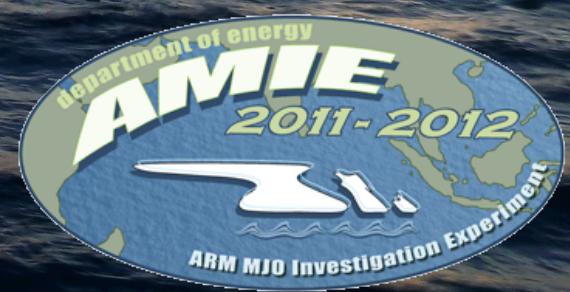


Tropospheric Humidification by Anvil Clouds over the Indian Ocean



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April 19, 2012

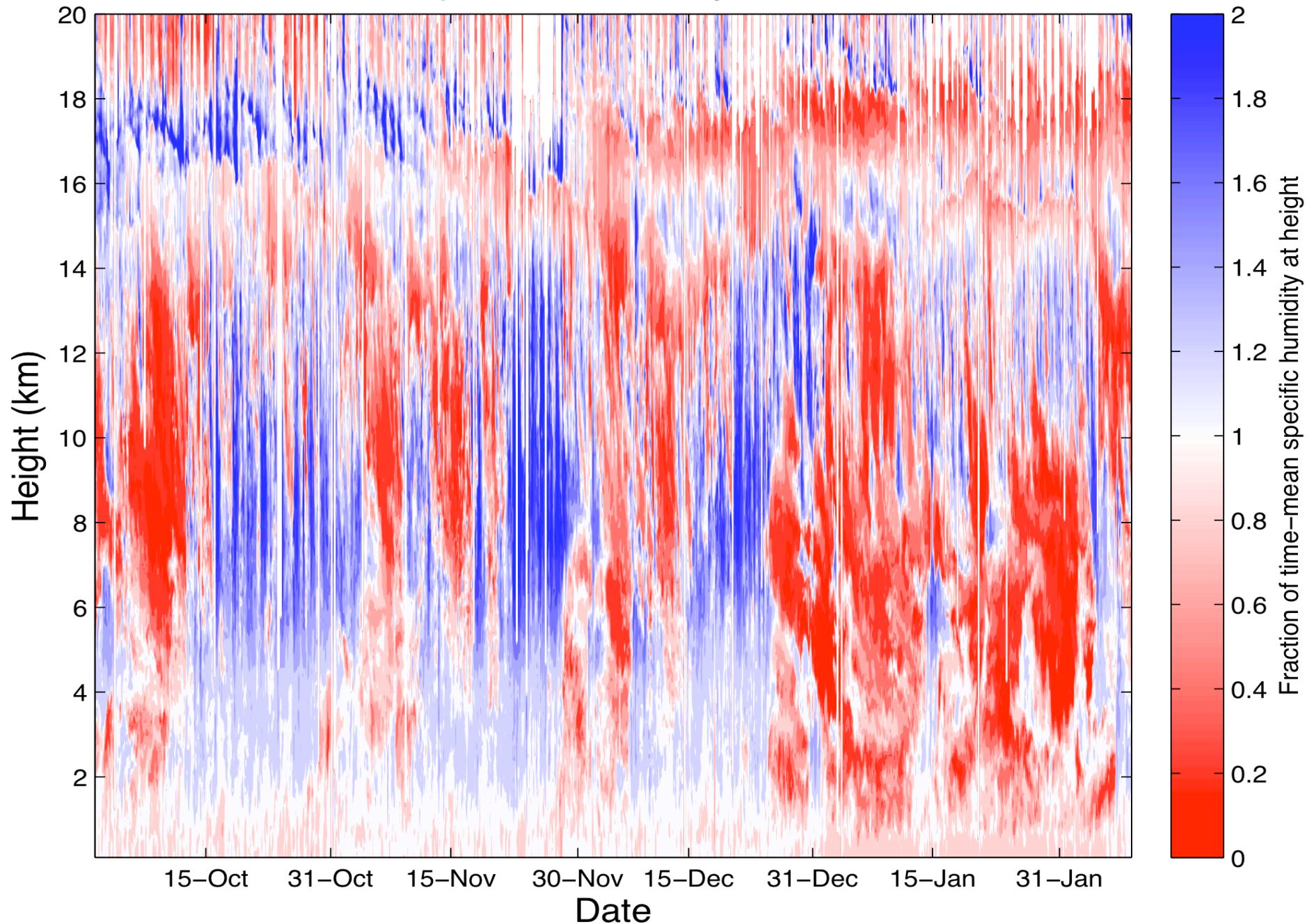


30th Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL

