Title: MAESTRO: High Speed, Wide Field Microbial Detection using Deep UV spectroscopy
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Abstract (250 words):

The MEASTRO instrument is a recent development that enables sensitive, spatially located, microbial detection using deep UV spectroscopy at a standoff distance up to 5m. This capability stems from prior deep UV fluorescence/Raman standoff instruments for point chemical, biological, and explosives analysis, as well as from planetary science in the form of the SHERLOC instrument on the Mars 2020/Perseverance Rover, a deep UV fluorescence/Raman mapping robotic arm-mounted instrument looking for signs of life on Mars. The MAESTRO instrument leverages these detection capabilities to enable microbial detection on environmental/natural surfaces with high-speed mapping rates with map areas >1m^2. This talk will discuss the fundamentals of the methodology for detection, the achieved sensitivity, and the analytical approach used to detect and differentiate microbial hazards from the background.