



A DEM-free approach to Persistent Point Scatterer Interferometry

M. Warren, N. Teferle, A. Sowter and R. Bingley

Institute of Engineering Surveying and Space Geodesy, University of Nottingham, United Kingdom

Current methods using Persistent Point Scatterers (PPS) for the measurement of land deformation require the use of a digital elevation model (DEM) to act as a reference surface for the deformation. DEMs contain errors that are spatially independent and must be removed before any small change in land motion can be identified. Using an ambiguity search process, it is possible to ignore the effect of the DEM, instead replacing it with a reference interferogram that contains the spatially correlated errors of atmospheric and baseline effects. In this paper, we outline this approach with some initial PPS results over the London area. Although the benefits of a DEM-free PPS method are not yet clear, it is anticipated that the replacement of spatially independent noise with correlated noise will allow a more detailed analysis of neighbouring scatterers.