

SST

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The  
Problem

Use Case

# Sea Surface Temperature (SST) Use Case

Peter Cornillon

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REAP Workshop  
24-27 July 2007

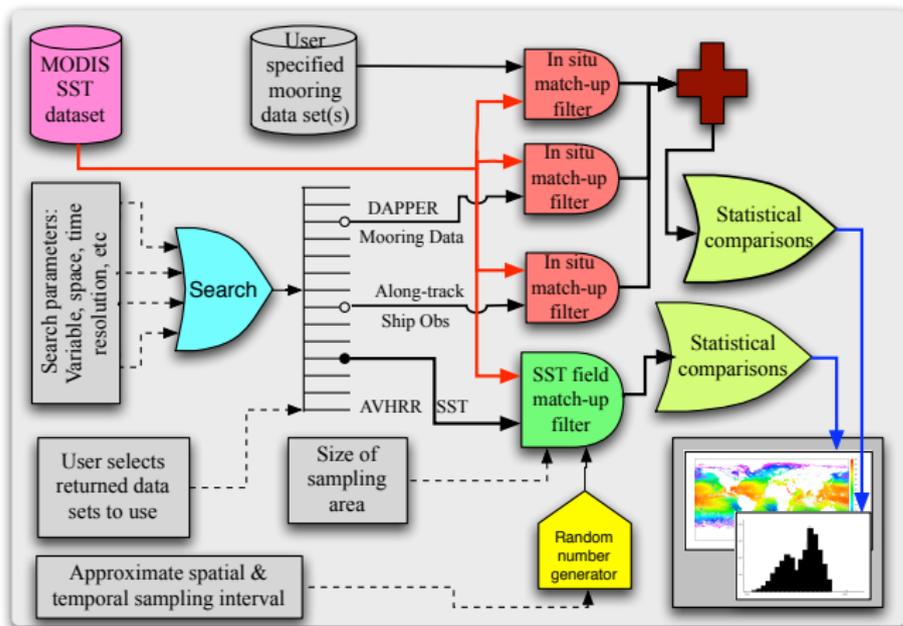
# An Oceanographic Use Case

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# The Problem

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- Today there exists a large number of 2D and 3D **sea surface temperature** (SST) data sets.
  - Of differing resolution in space and time,
  - Of differing quality.

Making discovery and selection of SST data sets difficult at best.

- But why are there so many different 2 and 3D SST data sets?

Why doesn't the community simply agree on the "best" one?

Because:

- It's hard to get the community to agree on anything,
- There are so many different sources,
  - Sea-Viewing Wide Field-of-View of Sea (SeaWiFS),
  - SeaWiFS since the mid-1990s, and
  - Historical systems
- There are so many different applications making use of these data.

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● Many different data sets from different sources,

● Different data sets from different sensors,

● Different data sets from different models,

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● Many different users using these data for many uses,

● Different data quality and accuracy,

● Inconsistent formats

- There are so many different applications making use of these data.

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Why doesn't the community simply agree on the "best" one?  
Because:
  - It's hard to get the community to agree on anything.
  - There are so many different sources,
    - Some are expensive to use (e.g. Argo floats)
    - Some are hard to access (e.g. Argo floats)
    - Some are hard to use (e.g. Argo floats)
  - There are so many different applications making use of these data.

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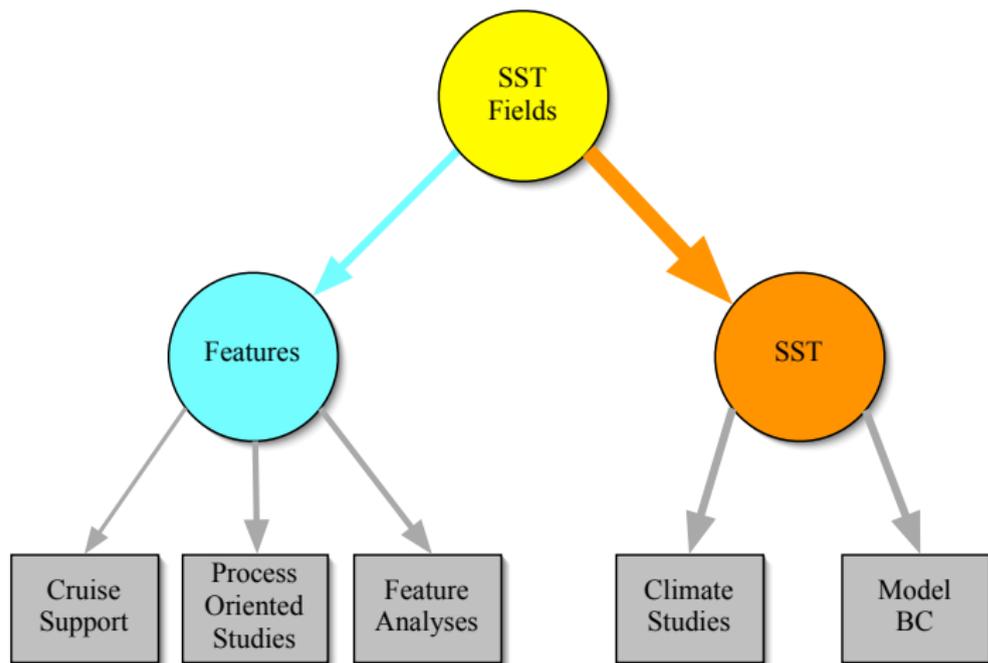
# Use of SST fields falls into two general groups

