Rain Effects on Scatterometer Data: A Review

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It is well known that rain affects scatterometer data in various ways depending on wind speed, incidence angle, microwave frequency and polarization, rain rate and rain type. The physical mechanisms by which rain affects scatterometer data include the attenuation of the scatterometer signal, backscatter from the rain, and rain roughening of the sea surface. Uncertainty exists in the physical modeling of these components. We will summarize what is known to date by showing examples of rain effects on ERS-2, NSCAT, QuikSCAT and ASCAT data and highlighting important studies and reports. Various correction techniques have been developed which will be summarized and the outcome of each demonstrated. This talk will serve as a review of what is currently known, which we hope will facilitate discussion and planning for the design of future scatterometers.