CHAMOLI EARTHQUAKE OF 29TH MARCH 1999 GARHWAL HIMALAYA INDIA : AN OBSERVATION

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The Garhwal Himalaya, a well known seismic tract has witnessed at least 85 seismic events of magnitude +4 in the recorded history of about one and a half century. The most recent event was the Chamoli earthquake (M 6.8), which struck the area in the early hours of 29th March 1999, and affected a large population, disrupted communication, brought about widespread and striking terrain changes, created panic and chaos. The strong ground motions have induced numerous landslides of rock fall type, overburden failures, slumps, debris slides, dislodgements and ground fissures. On the basis of pre and post – earthquake imagery 100 new slides have been identified in addition to reactivation of 17 old slide zones. The post earthquake scenario of hot water spring chemistry shows that there has been mixing of ground water with hot springs in different proportions. The main earthquake event was followed by a number of aftershocks and their decay patterns suggest rapid drop. It has been interpreted that the detachment surface from which the MCT branches off could be the causative tectonic features.

Intensity isoseismal has been drawn utilizing the modified Mercalli Intensity Scale. The maximum intensity in the epicentral tract is VIII and encompasses an area of 50 sq.km. The isoseismal are oblong and display asymmetrical shape. The meizoseismal area are around Chamoli – Gopeshwar, Akhori and Longa villages wherein complete collapse of majority of the poorly constructed houses, development of wide open ground fissures in flat topography, shaving of terraces and occasional collapse of pillared structures have been recorded. The damage surveys have also indicated areas of isolated intensity high of VI within V around Kunihar and Timbi in Himachal Pradesh and Duggadda in Uttar Pradesh. An anomalous high of V within isoseist IV has also been recorded around Delhi.