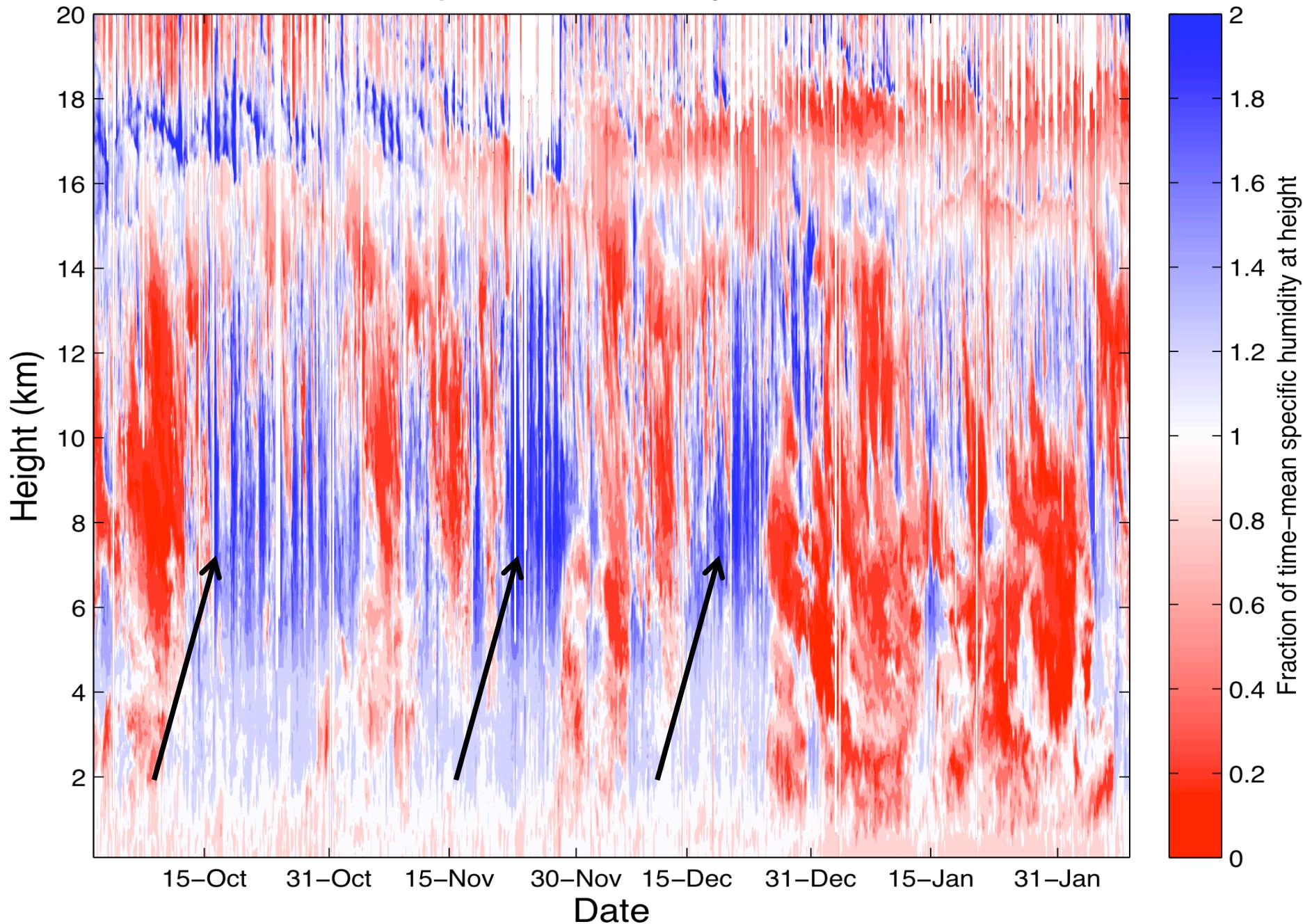




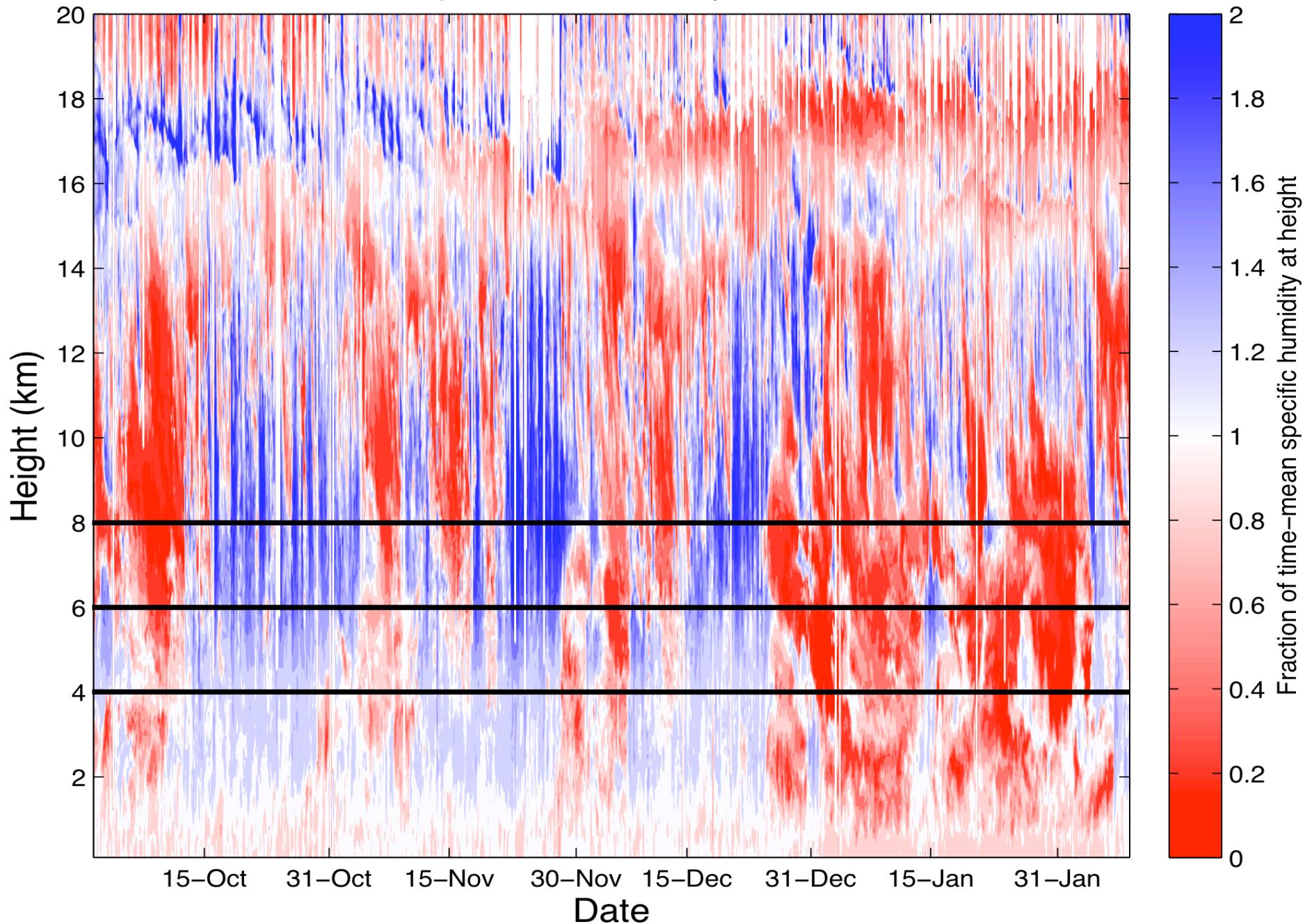
Gan: Specific Humidity Deviation



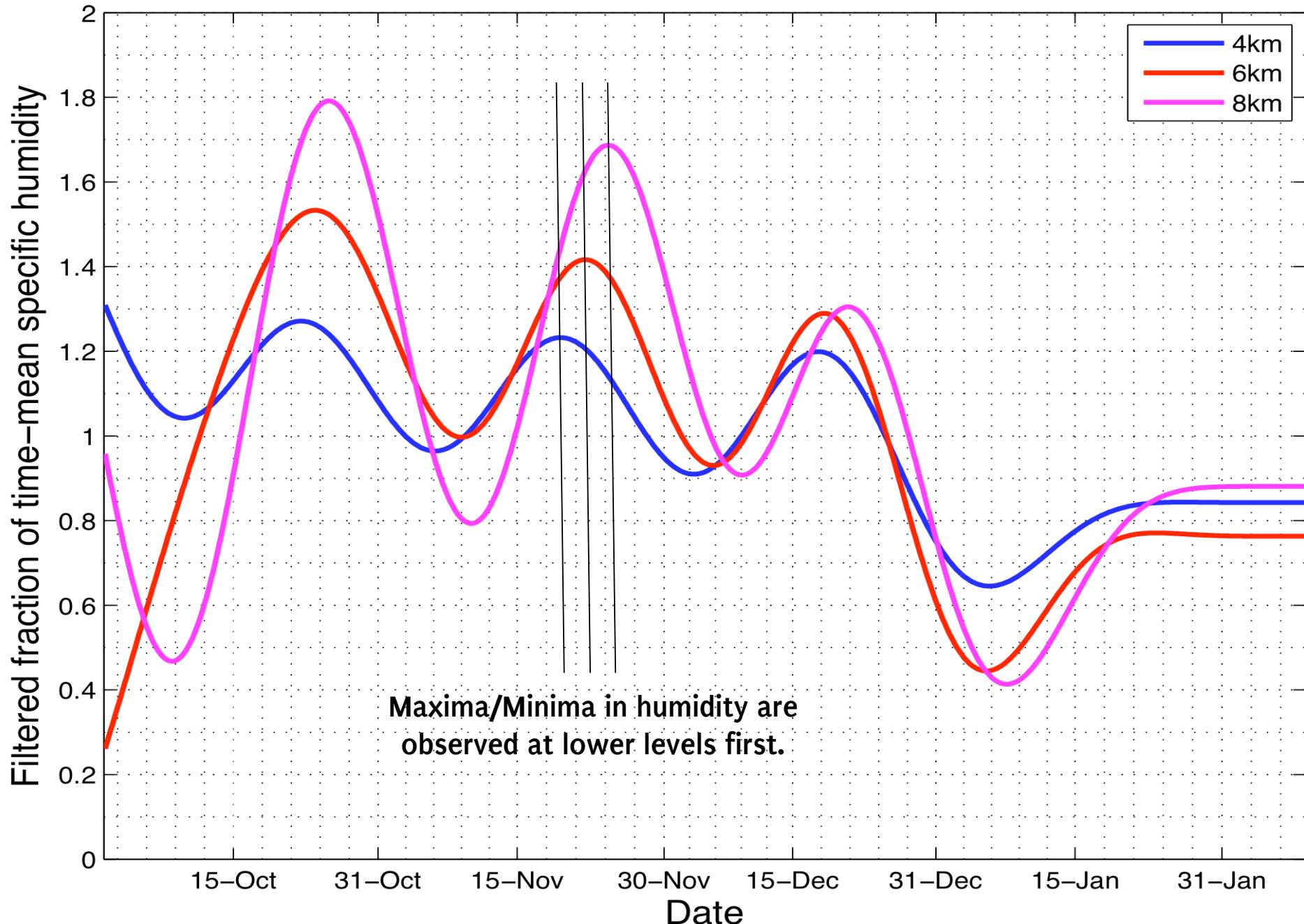
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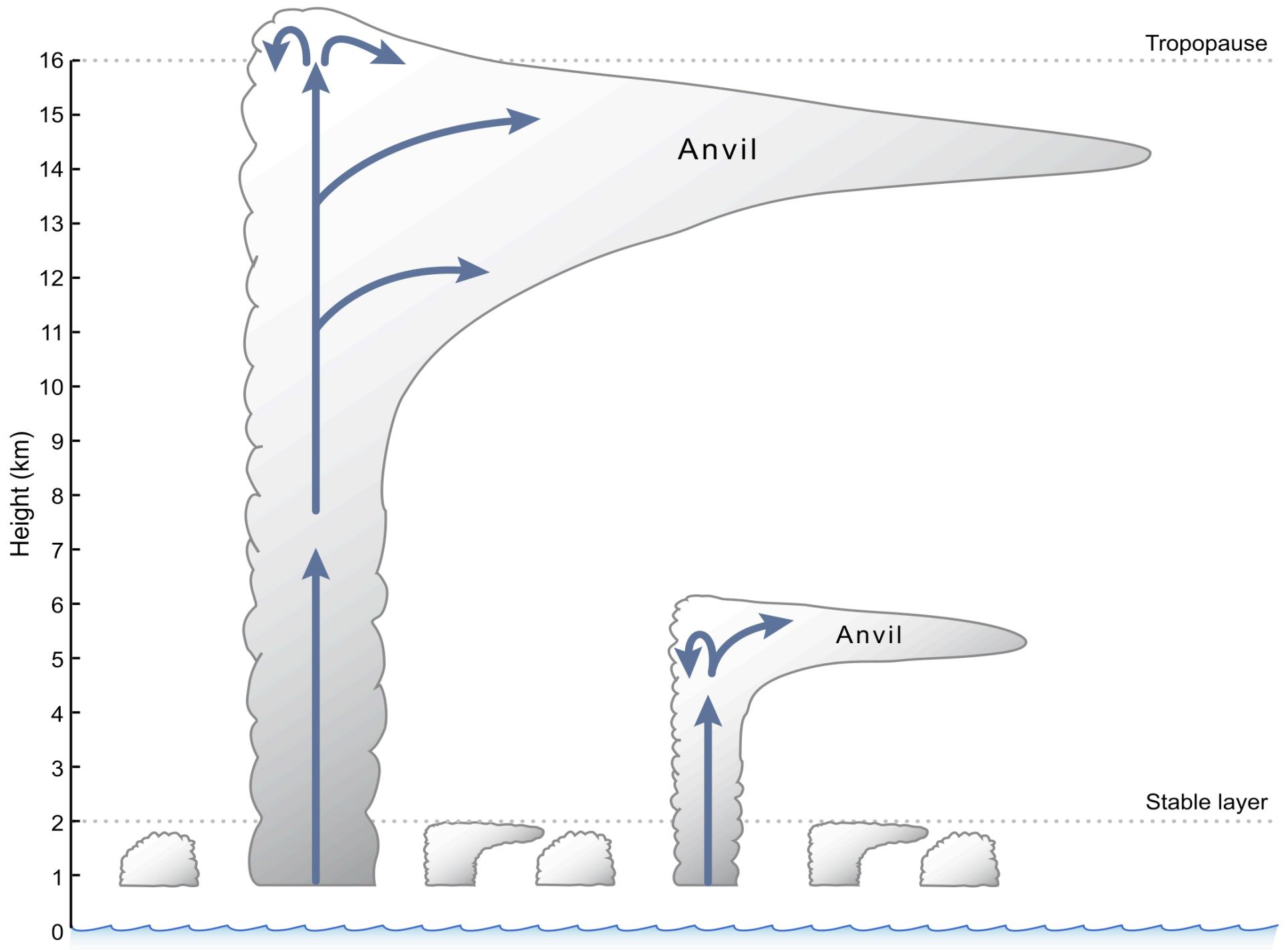


