



## WS03 Satellite Remote Sensing of Aerosols: Data, Tools and Applications

Wed-31 Jul 2019 | 1:30pm to 6:00pm | MR300

*\*Participants will need to bring along their own laptops*

To be led by Dr Pawan Gupta<sup>1</sup> and Dr Robert Levy<sup>2</sup>

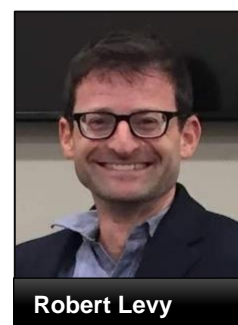
<sup>1</sup>Science & Technology Institute (STI), Universities Space Research Association (USRA), NASA Marshall Space Flight Center (MSFC) <sup>2</sup> NASA Goddard Space Flight Center (GSFC)



Pawan Gupta

Dr Gupta leads air quality training team under NASA's Applied Remote Sensing Training (ARSET) and have been providing online and in-person training workshops all around the world for the past 8 years. Dr Gupta has more than 15 years of experience in satellite aerosol retrieval and application for air quality and climate change research.

Dr Levy is the lead of the Dark-Target (DT) aerosol retrieval team at NASA. He has 20 years of experience with remote sensing on various satellite platforms, including interactions with end-users in both research and applied-science applications. He has led workshops and guest-lectured classes related to these subjects.



Robert Levy

The Moderate Resolution Imaging Spectroradiometer (MODIS) sensors aboard NASA's Earth Observing Satellites (EOS) have been observing the earth-atmosphere system for nearly two decades. Atmospheric aerosols (particulate matter) play an important role in earth radiation budget and contribute to air pollution. Since its launch, the "dark-target" (DT) aerosol retrieval algorithm has been applied to MODIS to retrieve aerosol optical depth (AOD) and other aerosol properties on a global scale. The AOD data product has been extensively used for both climate and air quality applications. More recently, the DT algorithm is being applied to new generation of sensors such as Visible Infrared Imaging Radiometer Suite (VIIRS) on Suomi-NPP, and the Advanced Himawari and Baseline Imagers (AHI and ABI) on Himawari-8 and GOES-R. The application of consistent algorithm on multiple Low Earth Orbiting (LEO) and GEOstationary (GEO) sensors is key for observing aerosols with high temporal and spatial resolution.

The workshop will provide lectures and hands-on exercises. Lectures will be about fundamentals of satellite remote sensing of atmospheric aerosols, the dark target aerosol retrieval method, and best research practices. Hands-on exercises will be geared towards accessing data, reading and mapping the aerosol fields, and validating against ground measurements. All activities will use free or open-source software tools.