Quantitative Precipitation Forecasting

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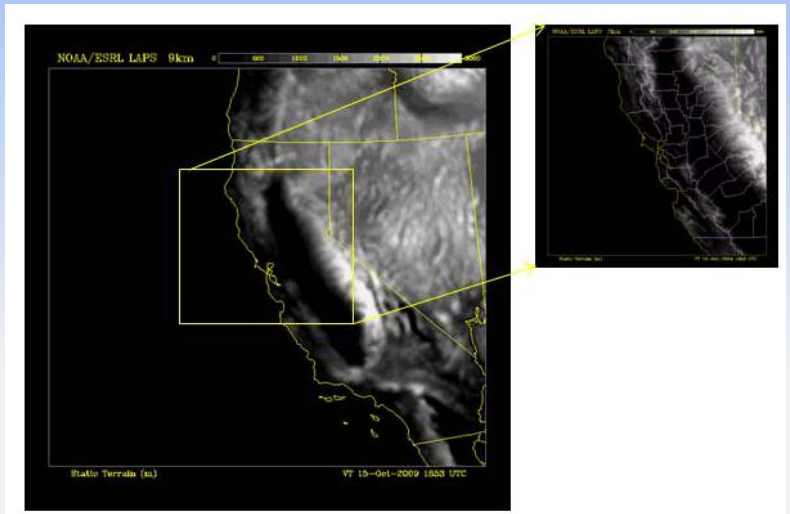
Collaborations: ESRL/PSD, California Department of Water Resources, NCAR, WFOs, OHD, NSSL, and many others

QPF related activities

- HMT ensemble precipitation forecasting
  - mixed model/mixed physics /mixed LBCs ensemble
  - 9 members
  - nested domain
  - LAPS analysis

Yuan et al. 2008, Jankov et al. 2007, Jankov et al. 2009

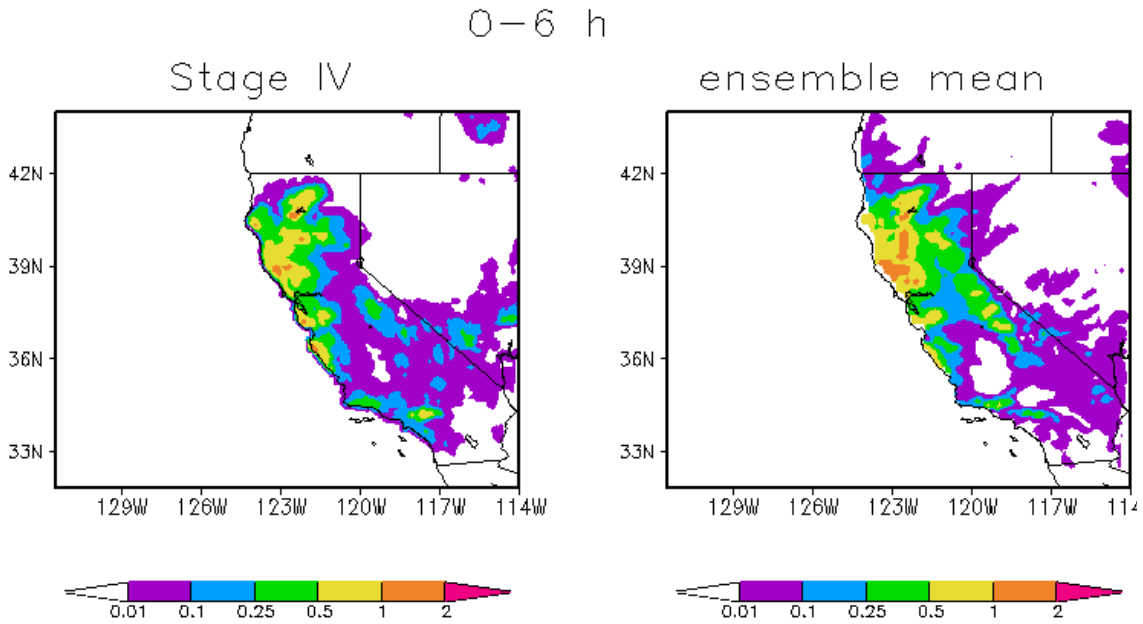


- Convective Precipitation forecasting
  - high resolution diabatical initialization (LAPS/STMAS)

