

Differential Interferometric Results for Long Valley California Using SIR-C and ERS-1 Measurements

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The Long Valley area in northern California is a geologically active region that GPS measurements have shown steady uplift in the resurgent dome of 2-4 cm per year. Theoretically these displacements are large enough to be detectable using differential interferometric techniques. Repeat passes from the SIR-C instrument were collected in April and October of 1994 for which only the L band data sets were suitable for interferometric processing. Multiple repeat passes using ERS-1 for Long Valley were obtained for this site having a maximal time separation of a little more than a year. Interferometric motion measurements using both the SIR-C and ERS-1 data are compared with in situ GPS measurements. Also we compare the results of three pass differential interferometry with Massonet's two pass technique using a DEM to remove the topographic information.