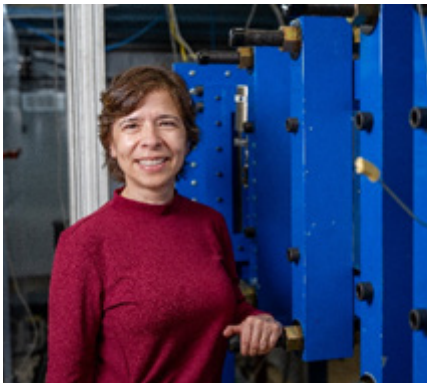


AAE FALL COLLOQUIUM SERIES

Texas A&M new venture in Fort Worth and advances in understanding the origin of heat streaks on hypersonic canonical geometries

**WEDNESDAY OCTOBER 22ND, 2025
2:30PM-3:20PM RHPH 172**



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Abstract:

In this seminar I will briefly update the audience on the new campus from Texas A&M in Fort Worth. Then, a recent area of my research will be discussed. In the last decade, there have been observations of center heat streaks on swept geometries like HiFIRE5. The observations have been numerical, experimental, and in flight. The exact origin of the heat streaks has not been studied independently. It is likely that the heat streaks are a combination of factors like the geometry itself (swept) and shock curvature. My research group has created a set of swept wedges and analyzed them numerically and experimentally. The team is aiming to measure and isolate the effects of shock curvature, swept geometry, and natural instability modes on the heat streaks. The ongoing results will be discussed.

Biography

Ivett A. Leyva became the Associate Dean for Research at the new Texas A&M Fort Worth campus in August 2025. She is tasked with starting a new engineering research enterprise in this new campus. She was head of the Department of Aerospace Engineering from 2021 to 2025. Previously, she worked at the Air Force for 15 years. She was the program officer for Hypersonic Aerodynamics at the Air Force Office of Scientific Research, Air Force Research Lab (AFRL) and prior to that she was a researcher at the AFRL Rocket Lab working on liquid rocket instabilities. Her technical expertise is in hypersonic aerodynamics and liquid rocket engines. Ivett holds a bachelor's, master's and doctoral degree from Caltech. Her Ph.D. was in Aeronautics. Ivett has six patents and has authored numerous papers and two book chapters. She is a fellow of the American Institute for Aeronautics and Astronautics and the Air Force Research Laboratory, a National Associate of the National Research Council of the National Academies, and a recipient of a Civilian Achievement Medal and two meritorious Civilian Service Awards and Medals from the Air Force.