Geophysical Research Abstracts
Vol. 15, EGU2013-12414, 2013
EGU General Assembly 2013

Advantages and Limitations in using Active Remote Sensing Technology for Disaster Damage Assessment

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Following any major natural or man-made disaster, rapid monitoring and assessment of infrastructures and environmental damages are essential for successful rescue and relief operations. While pre- and post-disaster data from passive remote sensing imageries have played a major role in assessing damages on a damage/no damage basis for over four decades, latest advances in active remote sensing technologies such as Radar and Lidar are also becoming quite useful. The goal of this paper is to first explain the basic theories and analytical techniques involved in using active remote sensing data for assessing damages following a major natural disaster. It will then discuss some of the advantages and limitations often faced by researchers and disaster management personnel when using data from these sensors. Finally, it will highlight how data from Lidar and other active sensors were used to assess damages from three recent major disasters.