Cloud Characteristics from Combined Imager and Sounder Measurements

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Outline

1. Motivation
2. Imager and Sounder collocation and cross-calibration
3. AIRS sub-pixel characterization of cloud cover and phase from MODIS
4. Cloud Top Height (CTH) Comparison to CALIOP
5. Combined AIRS and MODIS cloud characterization
6. Conclusions
1. Motivation

We anticipate more accurate cloud property determination by using combined imager and sounder data from polar-orbiting satellites to take advantage of high spectral and high spatial resolution measurements.
2. AIRS/MODIS

COLLOCATION and CALIBRATION
## AIRS and MODIS specifications

<table>
<thead>
<tr>
<th>Instrument</th>
<th>AIRS</th>
<th>MODIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>platform</td>
<td>Aqua</td>
<td>Aqua</td>
</tr>
<tr>
<td>Number of channels/bands</td>
<td>2378</td>
<td>36</td>
</tr>
<tr>
<td>Spectral range</td>
<td>3.7 - 15.4 µm</td>
<td>0.4 - 14.5 µm</td>
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<tr>
<td>Spectral resolution</td>
<td>&gt; 1200</td>
<td></td>
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<tr>
<td>Spatial resolution</td>
<td>13.5 km (nadir)</td>
<td>250 m - 1000 m</td>
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</tbody>
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![Graph of AIRS and MODIS spectral data](image)