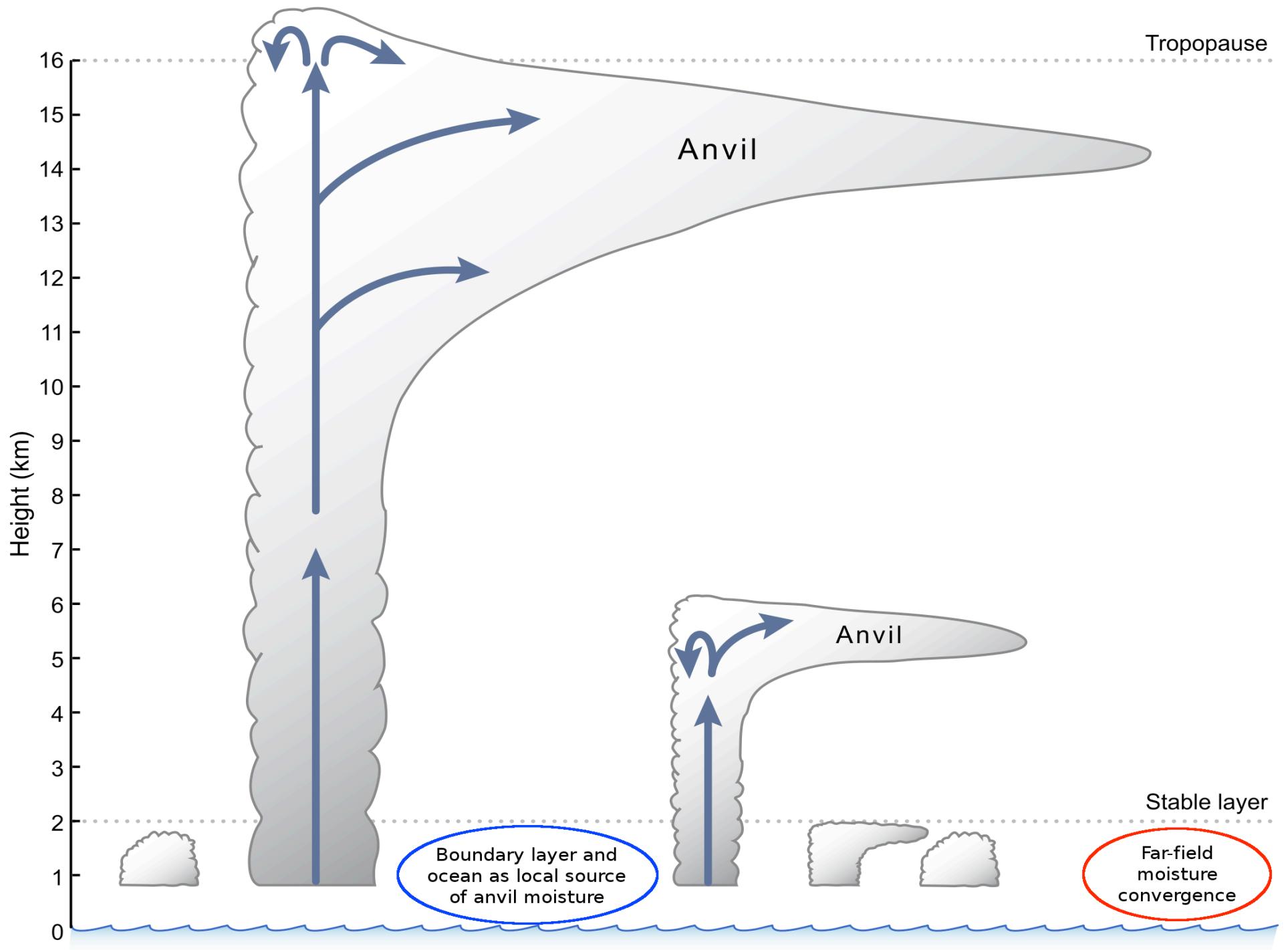
Gan: Specific Humidity Deviation

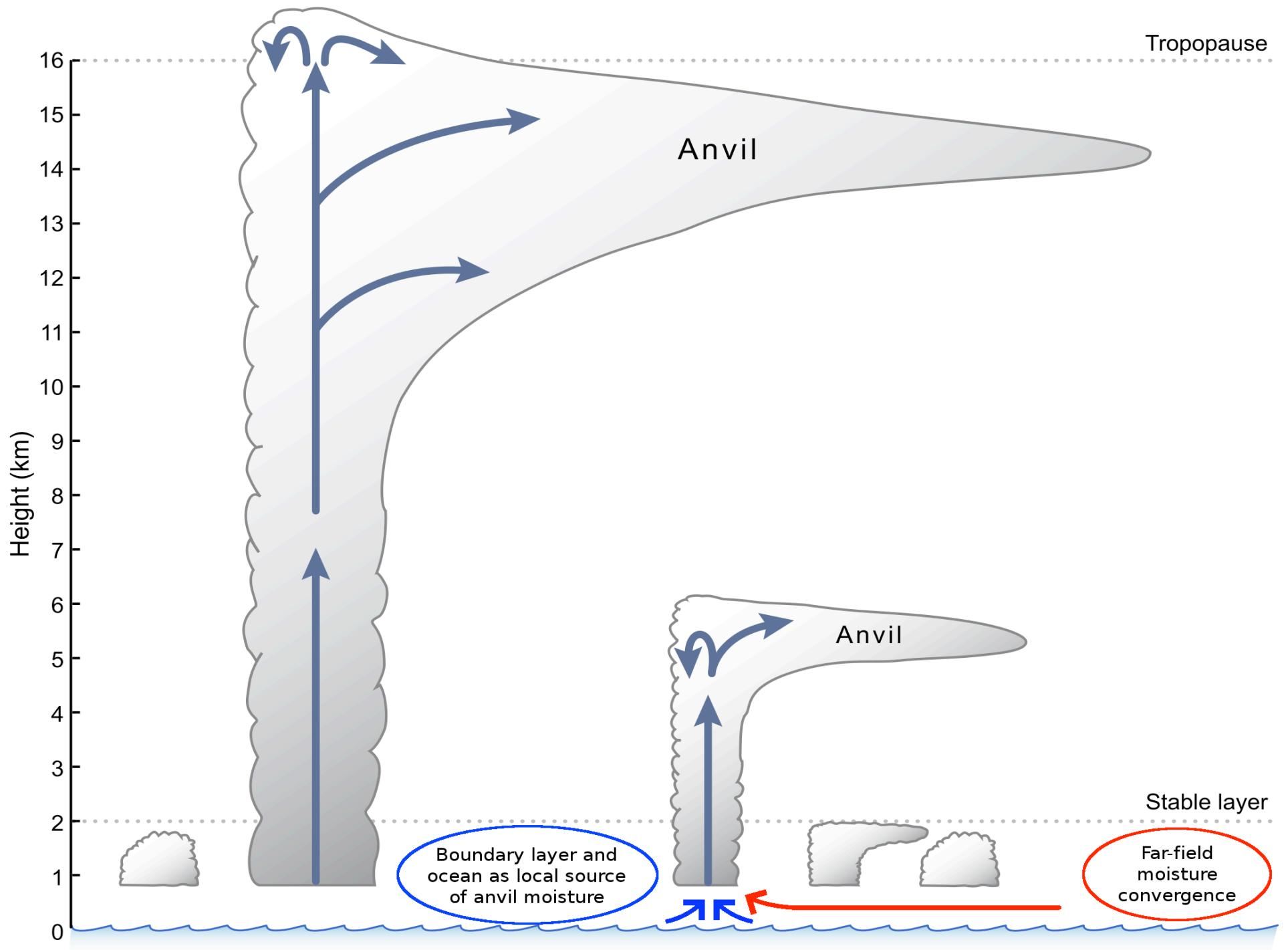


