Spacebased Observations of Ocean Influence of continental Precipitation through Moisture Advection

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The computation of integrated water transport (IWT) in the atmosphere requires the vertical profiles of wind vector and specific humidity. These profiles are, traditionally, measured by rawindsondes. Over the ocean, where rawinsodes are sparse, spacebased scatterometers can measure surface wind vectors (SWV) and the microwave radiometers can measure the integrated water vapor (IWV). A method has been developed and validated to estimate IWT from the product of SWV and IWV.

Global IWT over ocean at 50 km resolution has been mapped with SWV measured by QuikSCAT and IWV by the Tropical Rain Measuring Mission Microwave Radiometer (TMI). The lag correlation and linear regression between precipitation over land and IWT b and sea surface temperature in the surrounding oceans were examined in major monsoon regions (e.g. China and Brazil). The influence of ocean on the continental rainfall, in seasonal and intraseasonal scales were examined.