Propulsion research for eVTOL

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Tim Krantz has been a research engineer at the NASA Glenn Research Center since 1987. He has researched many topics for aviation propulsion and spacecraft mechanisms, with an emphasis on helicopter gearbox technologies, tribology of mechanisms for spacecraft, and most recently electric motor reliability. His present roles at NASA includes member of the NASA Engineering Safety Center's Mechanical Systems Discipline Team, Technical Lead for the Revolutionary Vertical Lift Technology Project, and primary investigator for gearing experiments supporting the James Webb Space Telescope. Dr. Krantz is a Fellow of the American Society of Mechanical Engineers and an Honorary Member of the Smart Vehicle Concepts Center Industrial Advisory Board.

Abstract

NASA's vision for Advanced Air Mobility is to help emerging aviation markets to develop a safe air transportation system that moves people and cargo between places previously not served or underserved by aviation – local, regional, intraregional, urban – using revolutionary new aircraft that are only just now becoming possible. This talk focuses on a subset of that vision, passenger-carrying vehicles having vertical take-off and landing capability. The vertical take-off and landing requirements present unique technical challenges. Hundreds of vehicle concepts have been proposed that feature electric or hybrid-electric based propulsion (eVTOL). A particularly critical eVTOL challenge is to be as safe as existing commercial air travel. The new mission, new propulsion system concepts, safety-criticality of propulsion for vertical take-off and lift operations, and the lack of data and established procedures for certification presents many research challenges and opportunities. This talk discusses the topic from the viewpoint of a propulsion researcher.

Hosted by Prof. Marcelo Dapino

Thursday, 9 September 2021
12:00pm-1pm
Scott Lab E100
Lunch presentation

Zoom link to be provided to remote guests

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