Custom Data Support for the FAst-physics System TEstbed & Research (FASTER) Project
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What is FASTER?
The multi-institutional project aims to evaluate and improve parameterizations of fast processes (those involving clouds, precipitation, and aerosols) in global climate models, using a combination of numerical prediction models, single-column models, cloud-resolving models, large-eddy simulations, full global climate model output, ARM active and passive remote sensing and in situ data.

Data Product Development
The custom data support effort specializes in the formulation of best estimate (CMBE-like) datasets tailored to GCM, CRM and LES modelers. Products include custom gridding and averaging for the model of interest, using high time resolution and pixel-level data from continuous ARM observations and complementary data sets.

Currently, we have produced three products, as shown below, for the SGP March 2000 IOP as part of FASTER’s warm-up exercises.

1. Cloud Model Product
   Produced averages, statistics and QC for 1 hour and 5 minute resolutions.

2. Soil Moisture & Temperature Profiling Product
   Produced individual facility and SGP domain-wide hourly averages, statistics and QC.

3. Gridded Precipitation Product
   Produced SGP domain-wide hourly averages, statistics and QC.

Summary
• The FASTER Data Support effort provides best estimate (CMBE-like) products customized to the needs of FASTER GCM, CRM and LES modelers.
• Select products will be made available to the ARM community.

Research Activity: Cloud Fraction
Objective is an optimized cloud fraction product for model evaluation.

Inhomogeneity in cloud cover, as interpreted by different instruments/products, can yield drastically different cloud fraction amounts.

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References:

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