> March 1999 at 19 hrs 05 m 13 sec (GMT) an Ms=6.6 and mb=6.4 (USGS) destructive earthquake occurred in northwestern Himalaya, leaving a toll of 64 dead and more than 50,000 rendered homeless with 400 injured and loss of crosses of Rupees. The main epicenter was located between Chamoli and Okhimath. The event was associated with a nearly NW-SE low dipping trending thrust fault and generated a lot of co-seismic effects and collateral hazards in the intensity VIII and VII zone. Shortly after the occurrence of earthquake, the team visited the region for Macroseismic observation. The main aspects of our observation were concentrated to the following parameters i.e. Damage pattern to different type of building, identification of potential weak links which leads to failure after earthquake, coseismic surface breakage, slip and collateral effect like landslides, hydrological changes etc. The maximum damage characterized by destruction of adobe construction, collapse of mud mortar houses, damage to stone masonry in the form of Grade 2 damage and fine hair cracks to partition walls of RCC construction. The development of wide open ground fissures in the valley side slopes, road formation cuts in the overburden material and initiation of innumerable landslides, rock dislodgment and failure of terrace slopes have been recorded in an area of 1200 sq.km. The degree of damage decreases progressively in E-W direction but sudden decrease in degree of damage in the south and south-southwest direction is noticed. An anomalous high of VI within isoseist V have also been noticed around New Delhi thus suggesting that New Delhi is also not a safe city from future damaging earthquake of Himalaya. The study of attenuation has demonstrated asymmetric distribution and this heterogeneous behavior of intensity attenuation, thus shows rupture asperity distribution. The tendency of increasing intensity due to bad construction, pounding and torsional effects was well seen in almost all the areas.