Study of Using SAR/InSAR and DETED Level-2 DEM For Land Subsidence Investigation in Bangkok Area

Dr. Thongthit Chayakula
Chulalongkorn University
Chulalongkorn University Phythai Road, Bangkok, Thailand
Email: Thongthit.C@Chula.Ac.Th

Abstract

Land subsidence is a major problem in many cities around the world. Bangkok is one of the cities, which is effected by the problem of land subsidence. As a result of the land subsidence, there have been numerous problems such as flooding and unviable areas. In order to tackle the problem properly, it is necessary to understand the land subsidence itself as well as the magnitude of it. A technique of SAR and Interferometric SAR or IfSAR is proposed here as an alternative method of investigation of the land subsidence from conventional survey method. Multi-temporal data of ERS1/2 is used to generate interferograms of the displacement areas so the magnitude and direction of the land subsidence can be measured. Along with DTED level 2 DEM, the results of the investigation are expected to be accurate. Since the rates of the land subsidence of the past years are calculated, the estimation of future land subsidence then can be analysed. And in the final part, the accuracy of the land subsidence by SAR/IfSAR technique will be assessed against the existing conventional survey data.