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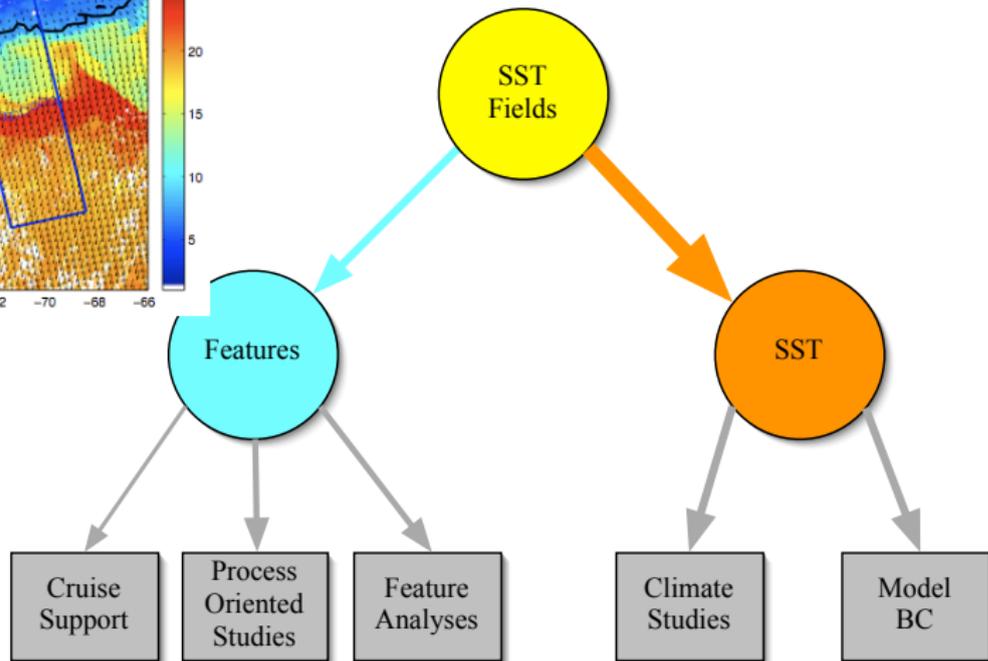
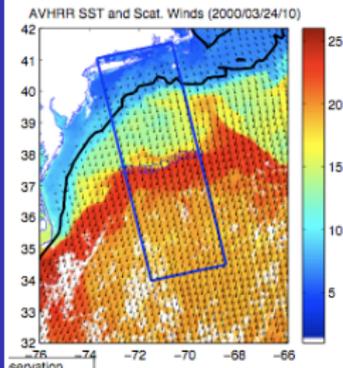
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# Data Set Characteristics by Study Type

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## Feature Related Studies

- Relatively small areas
  - Coastal
  - Mesoscale
  - Sub basin
- Fine spatial resolution
- Fine temporal resolution
- Medium to small volumes
- **Relative SST accuracy – Critical**
- Cloud screening focussed on preserving features

