We welcome your feedback
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Summary: “Recommended” datastreams address a need identified in the recent Triennial Review that is being met through Data Discovery: to assist users to find the “best” ARM datastreams for their needs. A ranked set of datastreams for core geophysical quantities were first identified in 2012 by Jim Mather and ARM Translators. An update is needed and is being led by the Metadata Team and Translators.

Objectives
- Update current list of recommended datastreams to reflect latest products, and geophysical quantities
- Better assist users in finding “best” ARM datastreams to meet their needs
- Develop process for continual updates

Criteria for recommendation
Geophysical quantities were selected based on the core mission of ARM: to improve the understanding and representation, in climate and earth system models, of clouds and aerosols as well as their interactions and coupling with the Earth’s surface.

Rationale of recommendation includes data quality, completeness of record, and representativeness for two user communities
1. point, column (soda straw) with high frequency and resolution for physical process studies
2. spatially / temporally averaged to model grid for model evaluation and comparison with data

Example for geophysical quantity, surface temperature:
- Rank 1 for community #1 -- datastream sgpmetE13.b1, variable: mean temperature
- Rank 1 for community #2 -- datastream sgparmbeatmC1.c1, variable: surface temperature

Best estimates are included but there are additional recommendations that may be useful.
There may be multiple recommendations at a site due to dimensionality (e.g., point, grid)

Current state of recommended datastreams
There are 46 core geophysical quantities. They cover these measurement categories:
16 - atmospheric state  4 - surface properties  10 - cloud properties  6 - aerosols  10 - radiation

There are currently 3474 recommended geophysical quantity: datastream pairs, distributed as follows:

<table>
<thead>
<tr>
<th></th>
<th>aerosols</th>
<th>atmos state</th>
<th>cloud prop</th>
<th>radiation</th>
<th>surface prop</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rank 1</td>
<td>120</td>
<td>58</td>
<td>163</td>
<td>1421</td>
<td>160</td>
<td>2449</td>
</tr>
<tr>
<td>Rank 2</td>
<td>264</td>
<td>257</td>
<td>105</td>
<td>28</td>
<td>136</td>
<td>790</td>
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<tr>
<td>Rank 3</td>
<td>0</td>
<td>12</td>
<td>33</td>
<td>190</td>
<td>0</td>
<td>235</td>
</tr>
<tr>
<td>Subtotal</td>
<td>384</td>
<td>854</td>
<td>301</td>
<td>1639</td>
<td>296</td>
<td>3474</td>
</tr>
</tbody>
</table>

Information about core geophysical quantities, recommended datastreams, and associated metadata are in arm_int2 database tables, and accessed by Data Discovery for display to users

Example:
ARM Best Estimate product for atmospheric measurements is the Rank 1 recommended datastream for latent heat flux and for atmospheric temperature -- spatially averaged for modelers.

Future Plans
- Enhance display of recommendations in Data Discovery
  - Use recommendations for choosing what datastreams are displayed in Data Discovery
  - Rationale for recommendation and characteristics of datastream displayed to users
  - Additional datastream characteristics included in new Data Discovery Design
- Include identified Data Epochs as a source of recommended datastreams
- Allow requests from infrastructure and user community for recommended datastreams and core geophysical quantities

Workflow for processing requests for new or updated recommended datastreams
- Metadata Team reviews incoming requests, interacts with requester
- Processed request sent to Translator for final review and approval
- Approved request implemented in ADC and made available through Data Discovery