

3rd AIAA CFD Drag Prediction Workshop

Opening Remarks

John Vassberg

24th Applied Aerodynamic Conference
San Francisco, CA
3-4 June, 2006

3rd AIAA CFD Drag Prediction Workshop

Organizing Committee

Tom Zickuhr

Kelly Laflin

Cessna Aircraft

Rich Wahls

Joe Morrison

NASA

Dimitri Mavriplis

U. of Wyoming

Olaf Brodersen

Bernhard Eisfeld

DLR

John Vassberg

Ed Tinoco

Mori Mani

The Boeing Company

3rd AIAA CFD Drag Prediction Workshop

DPW-III Objectives

- Provide Impartial Forum To Evaluate RANS Solvers
- Identify Areas Needing Research & Development
- Conduct Blind Test of State-of-the-Art CFD Methods
 - Follow-Up Wind-Tunnel Test After Workshop
- Study DPW-II Grid-Convergence Issues
 - Test Hypothesis that Issues are Related to Separation
- Document Results
 - Available on DPW-III Website After Workshop
 - AIAA Papers for Reno 2007
- Representation: Industry, Academia & Government Labs

3rd AIAA CFD Drag Prediction Workshop

Participation Demographics

- Total Participants: 15 (WB) / 10 (W)
- USA: 67% , Europe: 21% , Asia: 13%
- Industry: 54% , Gov't Labs: 33% , Academia: 13%
- Structured: 46% , Mixed-Element: 50% , Tetrahedra: 13%
 - Some Participants Submitted Multiple Grid Types
- Returning From DPW-II: 54% , New To DPW-III: 46%

3rd AIAA CFD Drag Prediction Workshop

Case 1: DLR-F6 Wing-Body

Case 1: WB Geometry w/ & w/o FX2B Fairing

Single Point Grid Sensitivity Study on Three Grids

- Mach = 0.75 , $C_L = 0.5$, Re = 5M

Drag Polar on Medium Grid

- Mach = 0.75 , Re = 5M
- Alpha = -3, -2, -1, -0.5, 0, 0.5, 1, 1.5 (deg)

3rd AIAA CFD Drag Prediction Workshop

Case 2: DPW Wing-Only

Case 2: DPW-W1 & DPW-W2 Geometries

Single Point Grid Sensitivity Study on Four Grids

- Mach = 0.76 , Alpha = 0.5 deg , Re = 5M

Drag Polar on Medium Grid

- Mach = 0.76 , Re = 5M
- Alpha = -1, 0, 0.5, 1, 1.5, 2, 2.5, 3 (deg)

3rd AIAA CFD Drag Prediction Workshop

Agenda

Saturday, 3 June, 2006 (7:00-4:45)

- Overviews: Geometry, Grid, Test Status
- Participant Presentations (Sessions 2-5)
- Summary of CFD Results & Statistics
- Open Discussion

Sunday, 4 June, 2006 (7:45-3:45)

- Participant Presentations (Sessions 7-8)
- Summary of CFD Results & Statistics
- Open Discussion & Next Steps: Reno '07