This project, made in the Institute of Geomatics in collaboration with the department of Active Remote Sensing, deals with one of the more used techniques in this department, the differential interferometry SAR (DInSAR) for the measurement of small land deformations. This technique is in constant evolution and one of the main workings in this project has been to collaborate in the improvement of the processing of the interferometric data to obtain from automatic form the estimation of the deformations. Thanks to these improvements, the analysis of the deformations of the terrestrial surface now is faster and more effective form. Other subject that this project includes, and of which I feel certainly proud since it has taken certain importance, is a specific study of the sensitivity of the DInSAR technique to measure the movements in the terrestrial surface. In this study it has been possible to verify that the technique can get to measure the deformations of the buildings due to the thermal expansion.