Goals:

- Update on Radiative Transfer (RT), both in the visible/near IR and the infrared
- Explore broadband adequacy versus Hyperspectral necessity for environmental characterizations (land, ocean, atmosphere)
- Discuss some of the instrument trade-space with respect to applications
- Understand the roles of LEO and GEO for various applications
- Familiarization with tools for interrogating and visualizing hyperspectral data

Questions:

- What are the advantages/disadvantages of Hyperspectral over multispectral data?
  - Bring slides!
- What are the future directions/shortfalls for Hyperspectral radiative transfer?
- How can NOAA best prepare for autonomous instrument synergy?
- What are the future directions/shortfalls for data compression?
4th NOAA Hyperspectral Workshop  
Pyle Center, 702 Langdon Street  
Tuesday Afternoon 17 August 2004

Introduction
1300-1310  Welcome  
Steve Ackerman, CIMSS

1310-1320  Introductory Remarks/Logistics/Agenda  
T. Schmit, NOAA NESDIS & Ed Howard, NOAA

1320-1330  NOAA’s needs for hyper-spectral imaging and sounding  
T. Schmit, NOAA NESDIS

Issues of hyperspectral data in relationship to Radiative Transfer (RT)

1330-1345  IR RT

1345-1400  IR RT (recent updates)  
Larrabee Strow, UMBC

1400-1415  RT of clouds  
T. Greenwald, CIMSS

1415-1430  Discussion  
All

1430-1445  Break

1445-1515  Vis/NearIR RT  
Mike Griffin MIT/LL & A. Heidinger, NOAA NESDIS

Applications of hyperspectral data

1515-1545  Atmosphere Summary + discussion  
Allen Huang, CIMSS

1545-1615  Climate + discussion  
Hsiao-hua Burke, MIT/LL

1615-1645  Tropical Applications  
M. DeMaria, NOAA/NESDIS

1645-1700  Temporal/spectral/spatial  
J. Purdom, CIRA

1700-1715  Closing Discussions for Tuesday  
All

Dinner – Location: Informal in the area
4th NOAA Hyperspectral Workshop
Pyle Center, 702 Langdon Street

Wednesday 18 August 2004

0825-0830  Intro/Logistics  T. Schmit, NOAA NESDIS

Instrument Options

0830-0845  What is HES?  Monica Coakley, MIT/LL
0845-0900  Grating  Richard Baron, JPL
0900-0915  Interferometer  Hank Revercomb, SSEC
0915-0930  Discussions  All

Applications (Continued from Tuesday)

0930-1000  NWP + discussion  Ralph Petersen, CIMSS
1000-1015  Break
1015-1045  Land Summary + discussion  Bob Knuteson, CIMSS
1045-1115  Ocean Summary + discussion  Nick Nalli, QSS Group Inc.
1115-1145  Clouds/Aerosols Summary + discussion  Steve Ackerman, CIMSS
1145-1215  Trace gases + discussion  Larrabee Strow, UMBC
1215-1315  Lunch – Location: Pyle Center

Working Groups

1315-1530  Split into Working Groups
            land/ocean/atmosphere&clouds/climate/trace gases
            What does Hyperspectral add over broadband imagers?

1415-1430  Break

1530-1630  “Report” from each working group
1630-1700  Closing Discussion for Wednesday

Dinner – Location: University Club 803 State Street (5:30 Cash Bar, 6:30 Dinner)
4th NOAA Hyperspectral Workshop  
Pyle Center, 702 Langdon Street  
Thursday 19 August 2004

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>0830-0845</td>
<td>Intro/Logistics</td>
<td>T. Schmit/A. Heidinger, NOAA NESDIS</td>
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**System Strategies**

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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>0845-0900</td>
<td>HES/ABI synergy</td>
<td>T. Schmit, NOAA</td>
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<td>0900-0915</td>
<td>Discussion</td>
<td>All</td>
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**Tools**

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<tr>
<th>Time</th>
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<th>Presenter(s)</th>
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<tbody>
<tr>
<td>0930-0945</td>
<td>Application Analysis Tools / AHABS Demonstration</td>
<td>Mike Griffin MIT/LL</td>
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<tr>
<td>0945-1000</td>
<td>Next generation McIDAS (V)</td>
<td>Tom Whittaker, SSEC</td>
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<td>1000-1015</td>
<td>Break</td>
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<tr>
<td>1015-1030</td>
<td>Application Analysis Tools / “HYDRA”</td>
<td>Kevin Baggett, CIMSS</td>
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<td>1030-1045</td>
<td>VNIR/SWIR compression results</td>
<td>Su May Hsu, MIT LL</td>
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<td>1045-1100</td>
<td>Compression Techniques: HES IR Sounder</td>
<td>B. Huang/CIMSS</td>
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<tr>
<td>1100-1115</td>
<td>Compression Techniques: IR Sounder</td>
<td>W. Blackwell/MIT LL</td>
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<td>1115-1200</td>
<td>Wrap up/future of Workshop(s)</td>
<td>All</td>
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<tr>
<td>1200-1300</td>
<td>Lunch – Location: Pyle Center</td>
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End of workshop