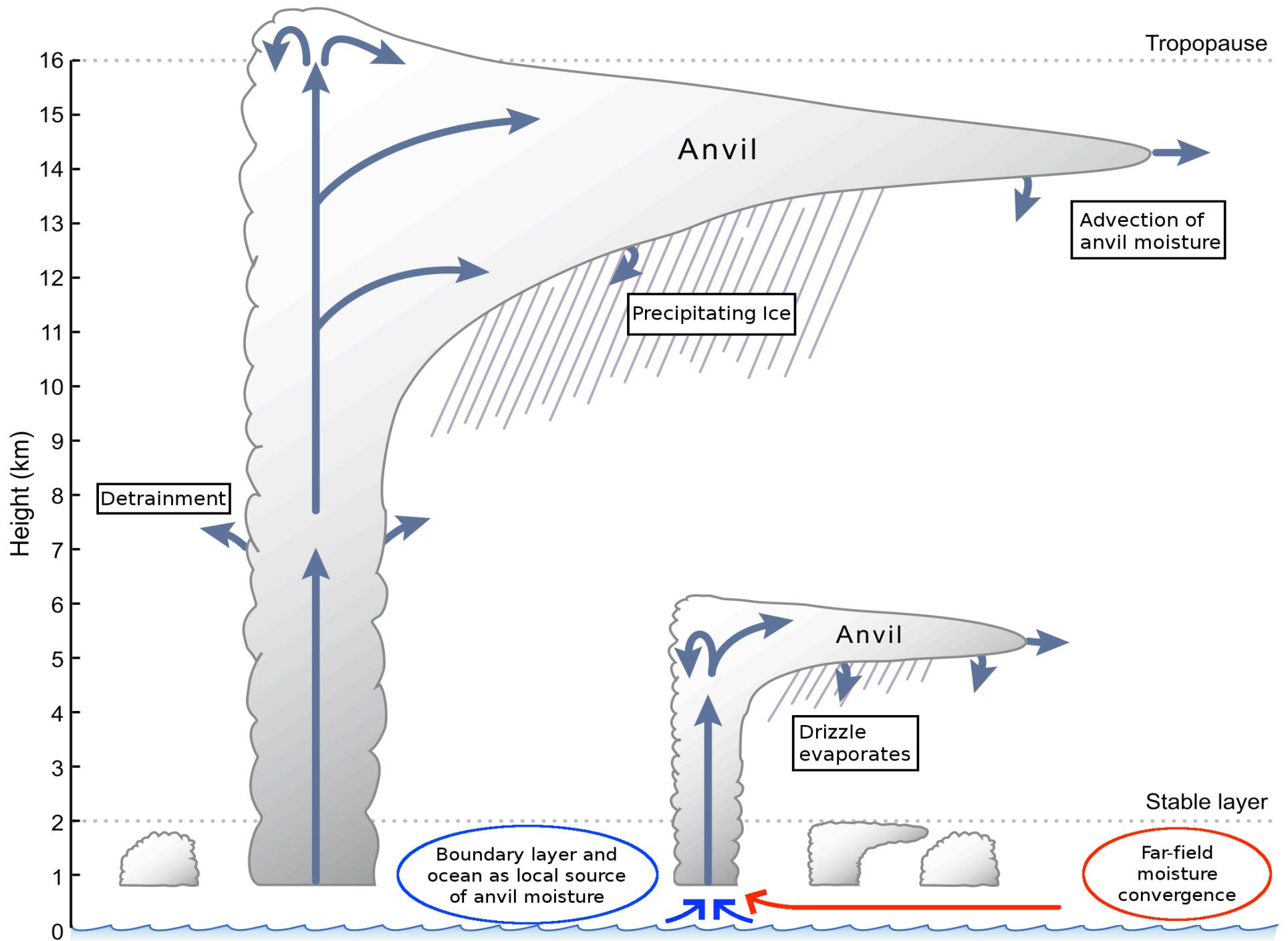
Low-pass Filtered Specific Humidity Deviation: Gan

