

# POST Science and Data Workshop

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University of Utah  
Department of Meteorology

Photo by Djamel Khelif

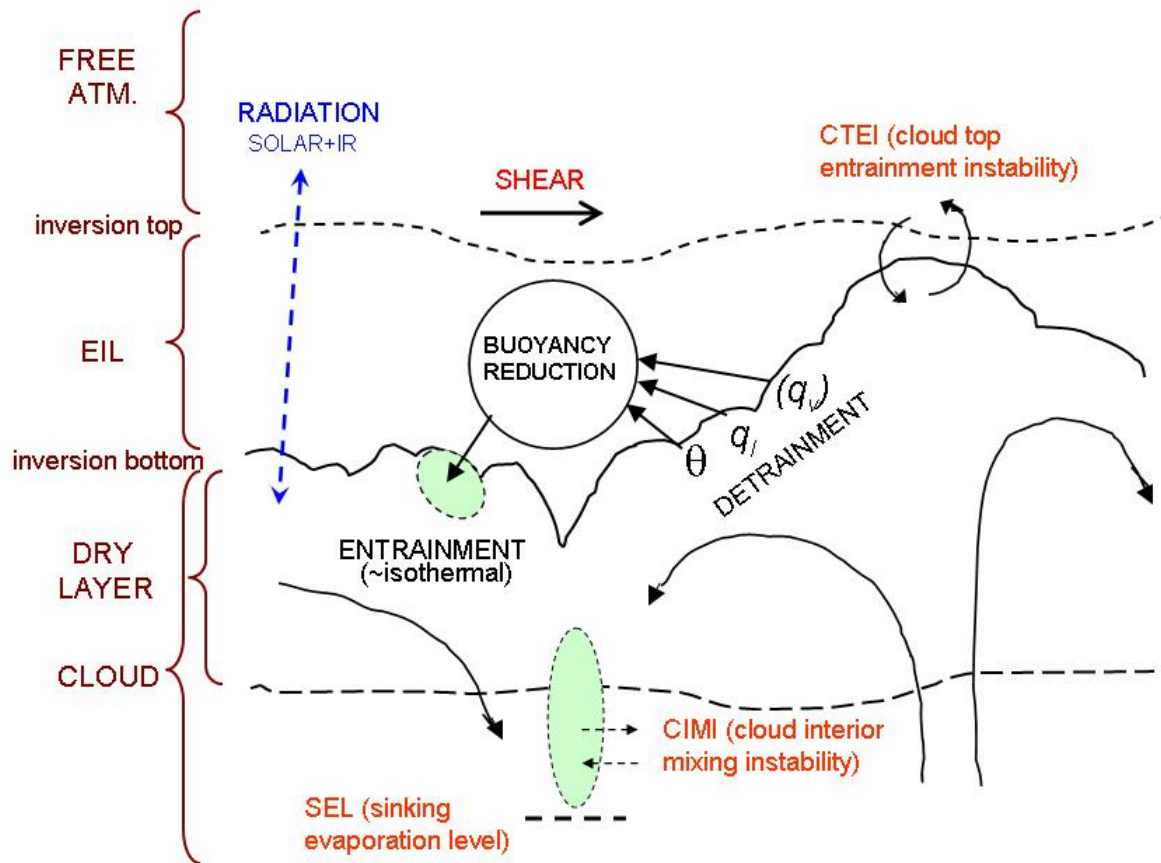
## Scientific Issues and Hypotheses

***Hypothesis H1: The turbulent kinetic energy originating from buoyant thermals in Sc is consumed by the entrainment process resulting in the cloud-free, moist, and cool EIL that separates Sc cloud top from the free atmosphere and that forms the environment from which air is ultimately entrained into cloud top.***

***Hypothesis H2: Knowledge of the details of cloudtop interface behavior (local horizontal variability, EIL geometry and evolution, microphysics, drizzle, shear, entrainment-parcel thermodynamics and physical description, and vertical distribution of ir cooling) is necessary to yield acceptable estimates of  $w_e$ ; whereas, using basic STBL parameters including surface heat and moisture fluxes, cloudtop jumps, and buoyancy fluxes to estimate  $w_e$  is insufficient.***

***Hypothesis H3: Evaporation of LWC by entrained air in Sc contributes to buoyancy production that helps drive the larger cellular convection and that provides positive feedback for entrainment.***

***Hypothesis H4: Modeling results covering relevant spatial scales from microphysics to larger-scale dynamics compare favorably with POST observations of STBL behavior including shear, cloud-layer structure, EIL behavior, and entrainment rates.***



## POST GOALS

- ☆ High Spatial Resolution Aircraft Measurements of Unbroken Sc Fields
- ☆ Construct Data Archive
- ☆ Conduct Collaborative Data Analysis Effort
- ☆ Test Proposed Hypotheses
- ☆ Publish!

## WORKSHOP GOALS

- **Data Status**
- **Analysis Plans**
- **VOCALS Update**
- **Future Plans**