**Hyper-spectral Retrievals from the Infrared Atmospheric Sounding Interferometer (IASI) During the NOAA Aerosol and Ocean Science Expeditions (AEROSE)**

Presenting author: Christopher Spells

Department of Atmospheric and Planetary Sciences, Hampton University

Coauthors: William L. Smith, Sr. (Hampton University); Nichollas R. Nalli (IMSG Inc., NOAA/NESDIS); Vernon R. Morris (Howard University); Everette Joseph (University at Albany-SUNY); James Russell III (Hampton University);

The tropical Atlantic Ocean is a region of significant meteorological and oceanographic interest in terms of atmospheric chemistry and mesoscale-to-synoptic scale dynamic and thermodynamic phenomena. Passive and active remote sensing instruments onboard geostationary and polar orbiting satellites are providing global data, but the unique dynamic and thermodynamic nature of advected Saharan and sub-Saharan air masses over maritime environments provide a unique challenge for the interpretation of these remotely sensed profile data. As a consequence, oceanic research missions are necessary for validation of satellite remote sensors using in-situ measurements. The Aerosol and Ocean Science Expeditions (AEROSE), a series of trans-Atlantic research missions, seeks to resolve the impacts Saharan region aerosols have on passive remote sensors. In this work, a fast physically based Dual-Regression retrieval technique is employed to produce atmospheric profile retrievals over the tropical Atlantic Ocean using radiances from the hyper-spectral Infrared Atmospheric Sounding Interferometer (IASI). Radiosonde temperature and moisture profiles collected during AEROSE are used for validation.