Post-earthquake displacement at June 2000 earthquake ruptures

Directly after the two 6.6 magnitude earthquakes in the south Icelandic seismic zone, fifteen GPS points were measured around ruptures formed during the earthquakes. These GPS benchmarks were installed to follow post-seismic displacement in the affected regions. The impetus for the survey came from the National Energy Authority, who performed the first GPS campaign during summer 2000. The 2001 and 2002 surveys were conducted in cooperation with the Icelandic Meteorological Office and Landsvirkjun. The GPS benchmarks were installed around earthquake ruptures in four areas, and the results of the measurement show very small displacements across the ruptures (Fig. 1). However, the different groups of closely spaced benchmarks do show different horizontal displacements vectors, indicating horizontal displacement between the different monitored ruptures had occurred. This horizontal displacement occurred mostly during the period between 2000 and 2001.

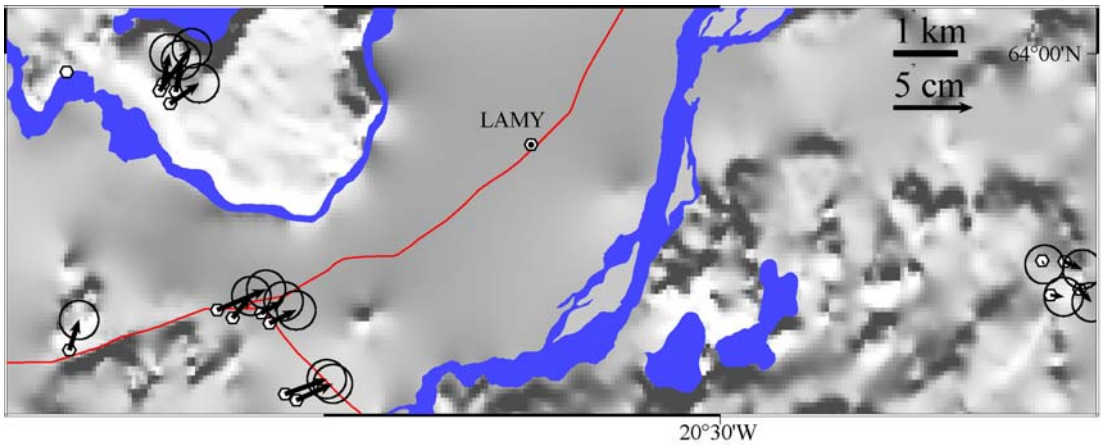

Figure 1. The horizontal displacement vectors for the interval late June 2000 to September 2001 measured by GPS. The displacements are calculated relative to the reference station LAMY in the centre of network. The displacement vectors show only small amounts of deformation across the earthquake ruptures.