## SST Related Studies

- Relatively large areas
  - Large basin scale
  - Global
- Coarse spatial resolution
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- Large volumes
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Dataset	Size	Last Modified
<a href="#">AIRS Level 3 Physical Retrieval Products/</a>		2007-07-24 00:25:06Z
<a href="#">AVHRR Sea Surface Temperature/</a>		2007-07-24 00:25:06Z
<a href="#">DAO Subset of the Monthly Mean One Layer Diagnostic Products - ground temperature/</a>		2007-07-24 00:25:06Z
<a href="#">In situ Surface Temperature Data/</a>		2007-07-24 00:25:06Z
<a href="#">ISCCP Cloud Products - clear sky surface temperature/</a>		2007-07-24 00:25:06Z
<a href="#">MODIS Sea Surface Temperature (SST) Products/</a>		2007-07-24 00:25:06Z
<a href="#">NCEP Sea Surface Temperature Data/</a>		2007-07-24 00:25:06Z
<a href="#">TOVS Pathfinder Atmospheric Sounding Data/</a>		2007-07-24 00:25:06Z

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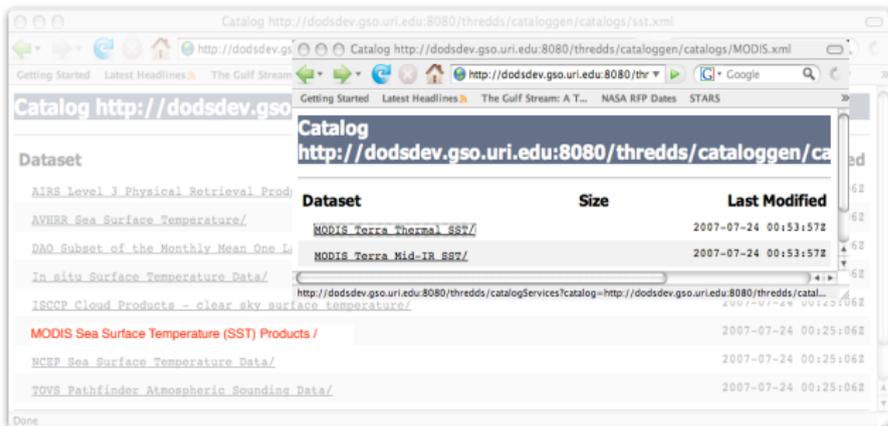
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<a href="#">In situ Surface Temperature Data/</a>		
<a href="#">TRCCP Cloud Products - clear sky surface temperature/</a>		2007-07-24 00:53:57Z
<a href="#">MODIS Sea Surface Temperature (SST) Products /</a>		2007-07-24 00:25:06Z
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The screenshot shows a web browser window displaying a catalog of SST datasets. The browser's address bar shows the URL: <http://dodsdev.gso.uri.edu:8080/thredds/cataloggen/catalogs/MODIS.xml>. The page content includes a table with the following columns: Dataset, Size, and Last Modified. The table lists several datasets, all with a last modified date of 2007-07-24 00:56:16Z.

Dataset	Size	Last Modified
NASA/JPL MODIS Terra Thermal SST, Daily 4 km/		2007-07-24 00:56:16Z
NASA/JPL MODIS Terra Thermal SST, Daily 1 deg/		2007-07-24 00:56:16Z
NASA/JPL MODIS Terra Thermal SST, Daily 36 km/		2007-07-24 00:56:16Z
NASA/JPL MODIS Terra Thermal SST, Weekly 4 km/		2007-07-24 00:56:16Z
NASA/JPL MODIS Terra Thermal SST, Weekly 1 deg/		2007-07-24 00:56:16Z
NASA/JPL MODIS Terra Thermal SST, Weekly 36 km/		2007-07-24 00:56:16Z
NASA/JPL MODIS Terra Thermal SST, Monthly 4 km/		2007-07-24 00:56:16Z
NASA/JPL MODIS Terra Thermal SST, Monthly 1 deg/		2007-07-24 00:56:16Z
NASA/JPL MODIS Terra Thermal SST, Monthly 36 km/		2007-07-24 00:56:16Z

