



The University of Texas at San Antonio™

DATE:
Friday,
October 29, 2021

TIME:
11:00am-12:00pm
CDT

LOCATION:
BSE 2.102



NASA MIRO CAMEE

CENTER FOR ADVANCED MEASUREMENTS IN EXTREME ENVIRONMENTS

PRESENTS:

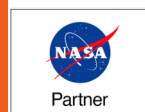
Dr. Daniel Pineda, Professor in the Department of Mechanical Engineering at the University of Texas at San Antonio. Dr. Whittington is a CAMEE Early Career Research Fellow.

Title: Laser absorption spectroscopy for quantitative measurements in extreme environments

Abstract:

Chemical reactions at high-pressure, supercritical, and detonation conditions are desired to increase energy conversion efficiency in the power generation and transportation sectors. However, diagnostic capability in these regimes has been historically poor. This talk describes novel laser absorption spectroscopy techniques developed for quantitative measurements of gas temperature and concentration in high-pressure and high-temperature reacting flows relevant to rocket combustion. The techniques are deployed in field measurement campaigns at the Air Force Research Laboratory to obtain quantitative measurements at pressures up to 105 bar and measurement rates exceeding 1 MHz.

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