

CALL FOR PAPERS

VFS Transformative Vertical Flight 2022

Aeromechanics for Advanced Vertical Flight Technical Meeting

Doubletree Hilton, San Jose, California

Jan. 25–27, 2022

Sponsored by the San Francisco Bay Area Chapter

The 2022 VFS Aeromechanics for Advanced Vertical Flight Technical Meeting provides a forum on emerging aeromechanics challenges and solution methods for advanced vertical takeoff and landing (VTOL) aircraft. Aeromechanics encompasses the technical disciplines of dynamics, aerodynamics, acoustics and flight mechanics, all of which are strong drivers in the design process. Papers are invited to advance aeromechanics tools, understanding and technologies to enable advanced VTOL/rotorcraft design and capabilities (high speed, planetary, extended range, hover efficiency, air mobility, and hydrogen fuel cell) and to reduce development risks. The meeting is due to take place in-person; however, VFS will continue to monitor the pandemic to ensure an in-person event is safe, but will move to a virtual or hybrid event if necessary.

General Chair: **Dr. Colin Theodore**, NASA Ames Research Center: colin.theodore@nasa.gov, 650-604-1180

Technical Chair: **Dr. Buvana Jayaraman**, U.S. Army Technology Development Directorate (CCDC AvMC): aeromech2022@sfbac.vtol.org, 650-604-1449

Topics: Papers are invited in all areas related to rotorcraft/VTOL aeromechanics, including both manned and unmanned vertical flight aircraft. Papers describing design challenges of electric VTOL for advanced and urban air mobility (AAM/UAM), and planetary rotorcraft are sought. Analytical papers may range from basic aerodynamic flows and structural dynamics to comprehensive analyses. Experimental papers may span wind-tunnel tests, flight-test and evaluation programs as well as ground-based

flight simulations. Test, evaluation and validation studies that improve aeromechanics understanding and methods are encouraged, including vibratory hub loads (measurement accuracy), aerodynamic flows, aeroelastic stability (analysis speed/accuracy), aeroacoustics, and cutting-edge data analysis. Advanced aeromechanics design/analysis tools and workflows are sought for improved accuracy and speed, including the entire “CAD-to-understanding” timeline. Automation, digital twins for aeromechanics, machine learning, and multidisciplinary design optimization are also of interest. Papers are also sought on hydrogen-powered aircraft and reviews of state-of-the-art in hydrogen production, supply and storage.

Abstract Submittal: Abstracts must be written in English and not exceed five (5) pages including background, approach, key results, conclusions, and sample supporting figures. The approach and results should be presented in sufficient detail to convey the quality, scope, significance and current status of the work that will be described in the final paper. Please submit abstracts by email in PDF file format by **July 16, 2021**, to the Technical Chair, **Dr. Buvana Jayaraman**. Please include paper title, author(s), affiliation(s), and contact information in the email.

Completed Papers: Authors will be notified of final selection by **Aug. 17, 2021**. Presentations will be given in an open forum, and all papers will be digitally published in the meeting proceedings. Final papers in electronic format are due by **Dec. 17, 2021**. A “no paper, no podium” policy will be observed for this meeting. The author is responsible for any necessary clearances and approvals. All questions should be directed to the Technical Chair.