

The Field Robotics Center

Seminar Series

Friday, 16th September

NSH 1507 1:00 – 2:00pm

Lunch will be served



Dr. David R. Thompson
Jet Propulsion Laboratory
California Institute of Technology

Onboard Data Analysis for the Planetary Instrument for X-Ray Lithography

Abstract: Imaging spectrometers are invaluable instruments for robotic science exploration, enabling quantitative maps of physical and chemical properties at high spatial resolution. This is particularly valuable in remote missions to other planetary bodies like Mars. The PIXL instrument on the Mars2020 rover will deploy an arm-mounted X-Ray fluorescence spectrometer to map chemical composition at sub-millimeter scales. Its high resolution places dramatic new demands on instrument placement accuracy and measurement time. We address these challenges using novel onboard data analysis strategies inspired by FRC science autonomy research.

Speaker Bio: David R. Thompson is an alumnus of the Field Robotics Center. He is currently a technical group lead in the Imaging Spectroscopy group at the NASA Jet Propulsion Laboratory, and Investigation Scientist for the Airborne Visible Infrared Imaging Spectrometer (AVIRIS) project. Other roles include science software lead for the NEAScout mission and autonomy software lead for the PIXL instrument. He is recipient of the NASA Early Career Achievement Medal and the JPL Lew Allen Award.



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