

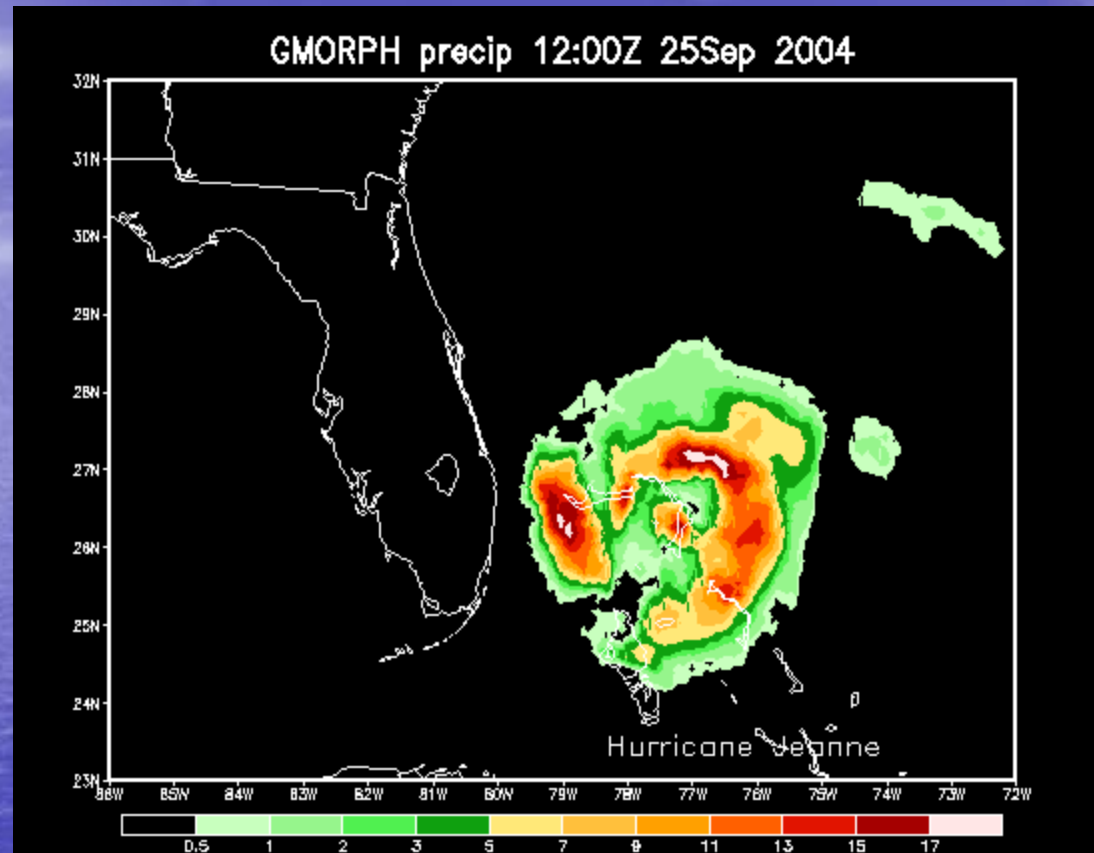
# Precipitation Crosscut in GEWEX

- What is a crosscut?
  - There is interest in identifying opportunities to create cross-panel activities that will help to integrate GEWEX products and science
- Since precipitation is quite central to GEWEX, maybe it can provide the focus for a crosscut
- GPCP provides a suite of precipitation products that are (or could be) used for many GRP, GHP and GMPP activities
  - GPCP assessment recently finished – still under review
  - GRP working toward integrated assessment
  - GPCP is working toward finer resolution products

# Precipitation in General

- Numerous international and national programs and institutions need precipitation data on fine time and space scales
- Combinations of rain gauges and estimates based on satellite observations are best suited for these purposes in most areas
- This need and opportunity have been obvious for some time, and so numerous groups have been working toward such methods: GPCP/TRMM Multi-Satellite Precipitation Analysis, CMORPH, PERSIANN, ...
- These products all look quite impressive, and all use different approaches, so an evaluation is needed

## Some examples



CMORPH (NOAA CPC) uses a combination of precipitation estimates from passive microwave and cloud motion from geostationary IR (see Joyce et al., 2004, J. Hydrometeorology)

# Program for the Evaluation of High Resolution Precipitation Products (PEHRPP)

- Establish a comprehensive hypothesis-based collaborative effort to understand the capabilities and characteristics of these new HRPP (High Resolution Precipitation Products)
- Hypotheses:
  - HRPP errors can be characterized by comparing them to independent observations from rain gauges and radars.
  - Errors of and differences between HRPP are meaningful, in that they can be systematically related to precipitation characteristics and/or algorithm methodology.
  - Improved HRPP can be derived by combining products or methods based on the observed errors and differences.
  - HRPP spatial and temporal variability is realistic on scales appropriate for scientific studies (e.g., hydrology).
  - Numerical weather prediction forecasts of precipitation can be used to improve HRPP in some locations and times (e.g., high latitudes).
- Ad-hoc and voluntary, but sponsored by the International Precipitation Working Group (Working Group of CGMS)

## Four Suites of Activities

- 1) Regional comparisons – National and regional rain gauge-radar networks
- 2) High time resolution comparisons - CEOP and other high quality reference time series
- 3) Very high quality field programs – NAME, KWAJEX, ...
- 4) "Big picture" comparisons – continental and global patterns, annual cycle, ENSO, etc.

## Status and Schedule

- 1) Self-supporting and self-organizing, with broad international participation
- 2) Quite a few studies are well underway
- 3) International Precipitation Working Group Workshop in October 2006 in Melbourne Australia will evaluate status and consider whether recommendations are warranted

# Precipitation Crosscut in GEWEX

- Not clear how “precipitation” could serve as the focus for a crosscut
- Does appear to be considerable opportunity for feedback from GHP and maybe also from GMPP to GPCP on requirements for future evolution of precipitation products
- Results from PEHRPP are likely to be helpful to GPCP in developing future product suite