



Impact of rain in modifying wave height in a coupled wave – climate model

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Model physics in the present state-of-art wave model (WAM) considers only momentum exchange attributed from wind stress acting at the air-sea interface. External atmospheric forcing such as rain though sporadic in nature also imparts momentum exchange at water surface. Rain drops striking the sea surface are known to change the prevailing sea-state owing to momentum exchange. To investigate the effect of rain on ocean waves, we have incorporated the parameterization of rain induced sea surface roughness in the state of art wave model (WAM) and then coupled with a regional climate model (RCA-HIRLAM). It has been observed from the study that there is a significant change in wave height when introduced the parameterization of rain induced sea surface roughness in to the wave model. Interestingly rain does both wave growth and wave decay, the so called dual effect of rain is also observed.