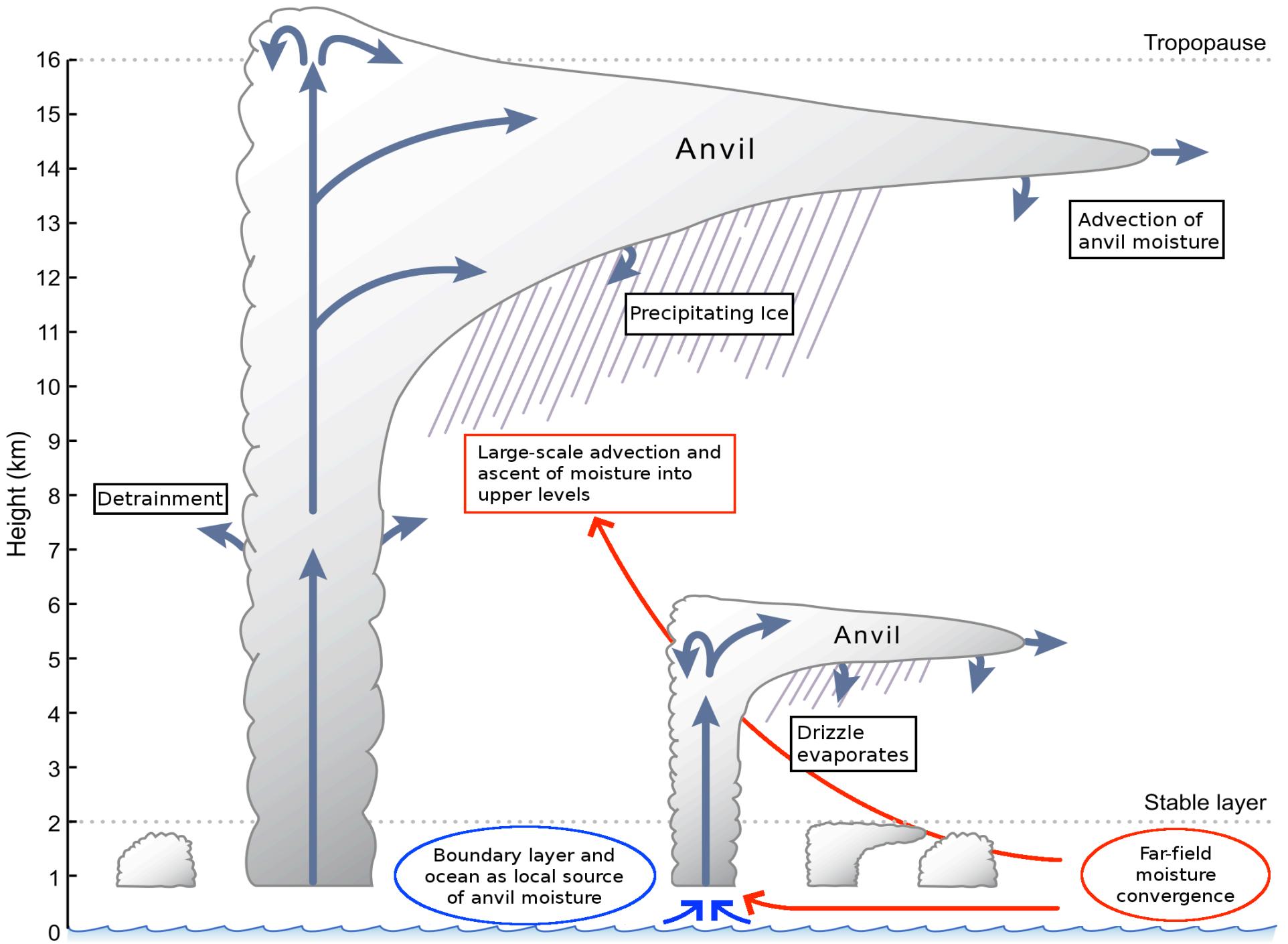




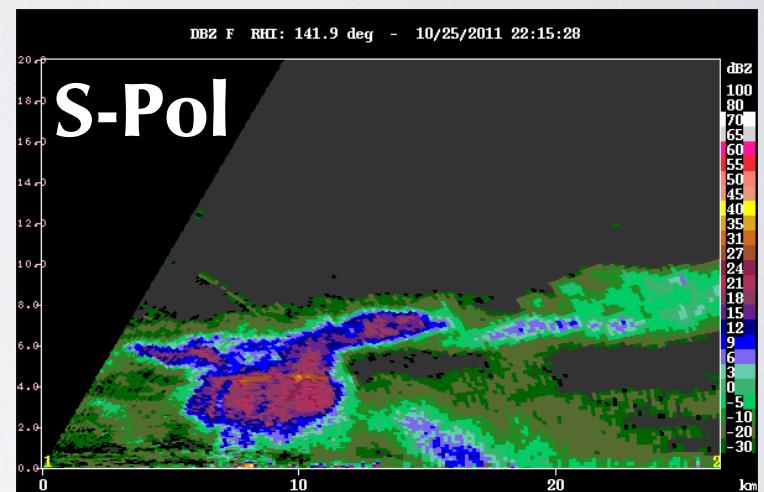
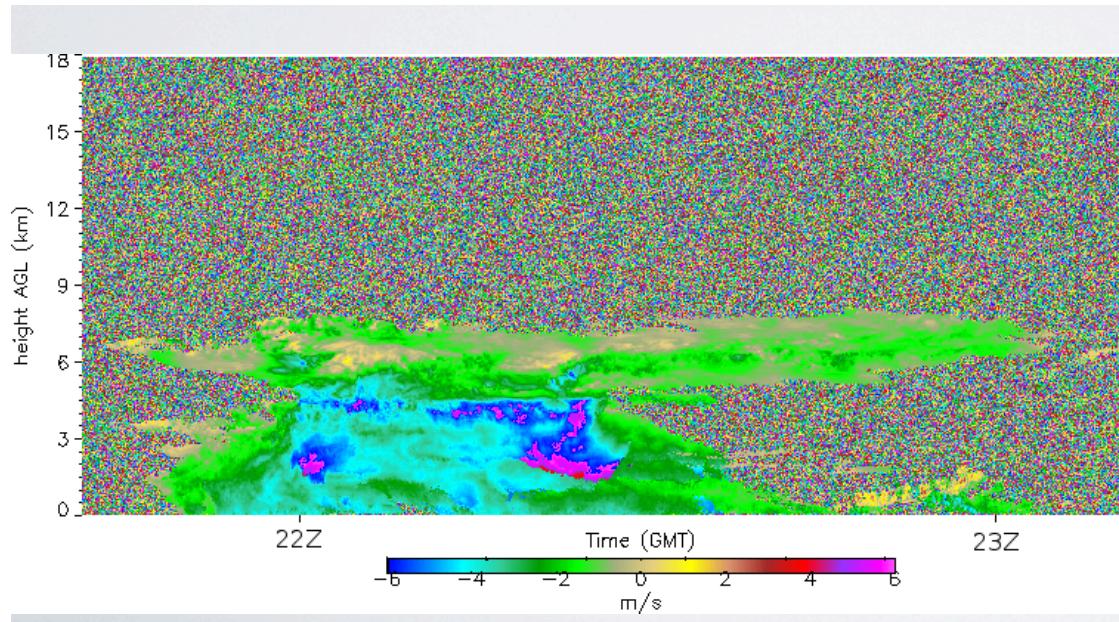
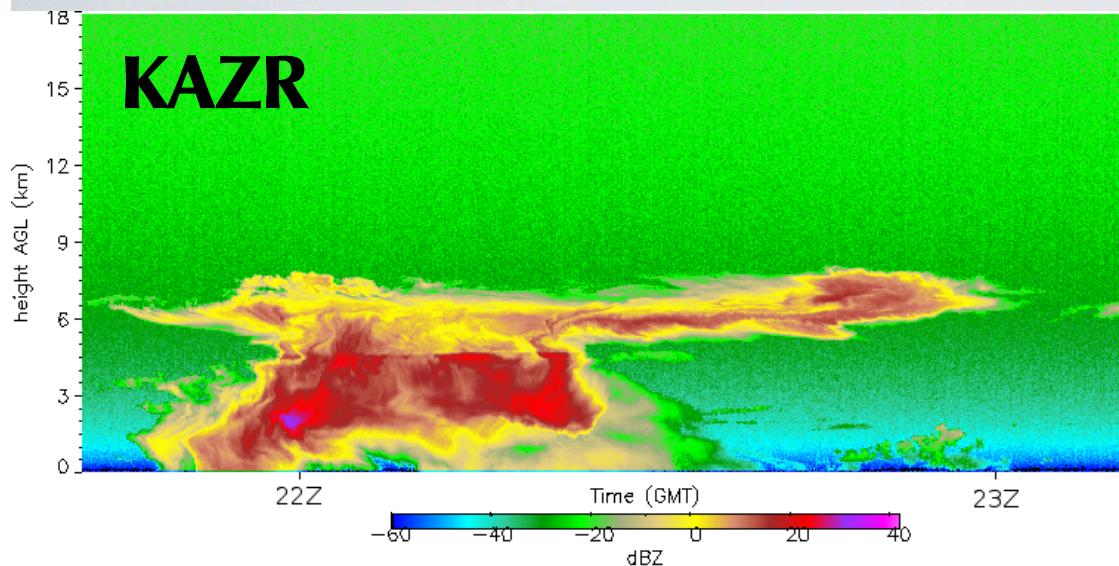




