

## CALL FOR PAPERS

# VFS Transformative Vertical Flight 2020

## Aeromechanics for Advanced Vertical Flight Technical Meeting

Doubletree Hilton, San Jose, California

Jan. 21–23, 2020

Sponsored by the San Francisco Bay Area Chapter of VFS

The 2020 VFS Aeromechanics for Advanced Vertical Flight Technical Meeting provides a forum on emerging aeromechanics challenges and solution methods for future 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 capabilities (high speed, extended range, hover efficiency, and low maintenance) and to reduce development risks.

General Chair: **Dr. Colin Theodore**, NASA Ames Research Center:

650-604-1180, [colin.theodore@nasa.gov](mailto:colin.theodore@nasa.gov)

Technical Chair: **Dr. Mark V. Fulton**, U.S. Army Aviation Development Dir. (CCDC AvMC):

650- 604-0102, [mark.v.fulton.civ@mail.mil](mailto:mark.v.fulton.civ@mail.mil)

**Topics** Papers are invited in all areas related to rotorcraft aeromechanics, including both manned and unmanned vertical lift aerial vehicles, both military and commercial. Papers describing nascent aeromechanics methods and technologies are encouraged. Papers that include analytical developments, experimental studies, and correlation/validation efforts are sought. Analytical papers may range from basic aerodynamic flows and structural dynamics to comprehensive analyses and high-fidelity computational methods. Experimental papers may span model- to full-scale wind-tunnel and flight-test programs as well as ground-based flight simulations. Test and evaluation studies that improve aeromechanics understanding and

methods are encouraged, including vibratory hub loads (measurement accuracy), aerodynamic flows and pressures, aeroelastic stability (analysis speed/accuracy), and modern data analysis. Improved 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, and multidisciplinary design optimization are also of interest. Papers on rotor loads, vibration, interactional aerodynamics, and performance are encouraged.

**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 include 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 **Aug. 19, 2019**, to the Technical Chair: **Dr. Mark V. Fulton**, [mark.v.fulton.civ@mail.mil](mailto:mark.v.fulton.civ@mail.mil). Please include paper title, author(s), affiliation(s), and contact information in the email.

**Completed Papers** Authors will be notified of final selection in September. 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 **December 20, 2019**. 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.

## CALL FOR PAPERS

Website: [vtol.org/aeromechanics](http://vtol.org/aeromechanics)

# VFS Transformative Vertical Flight 2020

## International Powered Lift Conference 2020 & 7th Annual Electric VTOL Symposium

Doubletree Hilton, San Jose, California  
Jan. 21–23, 2020

Sponsored by the San Francisco Bay Area Chapter of VFS

The International Powered Lift Conference (IPLC) is the premier event for engineers, technologists and managers to discuss the latest developments in jet, prop and rotor Vertical and/or Short Take-Off and Landing (V/STOL) aircraft research, concepts and programs. It is the only event focused on the technologies, promise and progress of powered lift systems, with applications ranging from advanced rotorcraft to jet-borne vertical flight to electric VTOL to efficient short take-off and landing (ESTOL) aircraft.

IPLC 2020 and the Annual eVTOL Symposium will be hosted by Vertical Flight Society at the Doubletree Hilton on Jan. 21-23, 2020 in San Jose, CA as part of Transformative 2020. The conference is co-sponsored by the American Institute of Aeronautics and Astronautics (AIAA), SAE Aerospace and the Royal Aeronautical Society (RAeS),

IPLC 2020 will focus on three primary thrusts: advanced rotorcraft, jet-lift concepts and technologies, and recent progress in electric propulsion applications. The IPLC planning committee is seeking abstracts for the following topics, as well as abstracts on other topics related to the scope of this conference:

- Advanced Rotorcraft Concepts
- Applications and Propulsion Concepts for V/STOL UAS
- Ducted Fan Powered Lift Technologies
- Electric/Hybrid-Electric Propulsion
- Control Technologies
- ESTOL, STOL and V/STOL Concepts and Applications
- Integrated Flight & Propulsion Control
- JSF and Lift-Systems Technologies
- Jet-Induced Aerodynamic Effects
- Vertical Flight Interaction Technologies
- V/STOL Flight Testing Experiences, Pilot Reports and Carrier Sea Trials
- V/STOL Technologies – Performance, Testing, and operational issues
- History & Lessons Learned

The conference Technical Chair is **Mr. Michael Yu**, Continuum Dynamics, Inc.:  
609-538-0444 x115, [michael@continuum-dynamics.com](mailto:michael@continuum-dynamics.com)

**Instructions to Authors:** Authors are requested to contribute both a half hour presentation at the conference, and a written paper for the proceedings. Abstracts (in English) should contain between 300 – 500 words and include figures and results. Abstracts and papers should be unclassified, suitable for open proceedings, presentation and discussion. Scientific papers should include the maturity, validity of the context, the viability of the approach and the integrity of the results. Abstracts should discuss the application and exploitation of results. Please submit abstracts by email in PDF file format by **August 19, 2019**, to the Technical Chair: **Mr. Michael Yu**, [michael@continuum-dynamics.com](mailto:michael@continuum-dynamics.com). Authors will be notified of final selection in September. Final papers in electronic format are due by **December 20, 2019**. A “no paper, no podium” policy will be observed for this meeting.