

## Dynamic Land Surface Emissivity for Global Precipitation Retrieval



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 In passive microwave precipitation retrieval, high land surface emissivity makes hydrometeor absorption signal difficult to distinguish – basically limited to scattering/precipitation rate relationships



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FIG. 9. Ratio of retrieval false alarms (not detected by the active radar) to all observations for the 1-yr period September 2015–August 2016. (bottom) Results using the GPROF classification scheme; (top three rows) results using the hybrid retrieval with several values of normalized error parameter cutoff defining locations for the Bayesian retrieval.

Understanding the Surface Improves Retrievals

False alarms decrease significantly using the hybrid technique along with dynamic surface constraints.

Probability of false detection minimization along with maximized POD occurs at 0.3 on average where false alarms are decreased by half, but this may vary by surface and/or environmental conditions.

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We can use the tools available from GPM to investigate questions and challenges



