Effects of Constrained Entrainment Profiles on DYNAMO Hindcasts

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Hindcast experiments of the DYNAMO period with different treatments of deep convection are examined with respect to the moist static energy budget at different stages of the MJO lifecycle. Experiments are conducted with the NCAR CAM5 GCM and initialized with ECMWF operational analysis. The entrainment profile in the deep convection scheme is modified to investigate how the shape of the entrainment profile affects model performance. The concept of gross moist stability and its variability on intraseasonal timescales in this analysis is central in order to establish the extent to which moisture mode theory is relevant to the dynamics of the MJO.