SST

Peter  
Cornillon

The  
Problem

Use Case

1 The Problem

2 Use Case

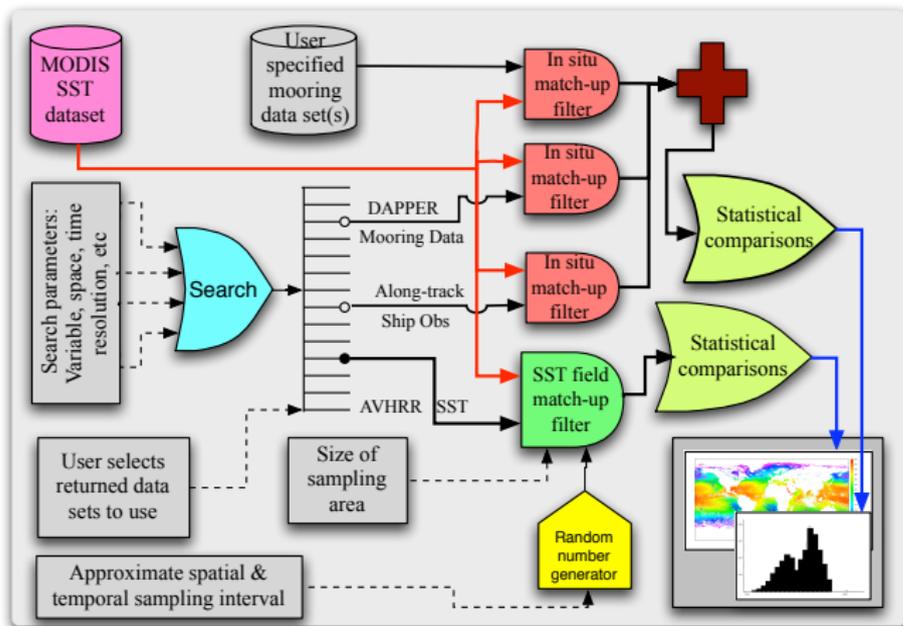
# The Default Use Case

SST

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The  
Problem

Use Case





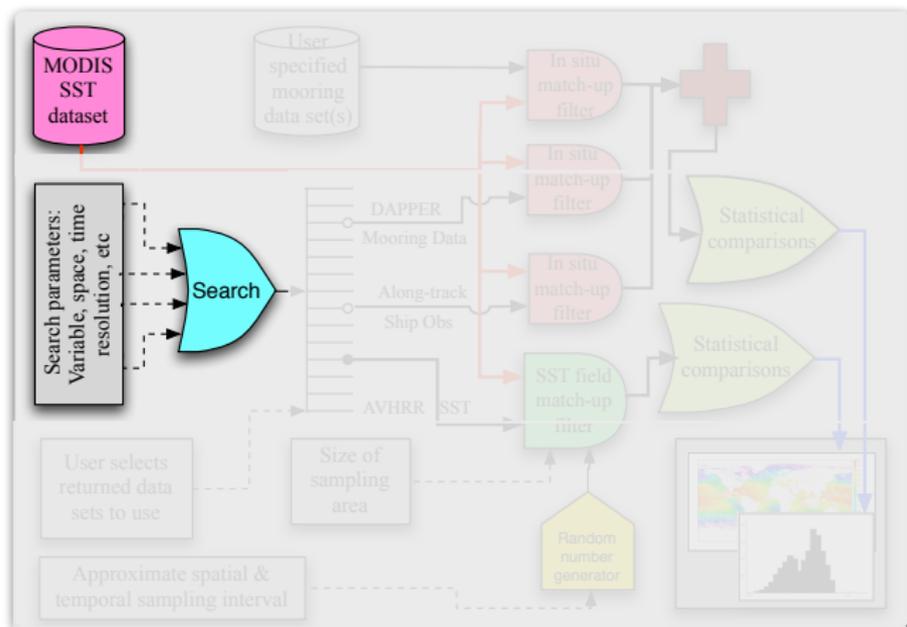
# The Default Use Case

SST

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Cornillon

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Problem

Use Case



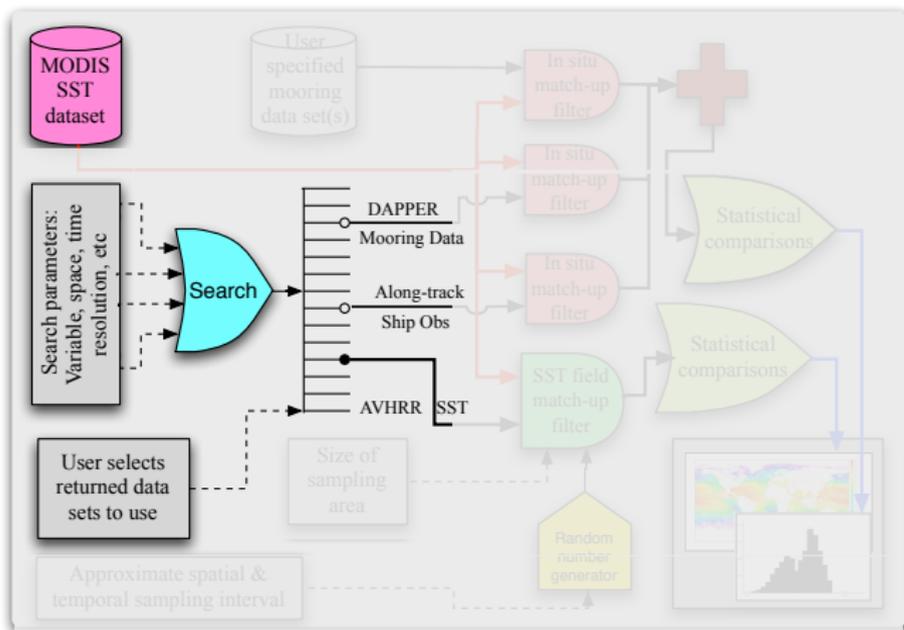
