



## **Weather regimes with greatest errors in rainfall estimation from TRMM**

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There are now more than 9 years of rainfall estimates from the Tropical Rain Measuring Mission (TRMM) between 36 S and 36 N. We are in a position to compare a number of independent estimates and to ask the important question: What meteorological regimes, or what specific types of precipitation feature, are likely to have the largest absolute errors of estimation? We answer this question by comparing these independent estimates and evaluating the specific properties of the weather event leading to the largest discrepancies. For example, Nesbitt et al. (2004) obtained the clear result that large convective systems have rainfall overestimated by the passive microwave algorithm with respect to the radar algorithm by about 45 percent over both land and ocean. In this paper, we use the University of Utah's Precipitation Feature Database to search for those specific weather systems that account for the largest discrepancies, to determine their physical properties, and their environmental properties. We can do this by region, and by season, to give a more specific answer to the question. It is understood that the mere presence of a large discrepancy between methodologies does not answer the question of which one is correct, but this would appear to be a useful step toward identifying reasons for the larger errors.