# PSI Result of the Western Lesser Himalayas and Adjoining Piedmont Zone of Ganga Plain, India

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**Abstract:** Radar interferometry is a technique for extracting information about the Earth's surface by using the phase content of the radar signal as an additional information source derived from the complex radar data. The present study pertains to applications of DInSAR and PSInSAR techniques to identify surface deformations, in our study area which comprises of Lesser Himalaya, Siwalik Hills and the Piedmont zone of the Ganga plain. Most part of our study area is covered with dense forest or comes under agricultural, as well as some built-up areas. Since, our DInSAR result did not come up good, which may be due to some limitation of the techniques relating to the vegetation covers. Therefore, we emphasis on Persistent Scatterer (PS) InSAR technique, since PSI techniques is dominated by one stable scatterer that is brighter than the background scatterers, the variation in the backscattering can be reduced, and may be small enough to be ignored. PSI techniques rely on studying pixel which remains coherent over a sequence of interferograms. The kind of study of this method has been carried out successfully on the western side of the study area. The result in our area also reveals some obvious surface deformation, which may be related to the active tectonics movements in the region. And it has been verified with the earlier works in this region, based on the geomorphology and detail field investigation.

**Keywords:** Surface deformation, PSInSAR, India