Remote Sensing for Natural Hazard Mitigation

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Abstract: Hazard mitigation means reducing, eliminating, redirecting, or avoiding the effects of those hazards. Any action taken to reduce or eliminate the long-term risk to human life and property from natural hazards is viewed as a part of hazard mitigation. In the process of hazard mitigation, four steps could be identified, namely, hazard identification, vulnerability analysis, defining a hazard mitigation strategy, and the implementation of hazard mitigation activities and projects. For natural hazard caused by earthquake, typhoon, severe rainfall, remote sensing is found of great value for the mitigation, particularly in the first two steps. Learned from two serious hazards, 921 earthquake, a 7.3Ms earthquake centered at JiJi, Nantou, occurred on Sept. 21, 1999, and Typhoon Morakot, affected Taiwan during August 5 to 8, 2009, intensive mitigation efforts were launched. Among these activities, the island-wide airborne lidar mission conducted by Central Geological Survey is one of the major projects utilizing modern remote sensing technology. Besides, the potential of mapping with unmanned aviation systems (UAS) and airborne InSAR are also under extensive study. Regarding the satellite platform, National Space Organization of NARLabs is devoted to the implementation of FormoSat 5 and design of FormoSat x, the follow-up systems of FormoSat 2. In this presentation, these activities will be briefly introduced.

KEY WORDS: Airborne lidar, Unmanned Aviation Systems, Satellite remote sensing.