Ground-based studies conducted in Iraq have revealed the presence of potential human pathogens in airborne dust. According to the Environmental Protection Agency (EPA), airborne particulate matter below 2.5μm (PM2.5) can cause long-term damage to the human respiratory system. NASA’s Earth Observing System (EOS) can be used to determine spectral characteristics of dust particles and dust particle sizes. Comparing dust particle size from the Sahara and Arabian Deserts gives insight into the composition and atmospheric transport characteristics of dust from each desert. With the use of NASA SeaWIFS DeepBlue Aerosol, dust particle sizes were estimated using Angström Exponent. Brightness Temperature Difference (BTD) equation was used to determine the area of the dust storm. The Moderate-resolution Imaging Spectroradiometer (MODIS) on Terra satellite was utilized in calculating BTD. Mineral composition of a dust storm that occurred 17 April 2008 near Baghdad was determined using imaging spectrometer data from the JPL Spectral Library and EO-1 Hyperion data. Mineralogy of this dust storm was subsequently compared to that of a dust storm that occurred over the Bodélé Depression in the Sahara Desert on 7 June 2003.

**Abstract**

Determine BTD and BTD vs. Band 31

Determine Crust Index (CI)

Determine spectral signatures of minerals present in a dust storm

Compare particle sizes of the Arabian and Sahara deserts by way of Angström Exponent

Determine visibility by Aerosol Optical Depth (AOD)

**Methodology**

**Study Area**

**Results**

**Conclusions**

**Team Members**

**Project Partners**

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