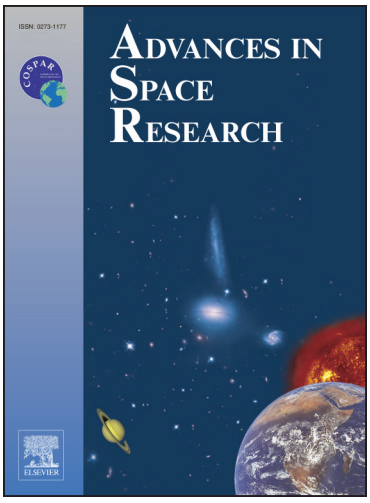

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Determining the precipitable water vapor thresholds under different rainfall strengths in Taiwan

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Abstract

Precipitable Water Vapor (PWV) plays an important role for weather forecasting. It is helpful in evaluating the changes of the weather system via observing the distribution of water vapor. The ability of calculating PWV from Global Positioning System (GPS) signals is useful to understand the special weather phenomenon. In this study, 95 ground-based GPS and rainfall stations in Taiwan were utilized from 2006 to 2012 to analyze the relationship between PWV and rainfall. The PWV data were classified into four classes (no, light, moderate and heavy rainfall), and the vertical gradients of the PWV were obtained and the variations of the PWV were