Cessna
A Textron Company

3rd AIAA CFD Drag Prediction Workshop

DPW-W1/W2

Cessna NSU3D Results

Tom Zickuhr

Grid Family Generated with VGRID

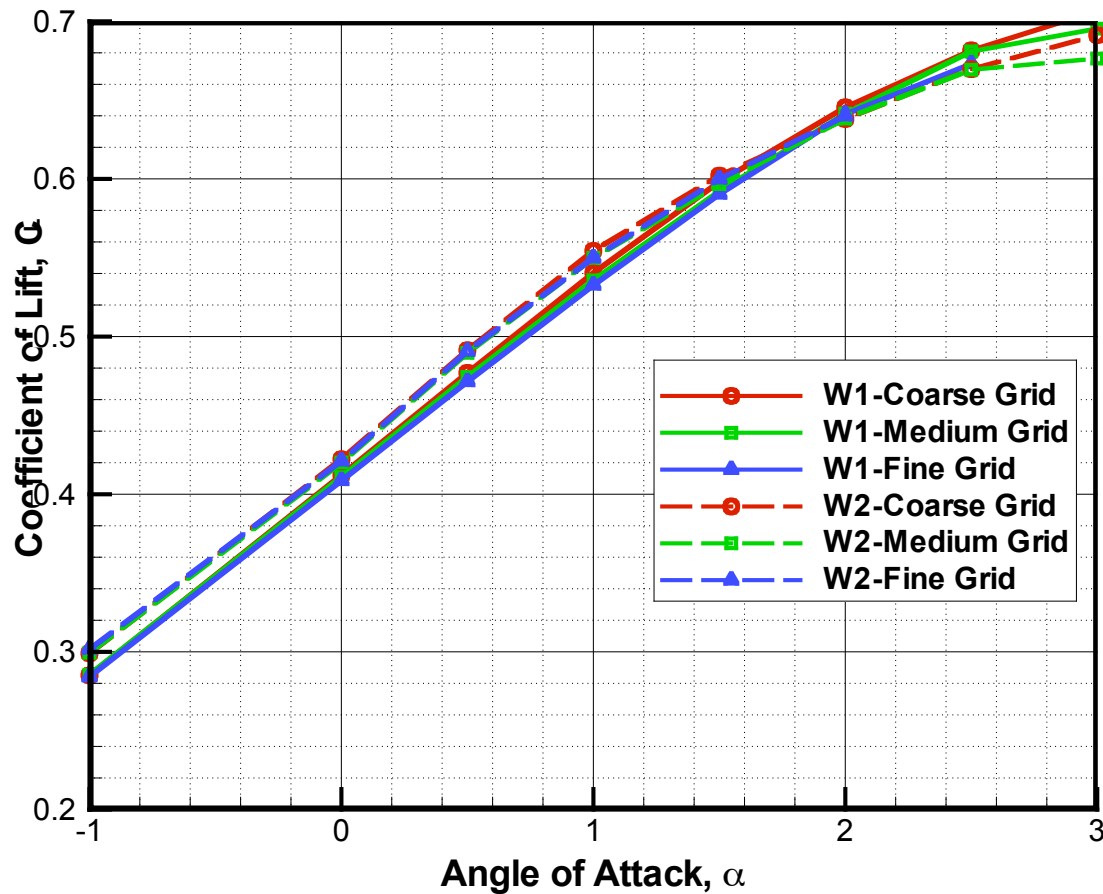|	W1 Surface Pts	W2 Surface Pts
#1 Coarse	35270	33993
#2 Medium	70449	67138
#3 Fine	139768	134164
#4 Very Fine	236291	227109

