National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Raindrop Size Distribution Analysis in Active vs. Break Spells of Summer Monsoon from 2018 to 2021 over Rourkela
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Venue	: ER-303 Class Room
Date and Time	: 26 Sep 2024 (04:40 PM)
Abstract	: This study analyzed Raindrop Size Distributions (RSD) of summer monsoon rainfall over eastern India from 2018 to 2021. Raindrops were divided into small, medium-sized drops, and large-sized drops. The findings reveal that all-sized drops were more prevalent during active spells than break spells. The Probability Distribution Function (PDF) of rain rate (R) and liquid water content (log 10 W), mass-weighted mean diameter (D m), and Normalized intercept parameter (log 10 N w) were analyzed. PDF of R and log 10 W showed a higher frequency during break spells but higher values during active spells. Conversely, the D m and the log 10 N w exhibited higher frequency and values during active spells. Convective precipitation was higher than stratiform precipitation in both active and break spells. Distinct differences between active and break spells were observed in the radar reflectivity-rainfall rate (Z–R) relation and the shape and slope (μ–Λ) relation. The presence of higher concentrations of raindrops of all sizes and the dominance of convective precipitation during active spells can be attributed to the increased Convective Available Potential Energy (CAPE) and greater liquid water content during active spells.