

**1<sup>st</sup> AIAA**

# Stability and Control Prediction Workshop

**Sponsored by the  
Applied Aerodynamics TC**

**2-Day Workshop**

**AIAA SciTech 2021  
Nashville, Tennessee USA**

**January 9-10 2021**

**Send inquiries to  
[aiaascpw@gmail.com](mailto:aiaascpw@gmail.com)**

## Stability and Control Prediction Workshop I

### General Objectives

- Establish best practices for the prediction of S&C derivatives with RANS or DES – based CFD and to assess the limitations of these CFD methods when those best practices are applied
- Provide an impartial forum for evaluating the effectiveness of existing computer codes and modeling techniques using RANS and DES solvers
- Identify areas in need of additional research and development

### Focus of Workshop I

The inaugural workshop will use the ONERA version of the NASA/Boeing Common Research Model (CRM). It includes the wing, body and horizontal tail as well as a vertical tail designed by ONERA. This model has been tested in a wind tunnel with longitudinal test results having been published. There also exists unpublished data for this model at small sideslip angles. In this workshop, participant predictions of yawing moment, rolling moment and side force at sideslip will be compared to this unpublished data. Optionally, participants will predict the effects of the wind tunnel support sting on these moments and force.

## Stability and Control Prediction Workshop I

### Key Dates

Notice of intent to participate	Feb 1, 2020
Release of Geometry	Mar 1, 2020
Release of Standard Grids	May 1, 2020
Confirm intent to Participate	Aug 1, 2020
Abstract Deadline	Oct 1, 2020
Data Submittal Deadline	Nov 1, 2020

Workshop registration will be handled through normal AIAA procedures.

Workshop presentations will not be official AIAA papers. However, a special session on stability and control prediction is planned for Aviation 2021 or SciTech 2022.

**Send notice of intent and questions to  
[aiaascpw@gmail.com](mailto:aiaascpw@gmail.com)**



## Test Cases

### Required

**Case 1:** 2D Code Verification Study

**Case 2:** CRM in Sideslip Grid Convergence Study (single condition on a family of grids)

**Case 3:** CRM Static Lateral Directional Stability (3 solutions on 1 grid)

### Optional

**Case 4:** Wind Tunnel Sting Increments

**Case 5:** Participant Generated Grids

Grids for all cases will be provided, but participants are encouraged to build their own grids using 'best practice' techniques. IGES and STP models are available for grid construction. Grid size requirements will be available on the workshop website. All grids used for results presented at the workshop must be submitted to the SCPW Organizing Committee to be made available to all interested parties.

## General Information

- This workshop is open to participants worldwide. Efforts will be made to ensure representation from all areas of industry, academia and government laboratories.
- Participation in the prediction studies is not required to attend the workshop. Everyone is welcome!
- Open forums will be included in the workshop to discuss the solutions and modeling techniques.
- Results will be made available after the workshop in an AIAA paper.
- A nominal registration fee will be required for attendance.
- AIAA membership is not required.



## Organizing Committee

Tom Chyczewski

*Penn State Applied Research Lab*

Aurelia Cartieri

*ONERA*

Mike Foster

*Gulfstream Aerospace Corporation*

Brad Green

*Naval Air Systems Command*

Steve Klausmeyer

*Textron Aviation*

Andrew Lofthouse

*USAF Flight Mechanics Branch*

Walt Silva

*NASA Langley Research Center*

Will Thomas

*Air Force Life Cycle Management Center*

