HRRR Model Forecasts of Convective Outflows Near Fires

• High Resolution Rapid Refresh model
  • Operational in CONUS, still Experimental in Alaska
  • 3 km grid spacing (1.9 million points in CONUS)
  • Run hourly to produce 18 hour forecasts
  • Advanced data assimilation

• Work Underway
  • Continental U.S.: Brian Blaylock
  • Alaska: Taylor McCorkle

• Extensive info online already
  • [http://meso1.chpc.utah.edu/jfsp_convective/](http://meso1.chpc.utah.edu/jfsp_convective/)
Objectives and Research Questions

• Investigate the impacts of convective outflows on fire behavior

• Evaluate the ability of the High Resolution Rapid Refresh (HRRR) model to forecast the characteristics of such mesoscale atmospheric boundaries in the continental U.S. and Alaska

• Can the HRRR facilitate nowcasting at lead teams less than 6 h and improve situational awareness regarding convective outflows at lead times less than 24h?

• What are relevant indicators of potential fire behavior based on HRRR forecasts and how can those be communicated effectively?
Operational characteristics of outflow events

- Past events
  - 2015 Alaska season
  - 2017 Season
    - Brianhead, UT
    - Napa, CA
    - Thomas, CA

- Focus on 2018 events:
  - Operational HRRR models in Alaska and continental U.S.
  - GOES-17 available
  - Global Precipitation Mission (GPM) precipitation in Alaska
Lots of Forecasts

- Hourly updates for each of 15 hours.
- Visualizing them and interpreting the visualizations on a timely basis will be key
- Can it forecast when and where?
Real Time Products

Any grid point and current fires

Who will be go-to for access and interpretation of forecasts?
Next steps

• Validating GPM rainfall in Alaska (Taylor)
• Monitor fire cases as fire season progresses in CONUS and AK
• Your Interest?
  • Check back periodically for info posted at:
    • http://meso1.chpc.utah.edu/jfsp_convecive/
  • Try out HRRR visualizations available from:
    • http://hrrr.chpc.utah.edu/