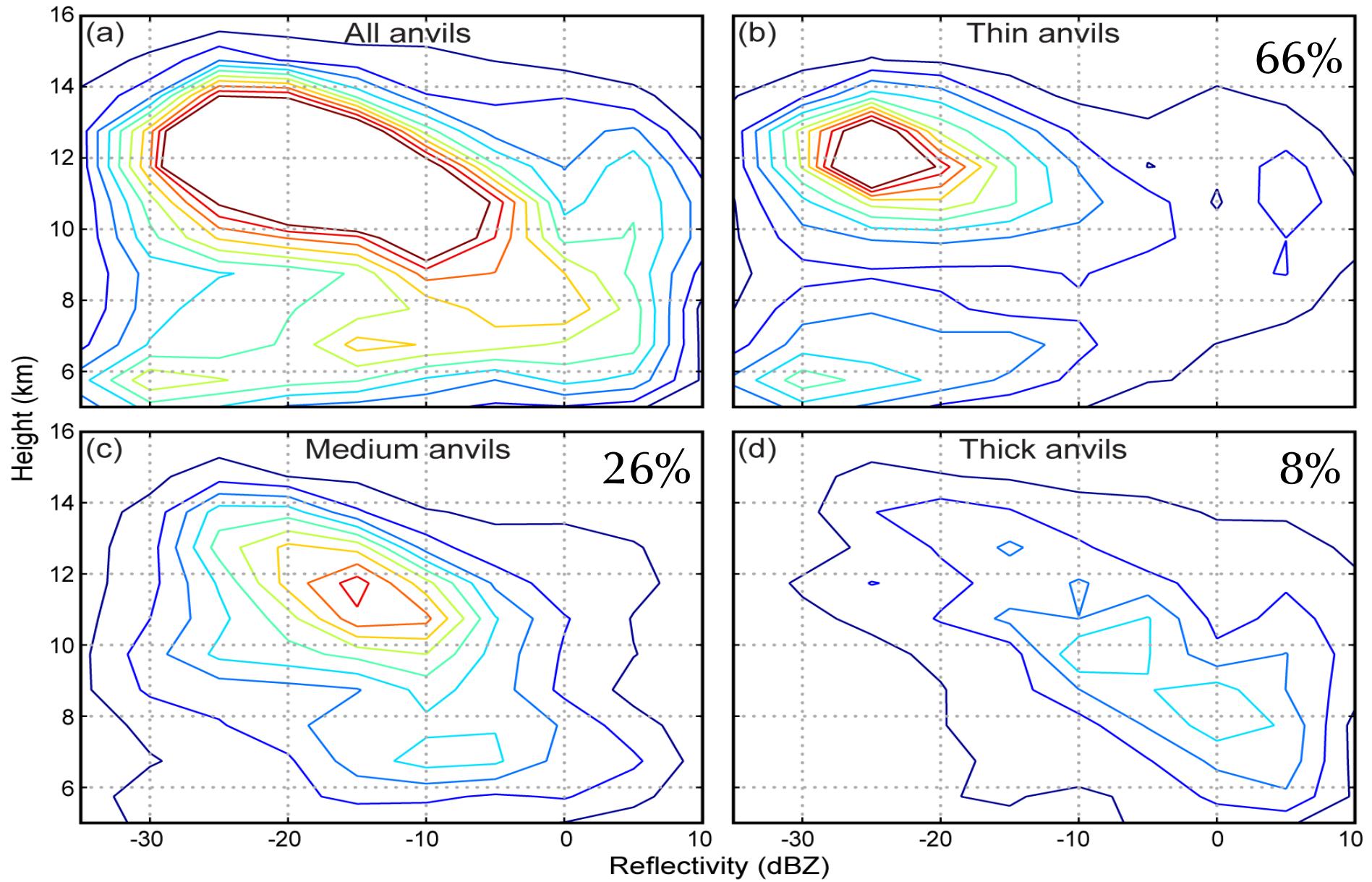




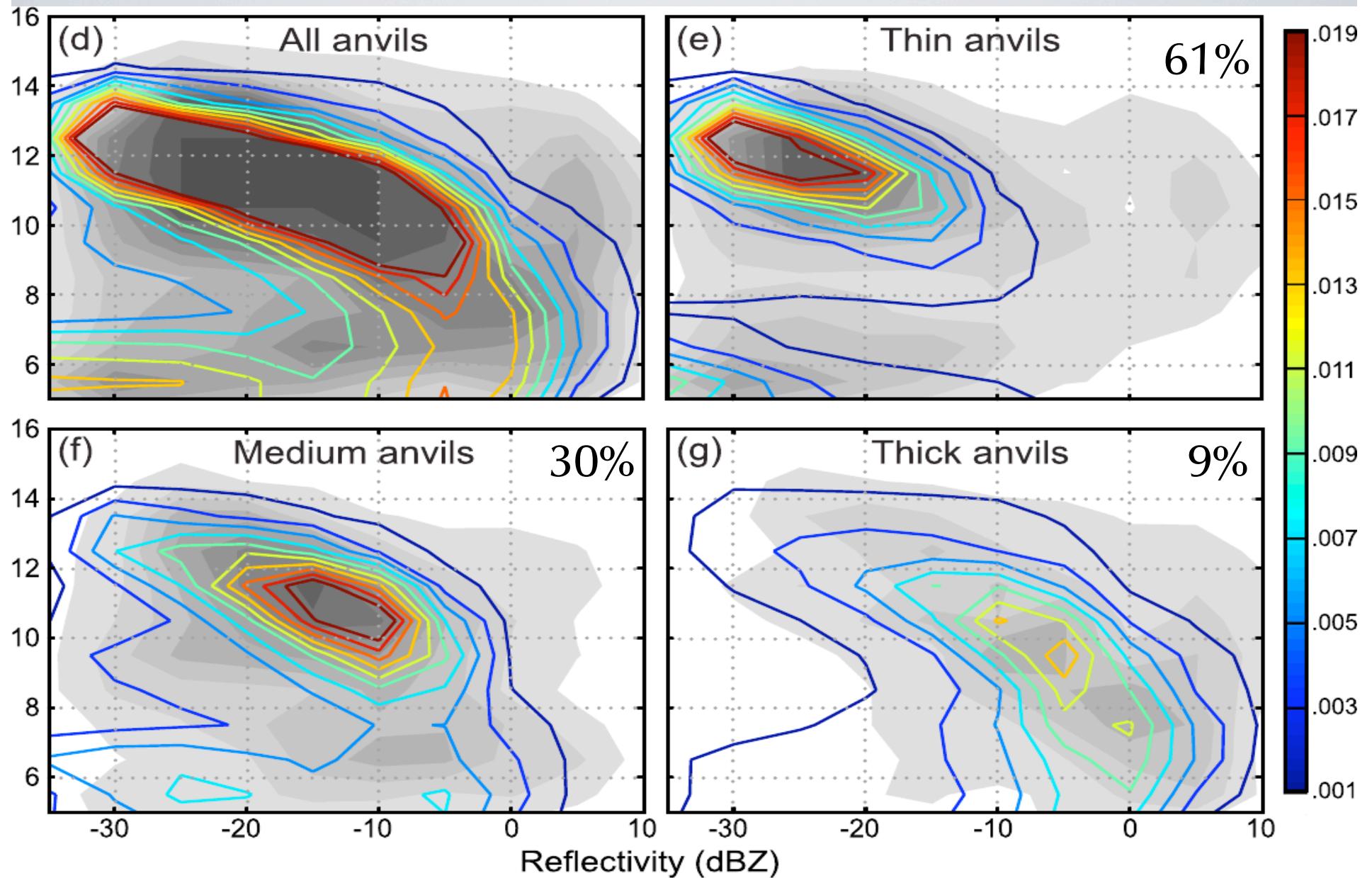
Radar observations of anvils



West African Anvils (Powell et al 2012)

