Percent change relative to L32
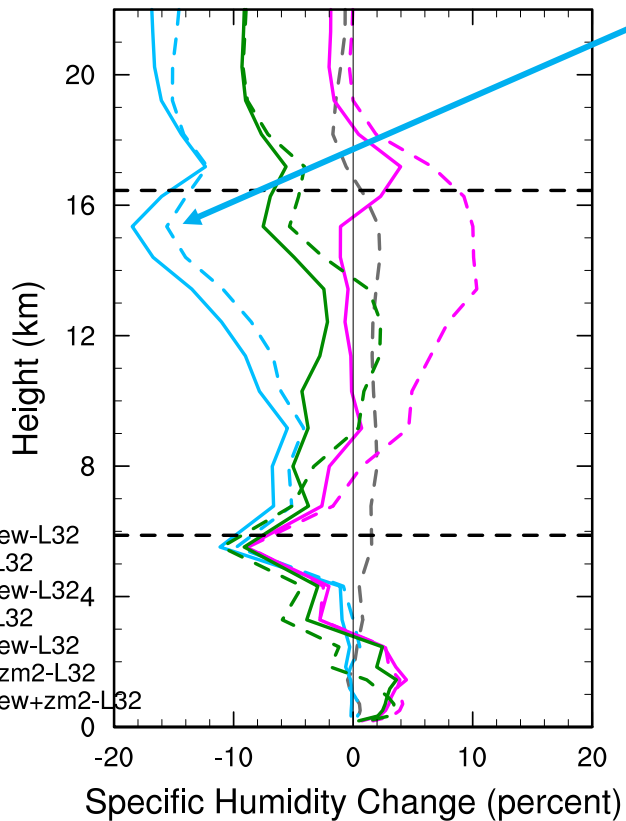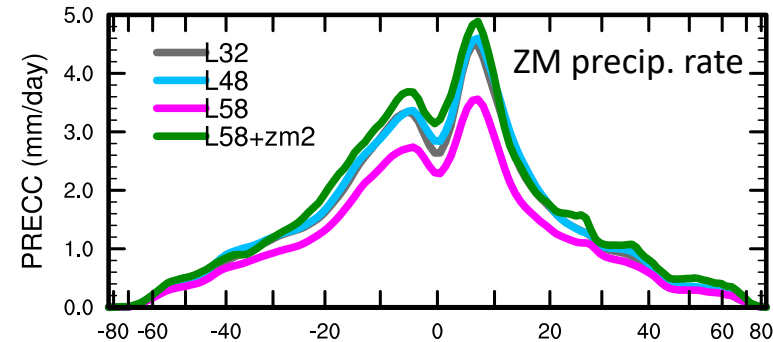(avg. over +/-15° lat)
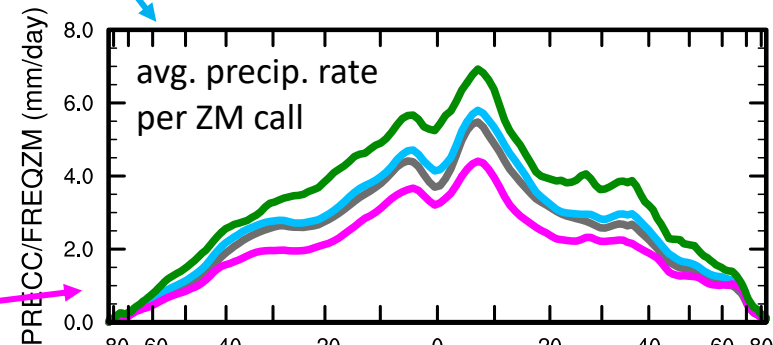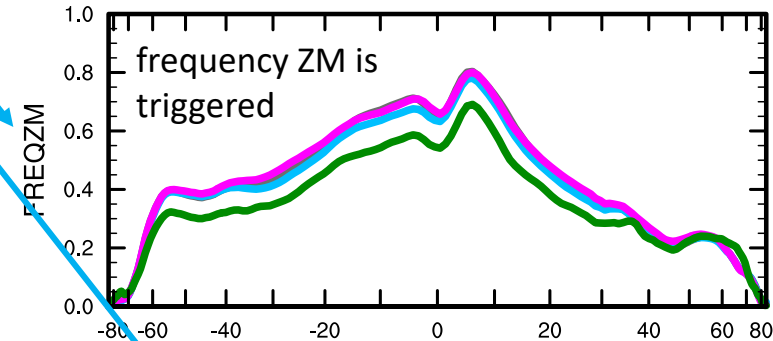
Plot axes: Height (km) vs Specific Humidity Change (percent)

Legend:
- L32new-L32
- L48-L32
- L48new-L32
- L58-L32
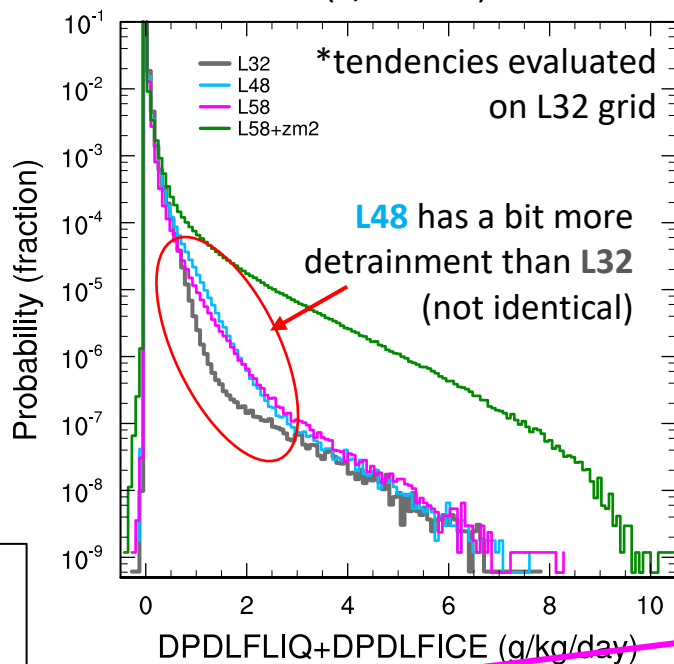- L58new-L32
- L58+zm2-L32
- L58new+zm2-L32

L48 grid
- increased vert. res., but still uses **L32** BL
- **largest drying in UTLS**
- ZM behaves very similar to **L32**
  - frequency ZM triggered
  - avg. precip rate. per ZM call
  - ~similar detrainment rates

PDF of Detrained Condensates
(+/-15° lat)

Plot axes: Probability (fraction) vs DPDLFLIQ+DPDLFICE (g/kg/day)

Legend:
- L32
- L48
- L58
- L58+zm2

*tendencies evaluated on L32 grid

L48 has a bit more detrainment than **L32** (not identical)

Climatological Zonal Means
(10 year ANN)

Top panel: ZM precip. rate — PRECC (mm/day) vs Latitude
Legend: L32, L48, L58, L58+zm2

Middle panel: frequency ZM is triggered — FREQZM vs Latitude

Bottom panel: avg. precip. rate per ZM call — PRECC/FREQZM (mm/day) vs Latitude

L58 grid
- **L48** but w/ 10 additional layers in BL
- ZM is weaker than **L48**
  - avg. precip rate. per ZM call
  - **ZM2** developed to eliminate BL sens.

Dry bias not due to sensitivity of ZM to vert. res; ZM is mostly sensitive to BL res!
(*L58* counteracts drying from incr. free-tropo/lower-strat resolution in *L48*. Why?)