Synoptic Control of Warm Season Weather Systems over the Western US

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A potential vorticity (PV) and dynamic tropopause (DT) perspective is adopted to help understand the structure and evolution of warm season convective systems over the western US in general and the southwestern US in particular. The first part of the talk will review basic concepts of "PV thinking" from a DT perspective. The second part of the talk will apply the PV thinking and DT perspective to help understand the physical processes that govern the behavior of warm season weather systems over the Southwest. Examples will be drawn from weather systems that reach the Southwest from the: 1) Gulf of Mexico and Caribbean (e.g., African waves, 2) continental interior of North America (e.g., disturbances rolling clockwise around the periphery of upper-level anticyclones), and 3) eastern Pacific (e.g., recurving and decaying tropical cyclones).

EXTREME WATER AND WEATHER EVENTS