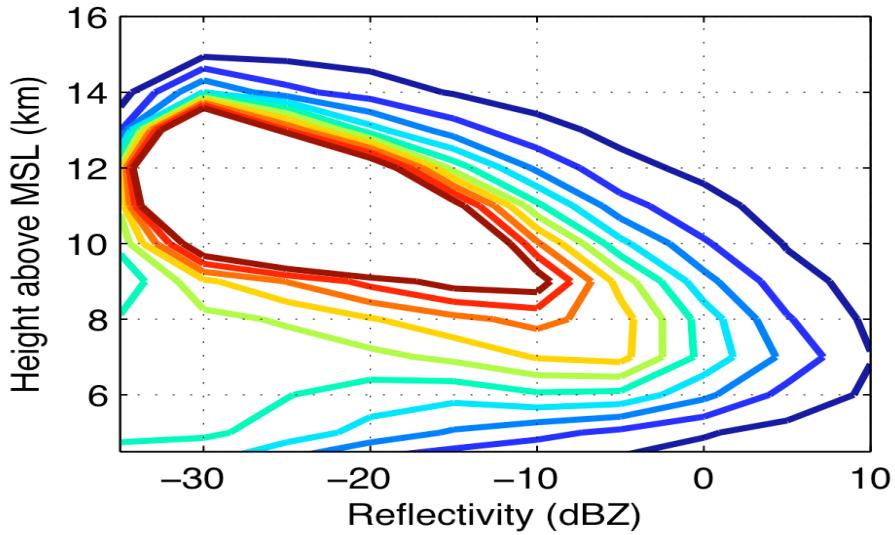


Modeling West African Anvils

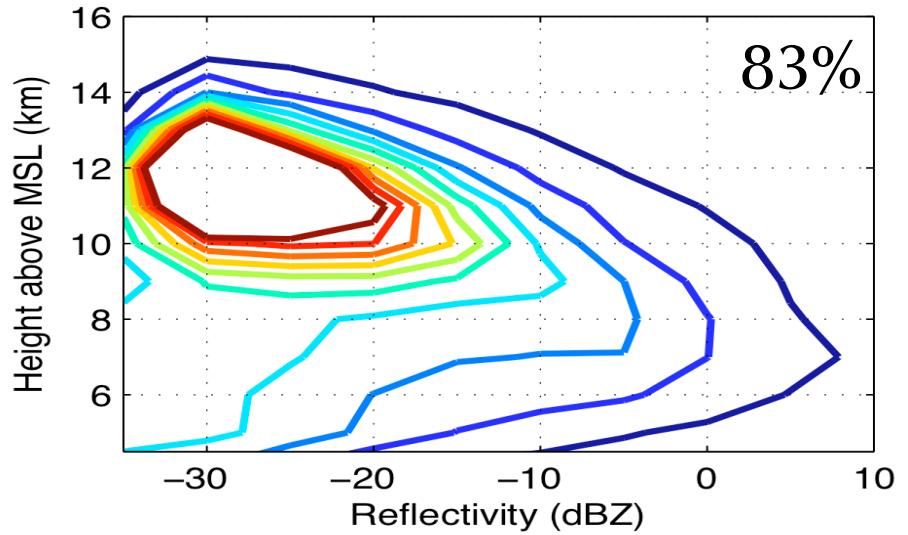


Indian Ocean Anvils

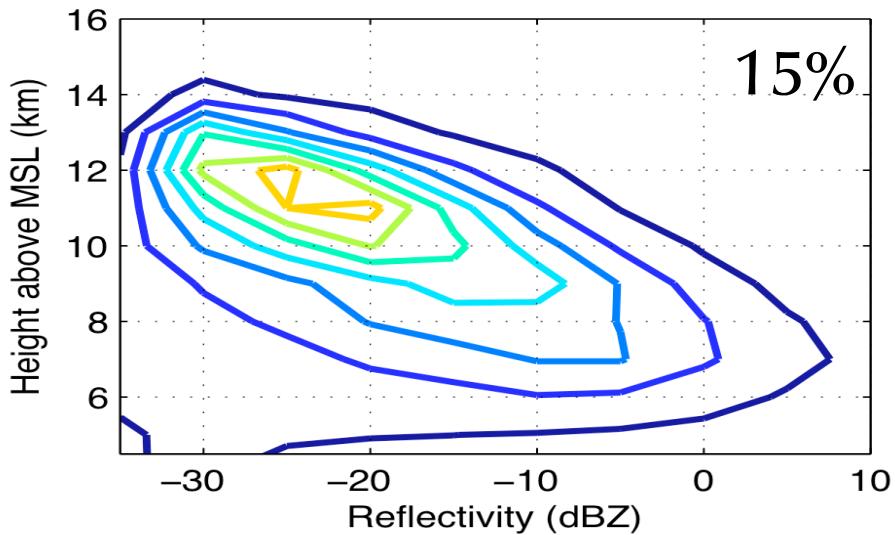
All Anvils



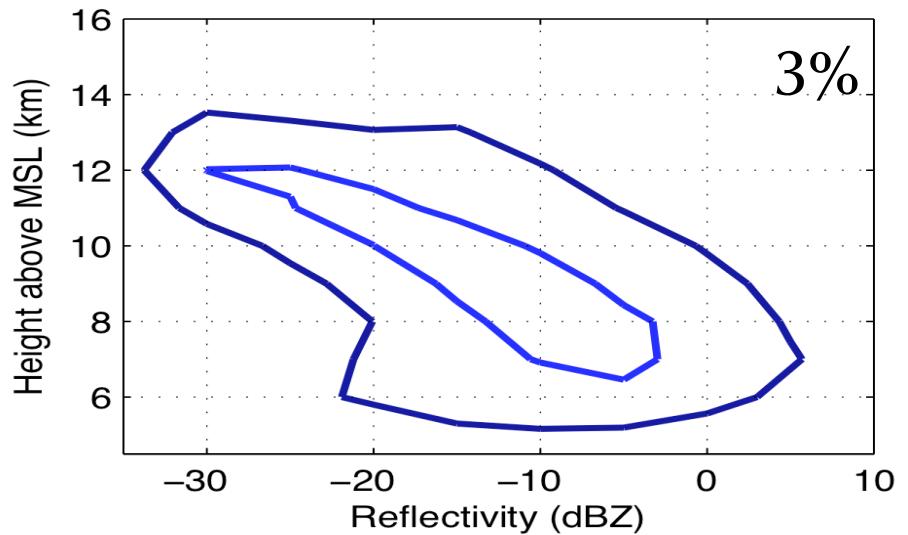
Thin Anvils



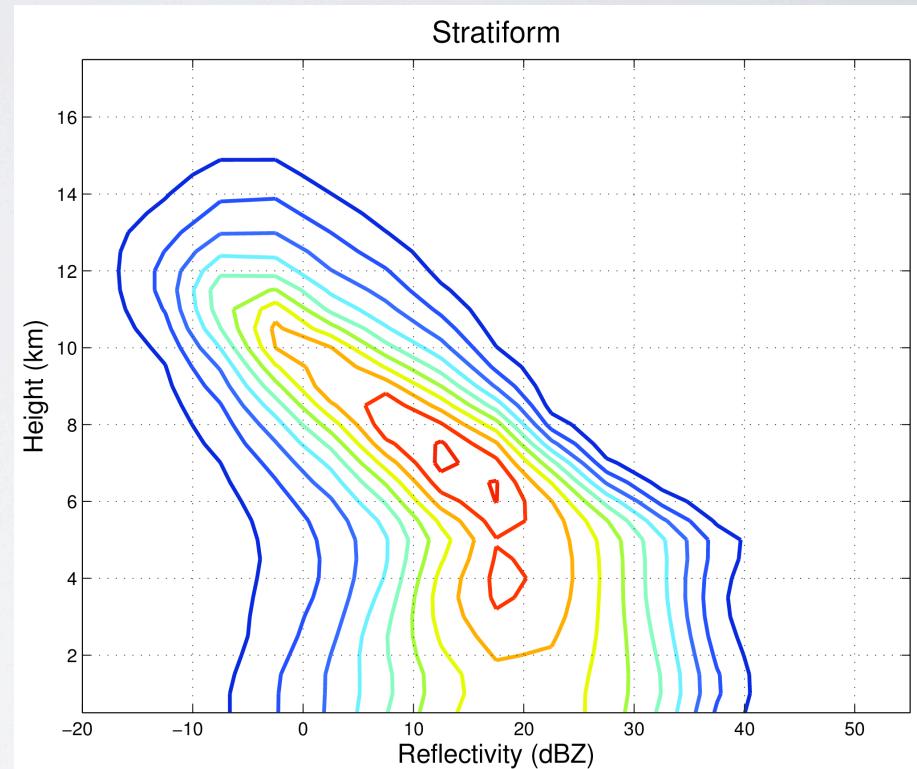
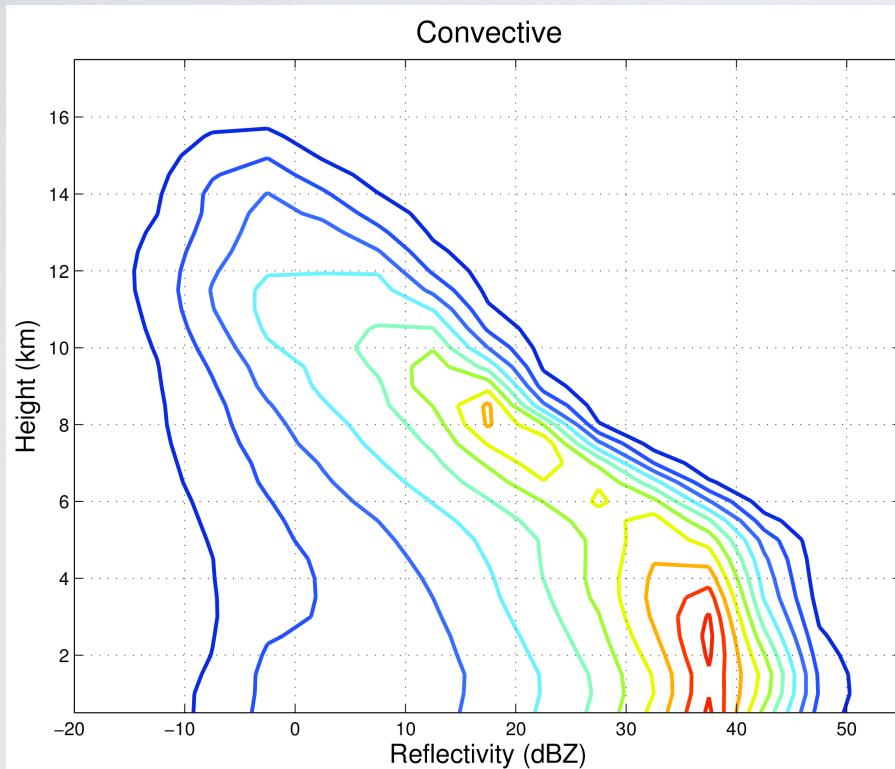
Medium Anvils

