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Presentation Title: Study of Coseismic Deformation due to the March 28,1999 Mw6.5 Chamoli in the Garhwal Himalaya region and the March 20, 1993 Mw6.2 South-East Tibet earthquakes using InSAR

Abstract: The March 28,1999 Mw6.5 Chamoli, India earthquake occurred at the border of India and Xizang in the Garhwal Himalaya region. The coseismic deformation due to this earthquake has been studied using SAR data from ERS-1 and ERS-2 satellites. Analysis of the two interferograms from an ascending and descending tracks show deformation extending an area of approximately 30x30 square kilometers that is consistent with a nearly NE-SW trending north 15-degree-dipping thrust fault at a depth of 13.2 km. The difficulties of this area include the vegetation cover, the rugged terrain and frequent thick cloud cover. This is the first earthquake of the Himalayan region to be studied by this technique.

Analysis of ERS-1 and ERS-2 data for the March 20, 1993 Mw6.2 South-East Tibet shows deformation consistent with normal faulting on a nearly N-S trending east 55-degree-dipping fault at a depth of 7.8 km. The deformation pattern also shows an Mw5.1 aftershock that occurred on the same day with normal fault motion on a 25-degree-dipping fault at a depth of 8.1 km. This region is relatively arid which made it easier to produce the interferogram.

SRTM data was used for eliminating topography for both earthquakes.