# The Default Use Case

SST

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Use Case



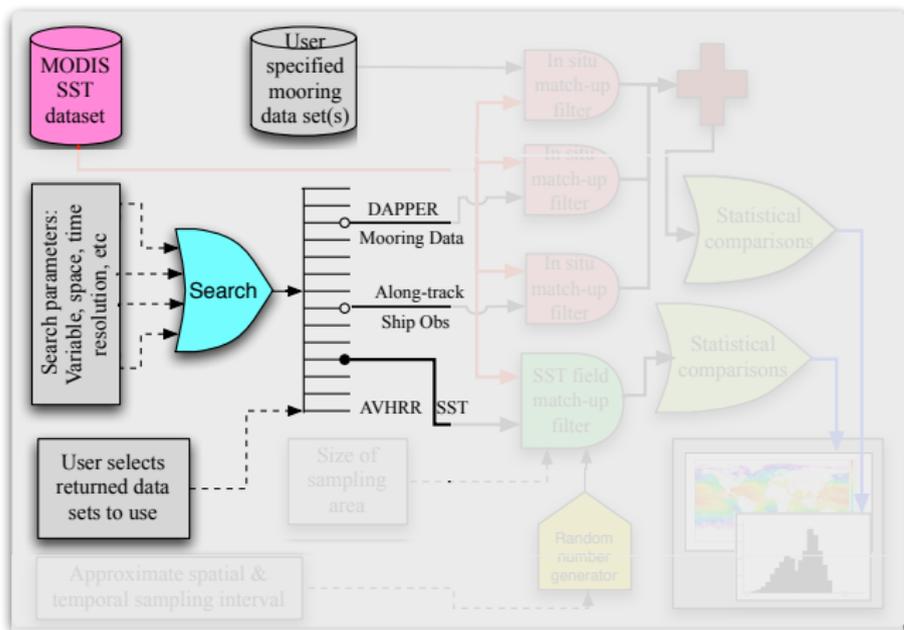
# The Default Use Case

SST

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Cornillon

The  
Problem

Use Case



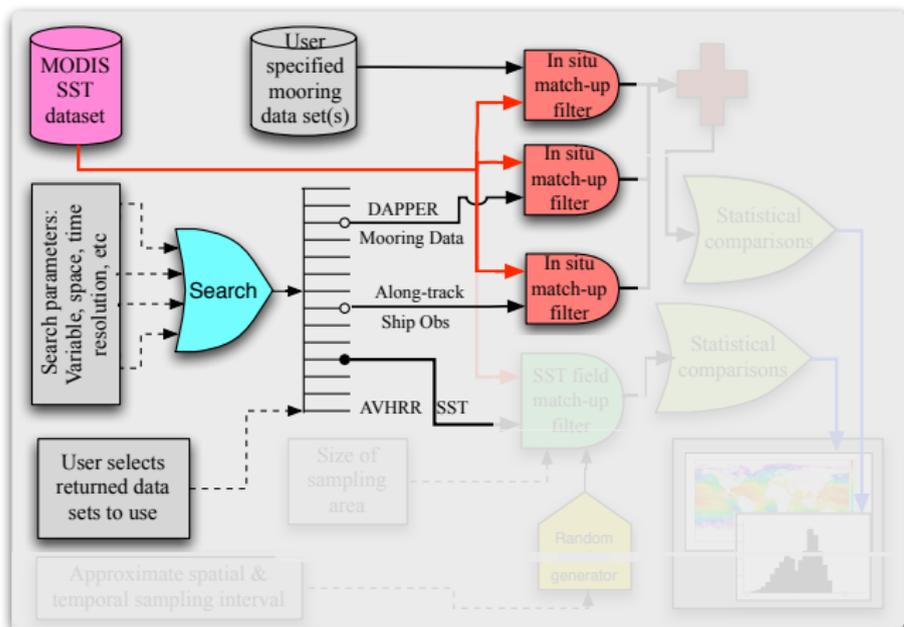
# The Default Use Case

SST

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The  
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Use Case



