Workshop Objective:
In this workshop we will present research results arising from Navy ONR-funded MURI basic research conducted at UW-Madison. Under MURI we have gained further expertise from SSEC airborne field experiments, SSEC/CIMSS AIRS science team and direct broadcast, and GOES-R/GIFTS Risk Reduction activities. This workshop will showcase the strength that SSEC/CIMSS of UW-Madison has accumulated over 4-plus years of MURI funding in the broad area of hyperspectral sounding, imaging end-to-end processing, and application capabilities.

Workshop Topics:
- Hyperspectral End-to-End Modeling and Simulation
  - Mesoscale NWP models (MM5 and WRF)
  - Sensor measurement simulation
  - Environmental hyperspectral radiance simulation
- Hyperspectral Radiative Transfer Forward Modeling
  - Clear sky gases models
  - Cloudy sky models
  - Particulates models
  - Surface Property models
- Hyperspectral End-to-End Data Processing
  - Sensor calibration/validation
  - Data Compression
  - Multi-sensor collocation
  - Synergetic data processing/utilization
- Hyperspectral Inverse Retrieval Algorithm Development
  - Clear and cloudy sounding profile retrieval
  - Altitude resolved water vapor wind retrieval
  - Cloud detection, clearing, and property retrieval
  - Surface property retrieval
  - Aerosol/dust detection and retrieval
  - Trace gases detection and retrieval
- Hyperspectral Environmental Applications
  - Data Assimilation, forecasting, and nowcasting
  - Aviation safety applications
  - Hazardous event monitoring
  - Air pollution/quality monitoring/forecasting

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