

**TITLE:** Ground Deformation Volcano Monitoring in the Lesser Antilles.

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This Project was based on the analysis of G.P.S. (Global Positioning System) data collected from two specific islands in the Lesser Antilles, namely St. Kitts and Nevis, for the purpose of monitoring these volcanic islands for ground deformation around the existing volcanoes. Ground deformation is one of the most useful indicators of the status of the volcano and of any impending volcanic activity. Data was collected via field visits in 2002 and 2006 by researchers from the Seismic Research Unit (SRU), The University of the West Indies (UWI). GPS positioning data was recorded at several existing receiver stations, also known as benchmarks, in both islands. This data was analysed using a software program called Leica® Geo Office which gave the position of each station for which data was collected, along with its associated error.

Any difference in the positions of the stations which were occupied during both 2002 and 2006 was recorded and matched against their respective associated error. Any differences in position that were found to be outside the allowed error range were flagged and recorded for scrutiny. Vector plots of the horizontal and vertical deformation results were made and later checked for validity against known deformation characteristics. These analyses showed that although some benchmarks show some apparent displacement, both their amplitude and 3-dimensional orientations suggest that they are not related to volcano ground deformation, but were probably a result of problems associated with benchmark stability and quality of data collected.