Transport of pollution in the Upper Troposphere by Asian Monsoon

MUSCOJ 7 Jul 2009 13:00 UTC

Limiting in situ observations indicate aerosol composition 10-12 km in lower ATAL mainly Sulfate + Carbonaceous

COCAMS 2005-2009 element composition (S/1-12 km)

<table>
<thead>
<tr>
<th>Element</th>
<th>C/O</th>
<th>C/S</th>
<th>C/H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sulfate</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Carbonaceous</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Questions: What is the origin of the ATAL? What is it made of? Are there regional climate impacts?

No Fossil Fuel (FF) nor biofuel (BF) emissions from China

Contributions from Indian and Chinese sources, with % contributions (white contours). Model indicates a dominant (>40%) contribution from Indian emissions to ATAL in July, 2008; Chinese emissions (20-30%) remain largely outside the anticyclone in this episode: rest-of-world emissions (not shown) found to contribute <20% to ATAL. These contributions change with transience of the ATAL anticyclone.


T.D.Farlie@nasa.gov, JearPaul.Vernier@nasa.gov, Hongyu.Liu-1@nasa.gov