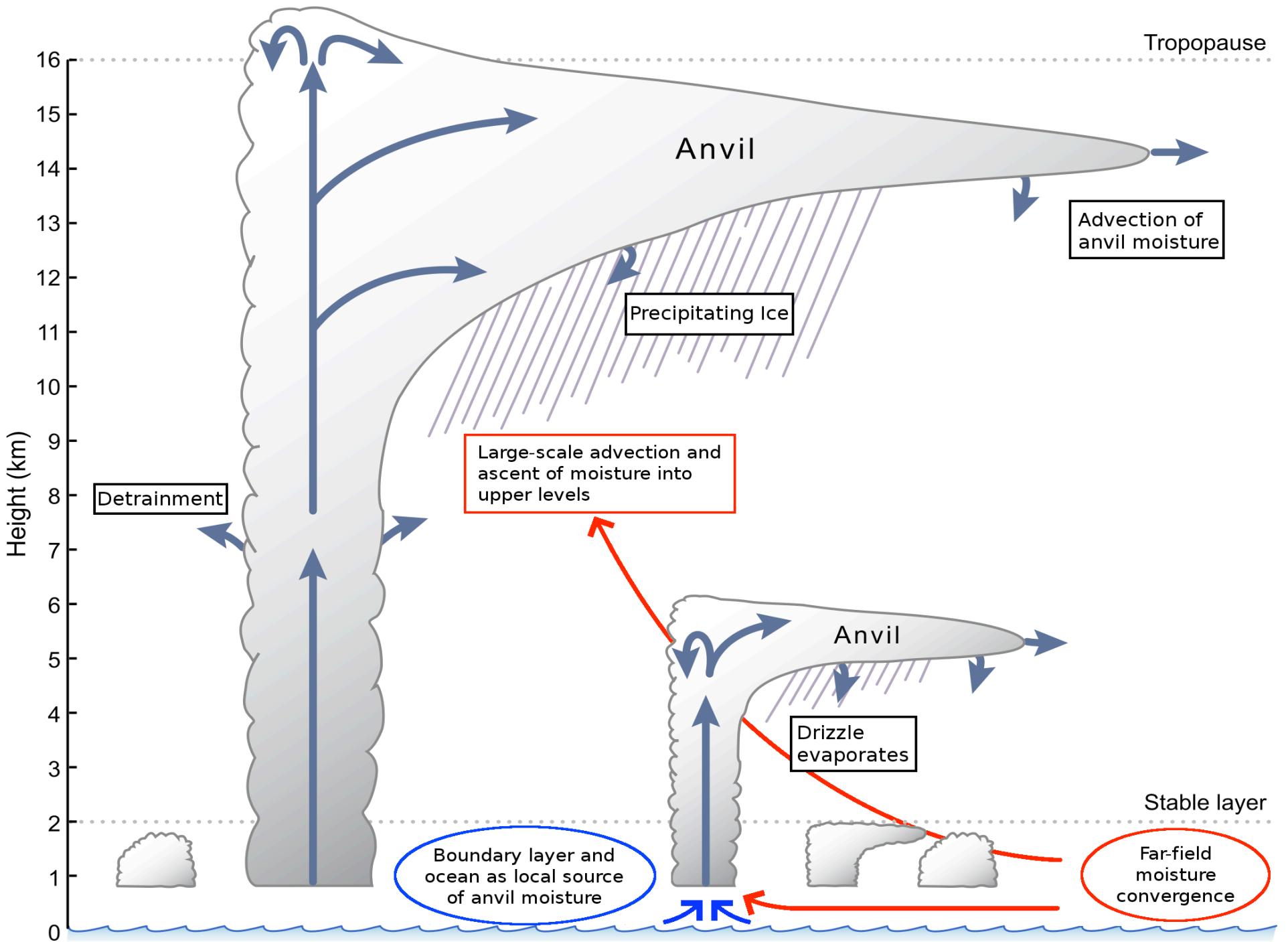


Thick Anvils

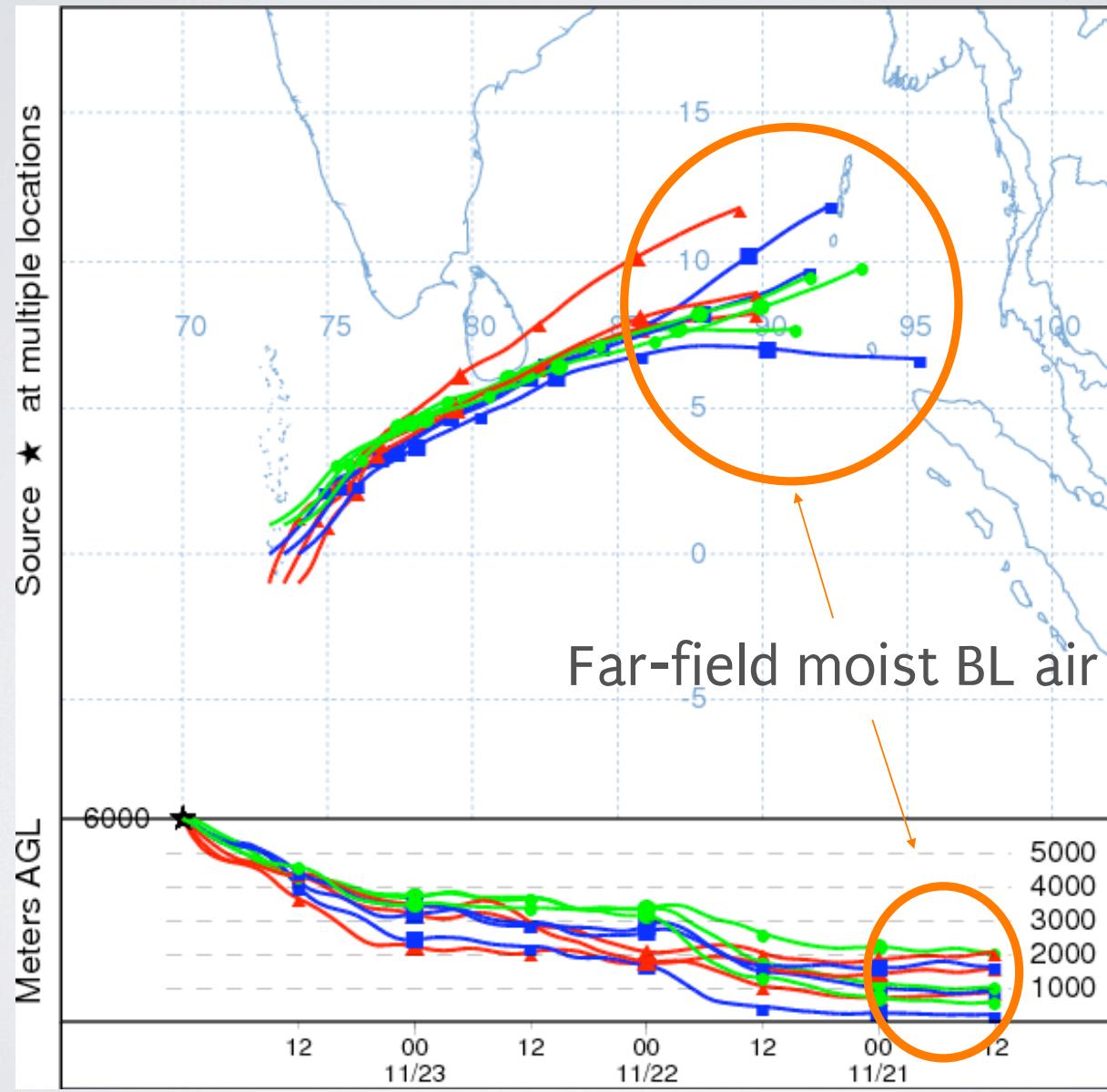


Precipitating Clouds





Large-scale ascent of moisture?



Summary

- Role of anvil clouds in moistening of troposphere
- Local and far-field sources of moisture
- Advection and ascent of far-field moist boundary layer air
- Radar observations detail cloud structures used to validate mesoscale model.