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Update on LLNL Cloud Modeling Data Products for CLWG

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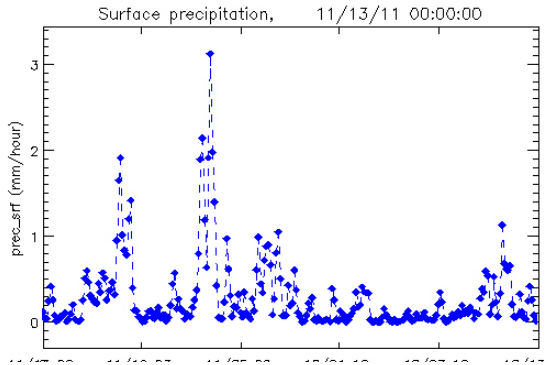
Data Released (1)

Large-Scale Forcing Dataset

- **Released the "ensemble" forcing for AMIE-Gan**
  - *covering the second major MJO observed during the perioc 11/13/2011 to 12/13/2011 over a 150x150km domain*
  - *ECMWF based, but constrained by SMART-R, S-POL, and TRMM precipitation radar measurements, respectively, to address uncertainties in surface rainfall.*
- **Updated the multi-scale MC3E forcing to improve the treatment of surface fluxes**
- **Updated cont. forcing data for the period of 2002-2011, which covers RACORO and SPARTICUS, to improve the consistency of processing surface fluxes and to fix a bug in merging the surface net radiation from different instruments**
- **Generated a high vertical resolution (10mb) forcing dataset over a smaller domain (150x150km) for RACORO to support the cloud modeling activities in ASR (and FASTER).**

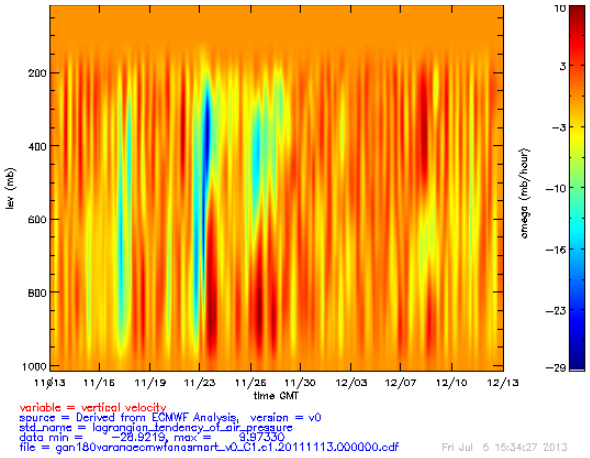
Surface Precip at AMIE-Gan



11/13/2011-12/13/2011

source = SMART data within 150km radius of GAN site, version = v0

Derived Omega for AMIE-Gan



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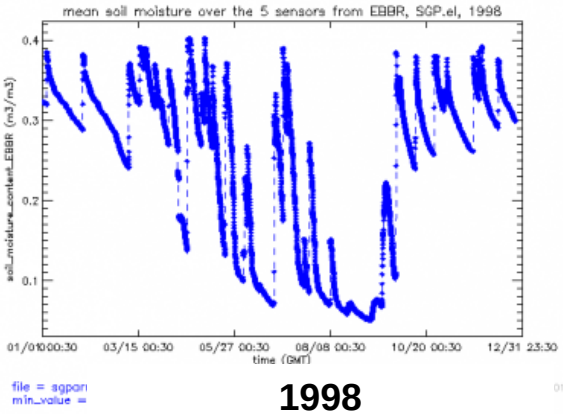
Data Released (2)

- **ARM Best Estimate Dataset (ARMBE)**
  - **Released ARMBE-LAND dataset (1994 and 2012 at the ARM SGP CF) to support L-A coupling studies and land model developments**
    - *Contains critical soil properties (e.g., soil moisture, soil temp, heat fluxes). This dataset could be used together with other ARMBE data products such as ARMBECLDRAD (cloud and radiative fluxes) and ARMBEATM (surface precipitation, surface sensible and latent heat fluxes and other atmospheric state variables) to get a more complete description of the land condition and its associated large-scale environment.*
  - **Completed the transition from CMBE to ARMBE so that users can easily find the data in the Archive**

Soil moisture



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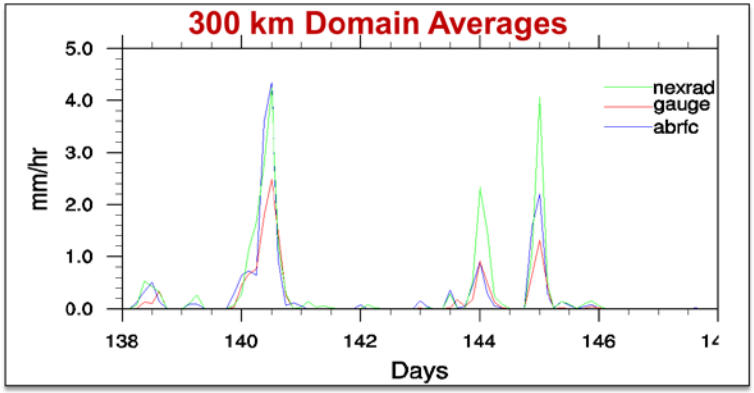
Ongoing and Future Work (1)

- **Large-scale forcing**

  - **Ensemble forcing for MC3E**
    - *address the impact of precip uncertainty on the derived forcing (a talk on this subject will be given at the MC3E breakout)*
    - *Currently working with Scott Giangrande (BNL) to quantify uncertainty in surface precip*

NEXRAD vs. ABRFC vs. Rain Gauge



  - **Forcing for AMIE/DYNAMO**
    - *Revise and extend the current AMIE-Gan forcing to the entire period when improved radar precipitation data are available (work with the DYNAMO/AMIE radar group)*
    - *Develop sounding based forcing for the DYNAMO/AMIE sounding period (work with Dick Johnson/Paul Ciesielski at CSU)*

Ongoing and Future Work (2)

- **Enhance the ARMBE dataset**
  - **ARMBE-2DGridded**
    - *provide 2D gridded ARMBE data at SGP that describes the subgrid scale variability of clouds and their associated large-scale environments.*
  - **ARMBE-AVG**
    - *provide ARBME data averaged over the SGP domain, comparable to a typical GCM grid box*
- **Add error bars to MICROBASE** *(a by-product from QUICR)*
  - *By perturbing key parameters and input variables*
- **QCECOR**
  - *Continue the development of ARM Quality Controlled Eddy Correlation (ECOR) Flux Measurements VAP (QCECOR), specifically for NSA, TWP, and AMF sites where new ECOR systems were installed with the Recovery funds.*
- **Contribute to the development of an ARSCL simulator –** *work with the Radar group*
  - *Allow a meaningful comparison between ARM radar-lidar measurements and climate model clouds.*

Thank You

Comments and Questions?