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(Virtual Talk)
Passive microwave (PMW) brightness temperatures are often used to diagnose tropical cyclone (TC) convective structures within clouds when available, but revisit times of PMW low-Earth orbits are insufficient for operational needs. This study uses Bayesian Deep Learning and quantified uncertainty decomposition to produce estimates of synthetic PMW brightness temperatures, aleatoric uncertainty, and epistemic uncertainty from GOES-16 ABI infrared brightness temperatures. Current results indicate that uncertainty decomposition shows promise not only for visualizing deep convective structures within TCs, but also for enhancing low clouds that may be thinly obscured. Additionally, uncertainty decomposition provides additional benefits for further product improvement and potential downstream applications.
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