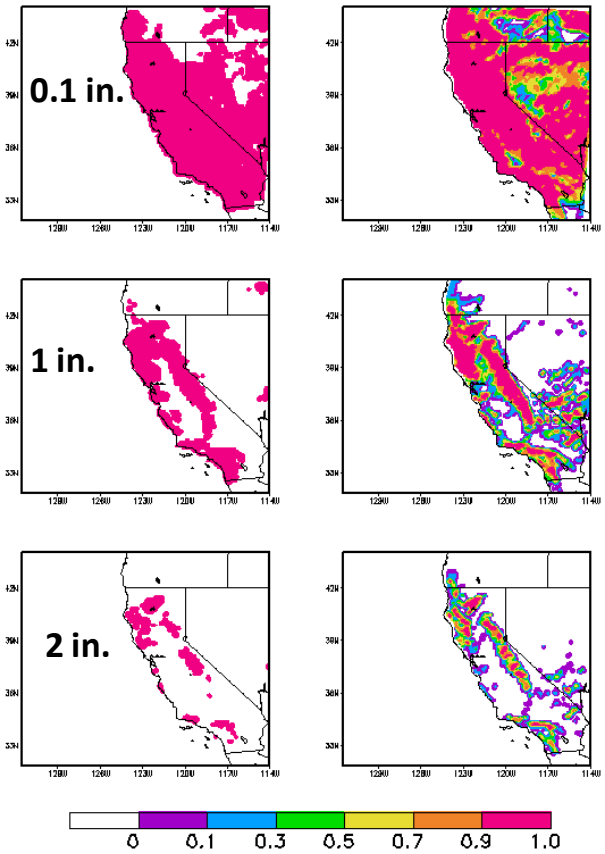
    Etherton and Santos 2006, Jankov 2007 a,b
  - high spatial/temporal resolution numerical model runs
  - frequent update