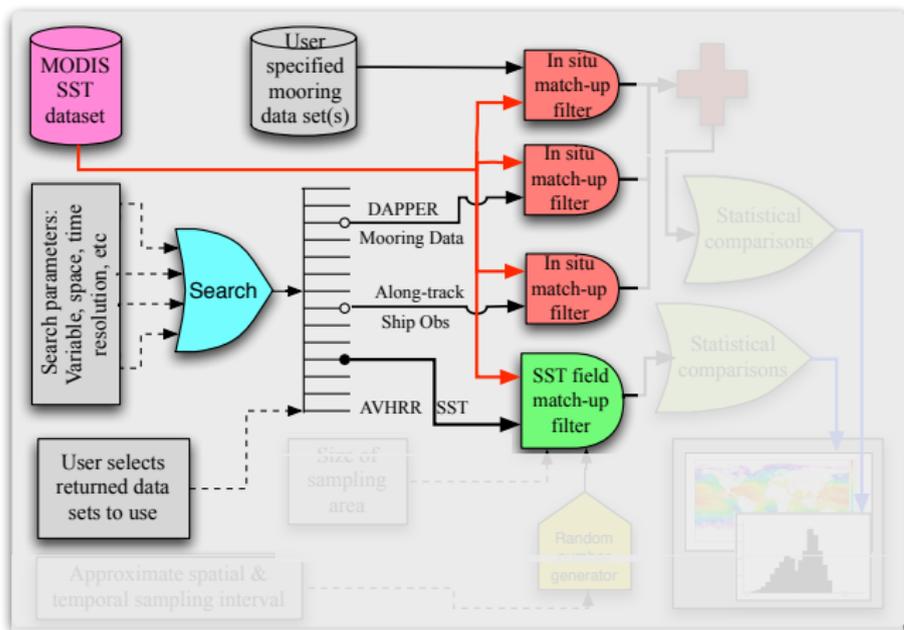
# The Default Use Case

SST

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The  
Problem

Use Case



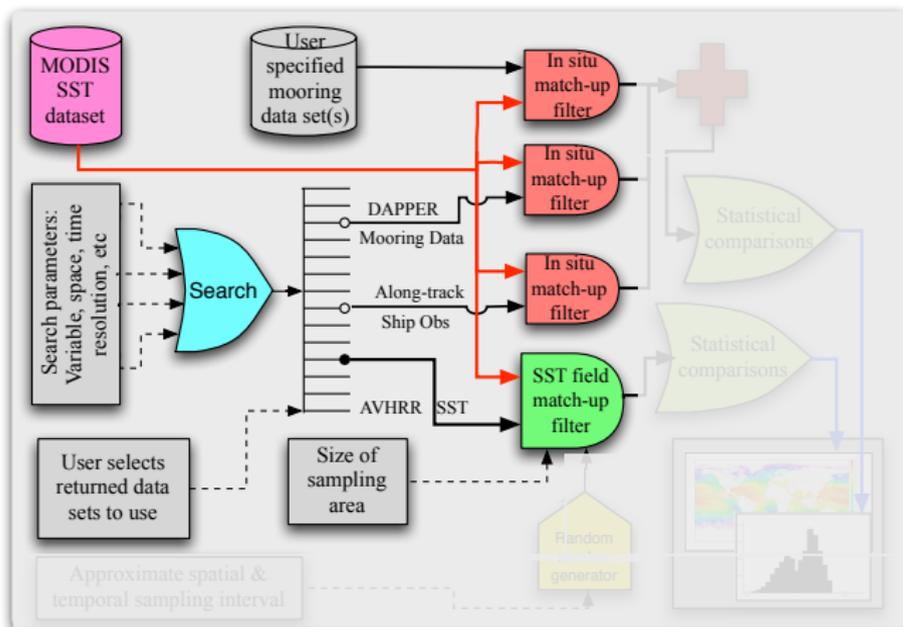
# The Default Use Case

SST

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The  
Problem

Use Case



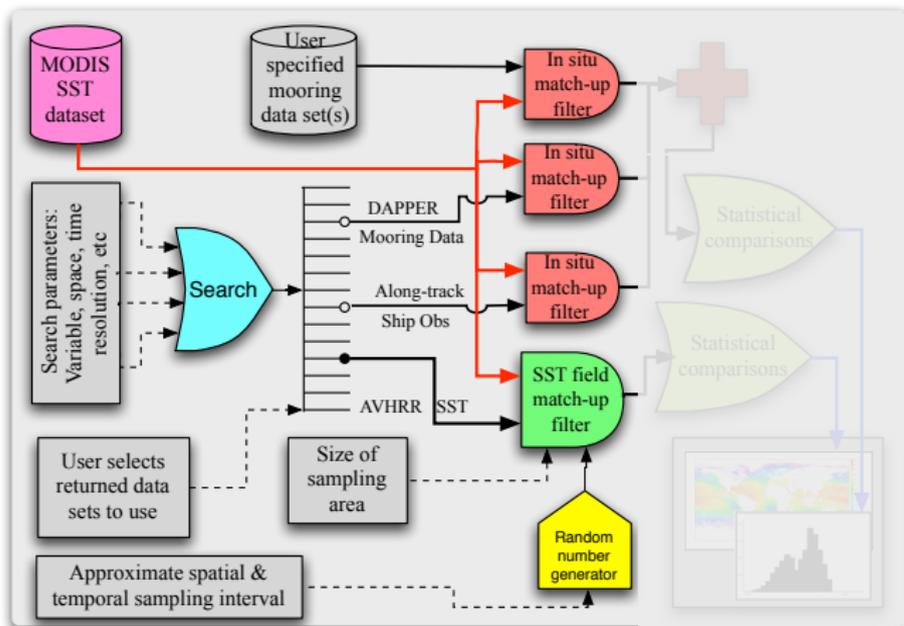
# The Default Use Case

SST

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The  
Problem

Use Case



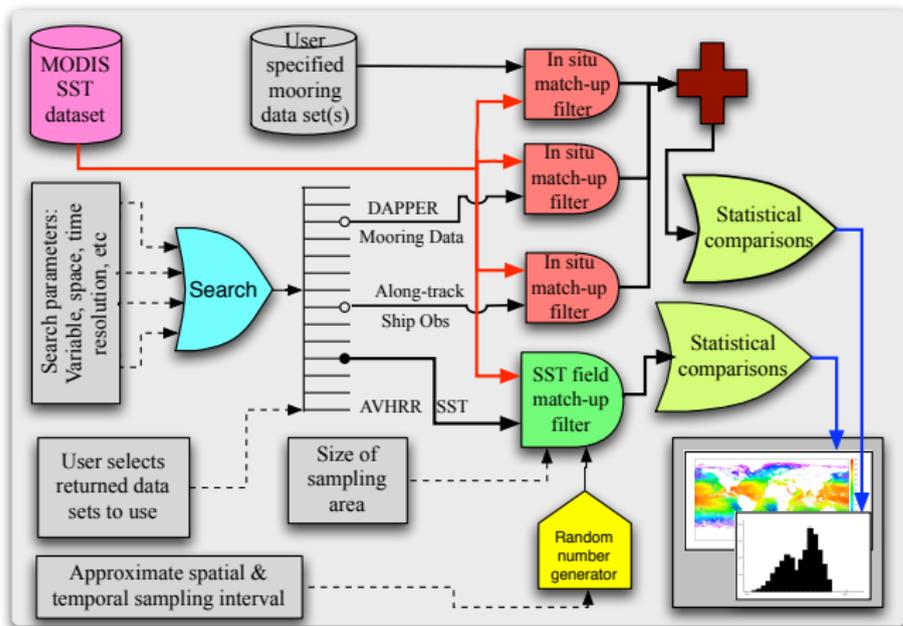
# The Default Use Case

SST

Peter  
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The  
Problem

Use Case



The SST evaluation use case is just one possibility:

- Are there other cases that you would prefer to address?
- Does this use case represent sufficiently general functions to be of use in a broad range of applications?

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- Are there other cases that you would prefer to address?
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SST

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The  
Problem

Use Case

# The End