

## AN ALGORITHM TO ESTIMATE SATELLITE RAINFALL RATES

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The Hydro-Estimator algorithm was implemented over Puerto Rico and it was found that some warm clouds were not detected by this algorithm. Since the warm clouds occur frequently over a tropical region we decided to derive a new rainfall rate retrieval algorithm that takes into account the estimation of rainfall rate over warm and cold clouds. The proposed algorithm has two major components one for determining rainy cloud pixels and the second component for estimating the rainfall rate. The projection algorithm was used to detect cloud rainy pixels and the time a spatial lags model was used to estimate the rainfall rate.

Results show that the new algorithm over warm clouds exhibits a larger probability of detection and smaller false alarm rate than the Hydro-Estimator algorithm. The general performance of the new algorithm exhibits a slight improvement over the Hydro-Estimator. Thus, an additional effort is required to implement the cloud rainfall motion vector that may derive a significant improvement.