HMT QPF and PQPF

48-hr forecast starting at 12 UTC, 18 January 2010

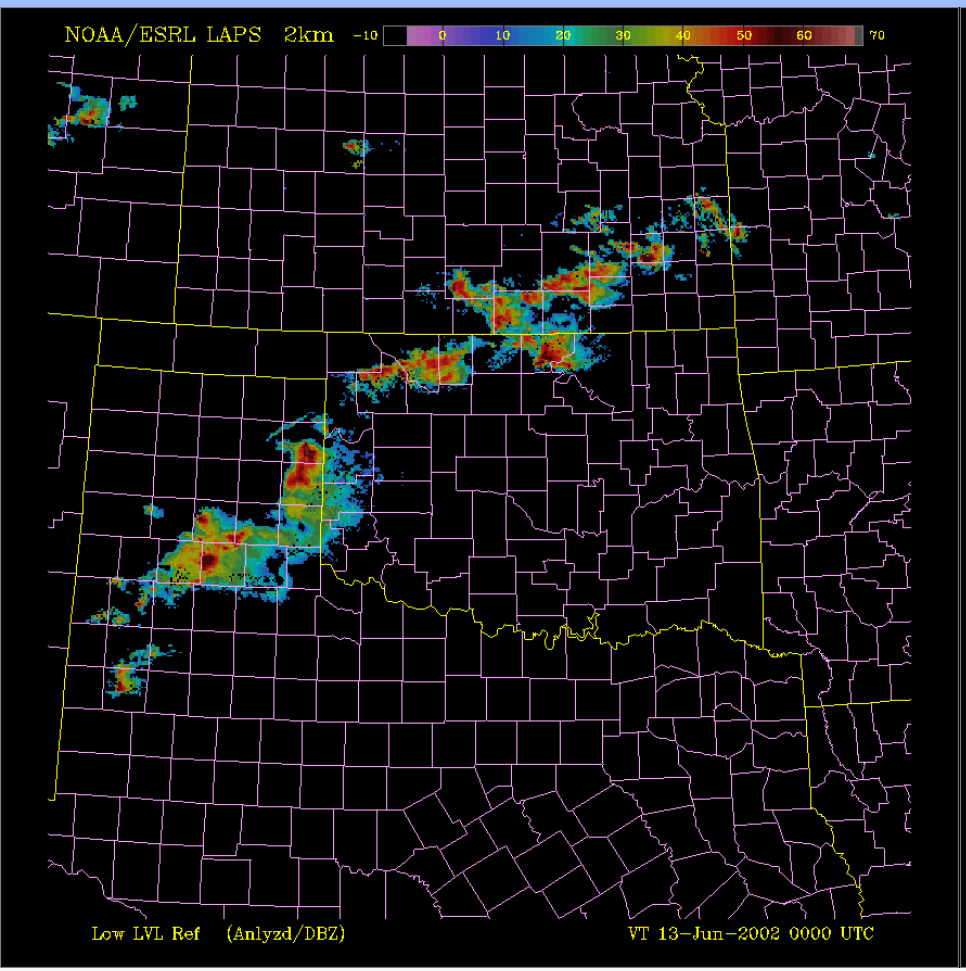


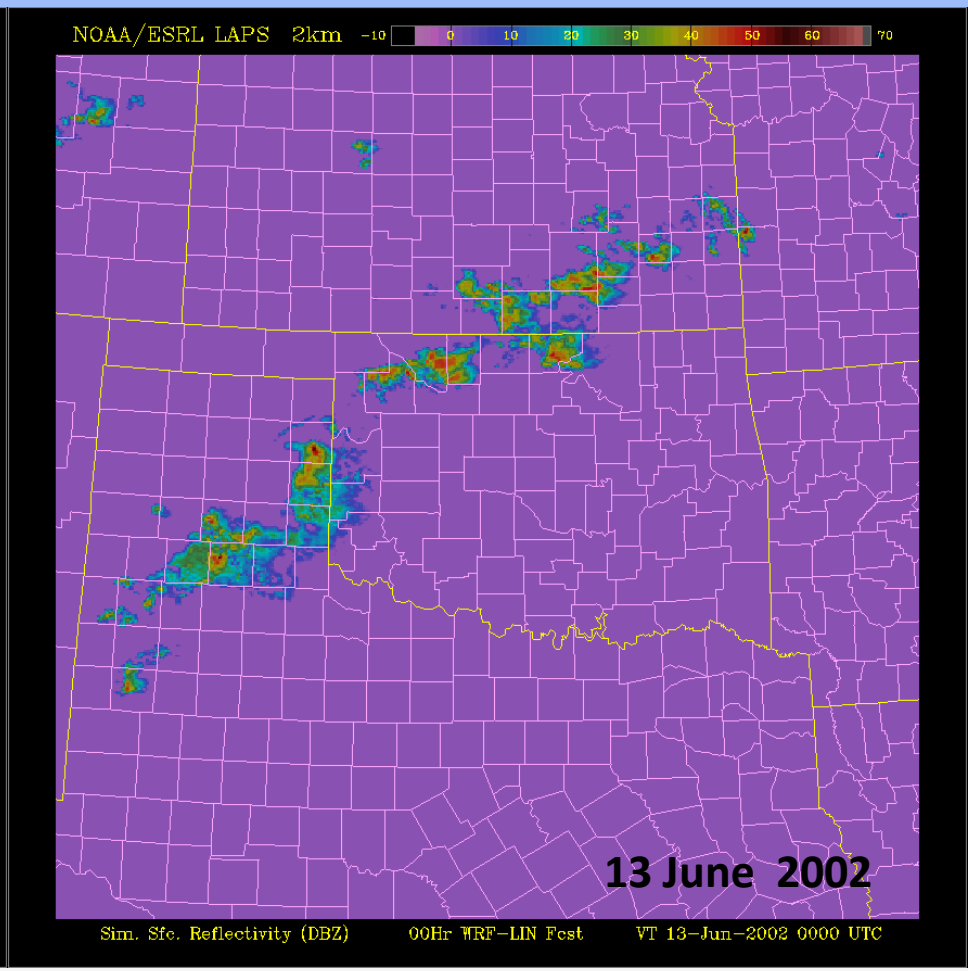
24-hr PQPF



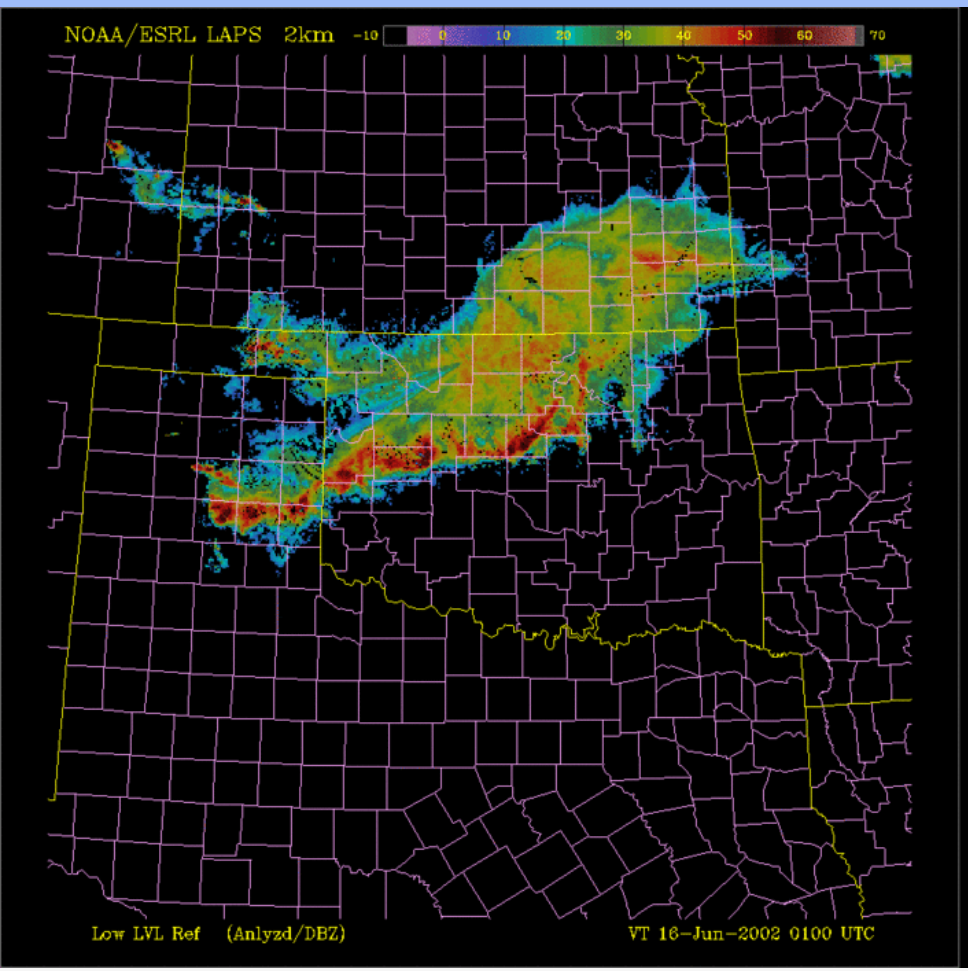
Analysis

6-hr **Diabatically (LAPS)** initialized WRF-ARW forecast

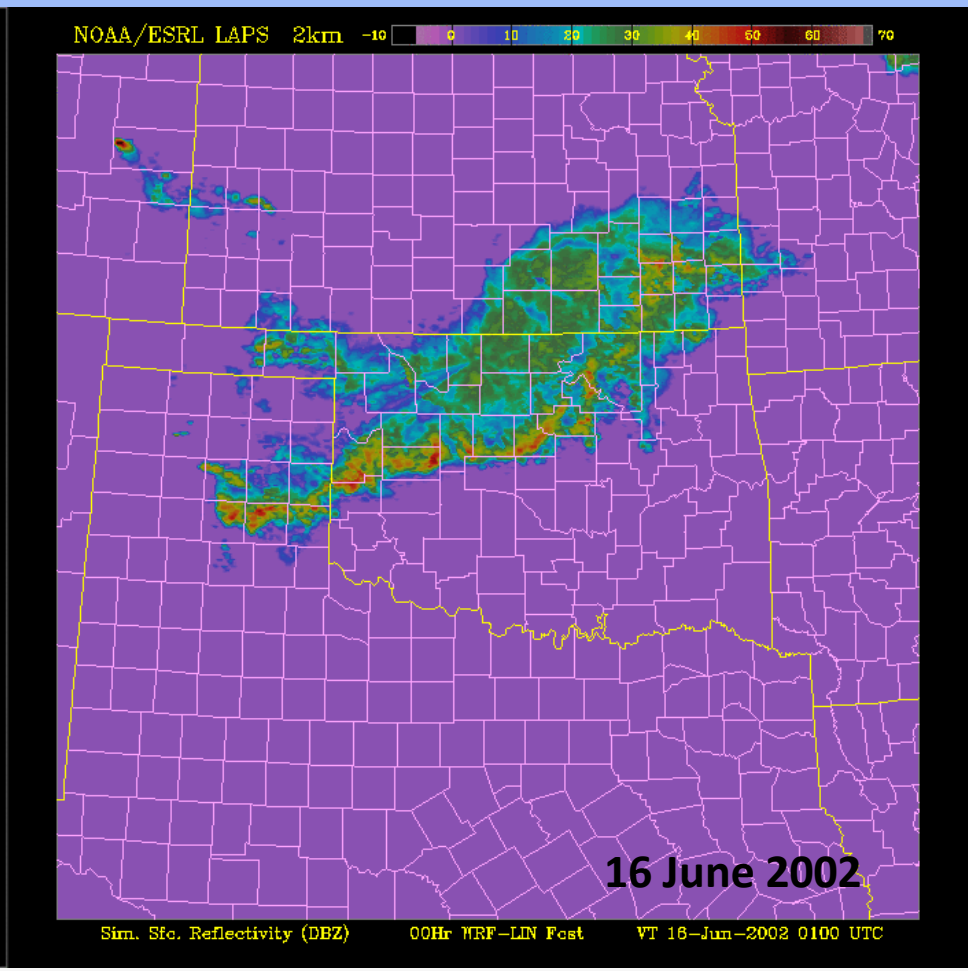




Analysis



3-hr Forecast



Future Plans

HMT

- Continue to improve winter season QPF and PQPF
- Microphysics related research
- Ensemble stream flow

Convective weather (HWT)

- Increased resolution diabatic NWP initialization (LAPS/STMAS)
- Increased spatial/temporal resolution forecasts
- Ensemble approach (DET)