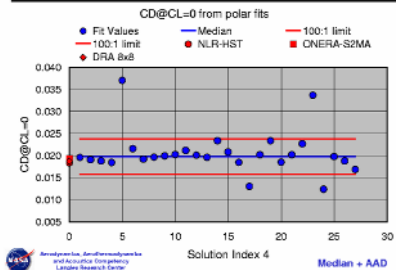


## CFD Drag Prediction Workshop

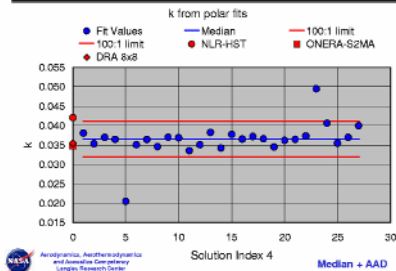
### Objectives

- To build on the success of past AIAA Drag Prediction Workshops.
- To assess the state-of-the-art computational methods as practical aerodynamic tools for aircraft force and moment prediction of industry relevant geometries.
- To provide an impartial forum for evaluating the effectiveness of existing computer codes and modeling techniques using Navier-Stokes solvers.
- To identify areas needing additional research and development.

Drag Polar Fits,  $M=0.75$  DPW



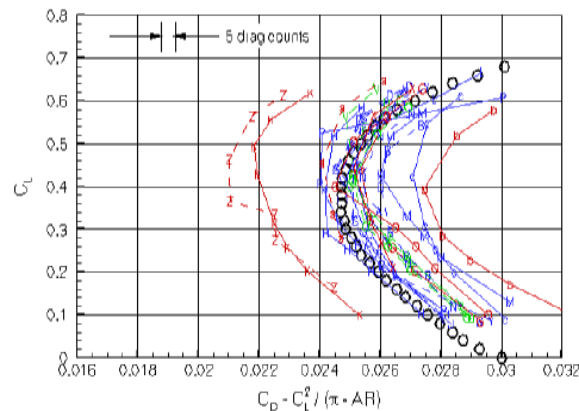
Drag Polar Fits,  $M=0.75$  DPW



## CFD Drag Prediction Workshop

### 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 drag 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 a report and on the DPW website.
- A nominal registration fee will be required for attendance.
- AIAA membership is not required.



## CFD Drag Prediction Workshop

### Test Cases

#### Required Case 1

1. DLR-F6 and FX2B configurations
2. Single Point Grid Sensitivity Study  
Mach = 0.75  
 $C_L = 0.500 \pm 0.001$
3. Drag Polar  
Mach = 0.75  
 $\alpha$  (Deg) =  $-3^\circ, -2^\circ, -1.5^\circ, -1^\circ, 0^\circ, 1^\circ, 1.5^\circ$

#### Required Case 2

1. DPW-W1 and DPW-W2
2. TBD

Test cases must be run for either Required Case 1 or Required Case 2; participants can do both if they desire. Upon acceptance of the entry request, files will be provided for Point-Matched Structured-Grid, Over-Set Structured-Grid and Unstructured Grids.

All participants are encouraged to build their own grids using 'best practice' techniques. An IGES model and CATIA model will be made available for grid construction. Grids submitted for consideration as baseline grids must include two additional grids for the Grid Sensitivity Analysis. All grids used for results presented at the workshop must be submitted to the DPW Organizing Committee to be made available to all interested parties. Results and grids will be published electronically on the DPW website.

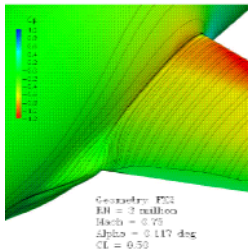
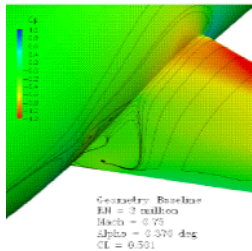
<http://aaac.larc.nasa.gov/tsab/cfdlarc/aiaa-dpw/>

## CFD Drag Prediction Workshop

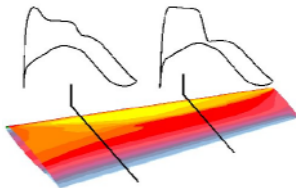
### Focus

The focus of this workshop will be on 'blind' drag prediction accuracy; *a priori* experimental data will not be available for comparison. In addition to the DLR-F6 and FX2B wing-body transport models, wing-only models, DPW-W1 and -W2, will be included to encourage academic participation and allow more exhaustive grid convergence studies.

The FX2B configuration is the DLR-F6 wing-body transport configuration with an added fairing that substantially reduces boundary layer separation at the wing-body juncture.



DPW-W1 and -W2 are two similar modern, transonic wing-only configurations suitable for grid convergence and drag increment studies.



A statistical framework will be used to assess the results.

## CFD Drag Prediction Workshop

### Committee

**John Vassberg**

**Ed Tinoco**

**Mori Mani**

The Boeing Company

**Bernhard Eisfeld**

**Olaf Brodersen**

DLR

**Dimitri Mavriplis**

University of Wyoming

**Rich Wahls**

**Joe Morrison**

NASA Langley Research Center

**Tom Zickuhr**

**Kelly Laflin**

Cessna Aircraft Company

### Dates

Check the DPW website for additional information and updates.

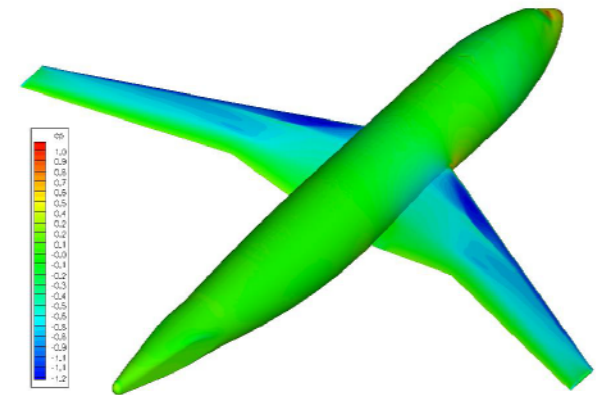
Geometries Available	July 31, 2005
Grid Submissions	October 7, 2005
Grids Available	November 4, 2005
Abstracts Due	January 20, 2006
Acceptance Notification	February 3, 2006
<b>Registration</b>	<b>May 8, 2006</b>
Data Submittal	April 28, 2006
Workshop	June 3-4, 2006

Workshop presentations will not be official AIAA papers; however, several participants will be invited to support a special session on drag prediction to be held during the AIAA Aerospace Sciences Meeting, January 2007.

## 3<sup>rd</sup> AIAA CFD Drag Prediction Workshop

Sponsored  
by the  
Applied Aerodynamics TC

2-Day Workshop  
Preceding  
25<sup>th</sup> APA Conference  
San Francisco, CA  
June 3-4, 2006



For more information  
and results from past workshops,  
visit the DPW website at:

[http://aaac.larc.nasa.gov/tsab/  
cfdlarc/aiaa-dpw/](http://aaac.larc.nasa.gov/tsab/cfdlarc/aiaa-dpw/)

or send email to:

[dpw@cessna.textron.com](mailto:dpw@cessna.textron.com)