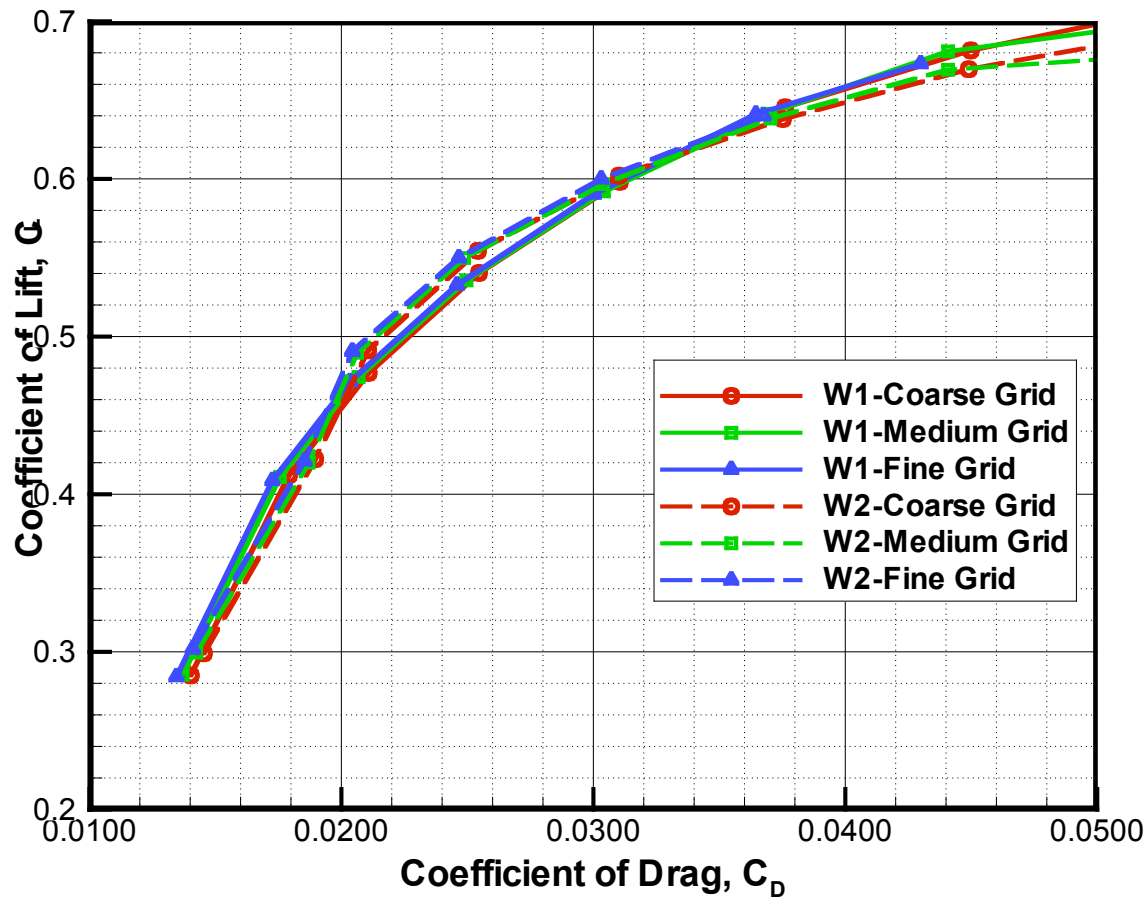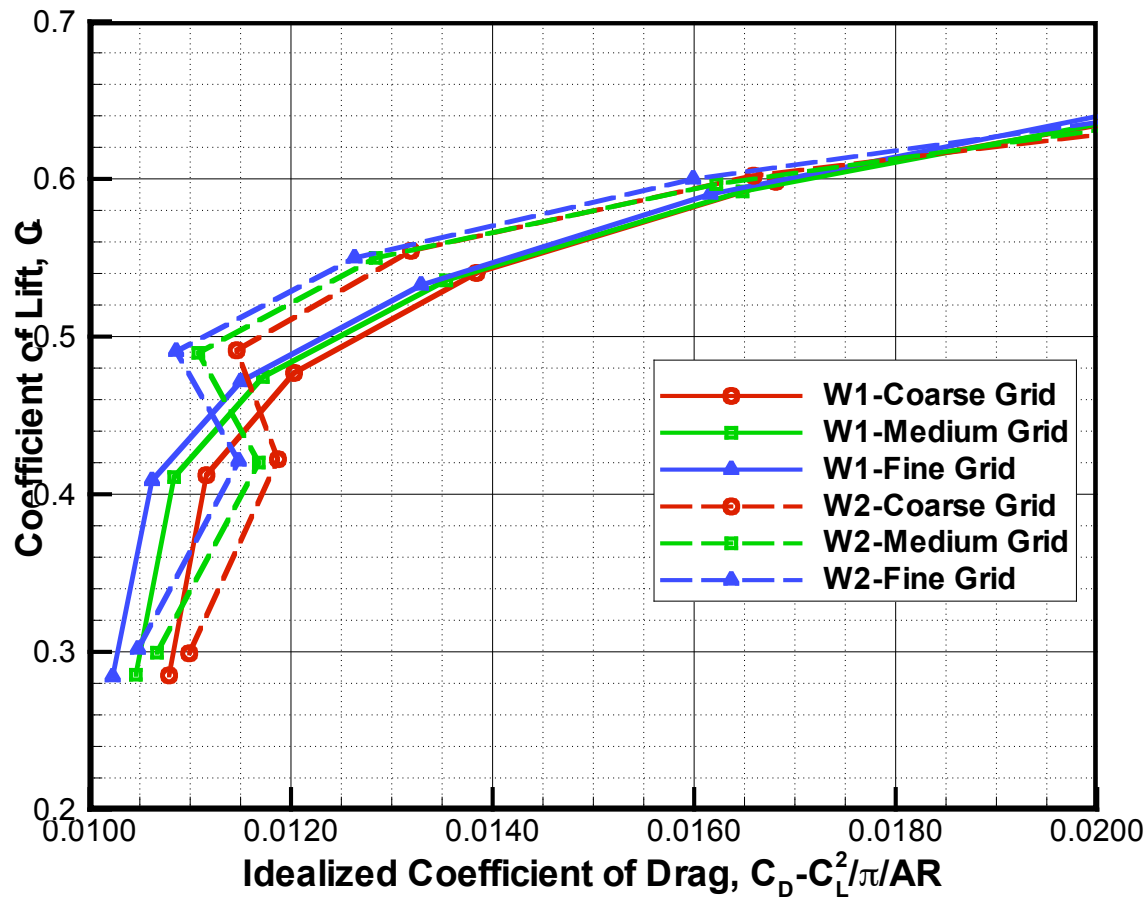|	W1 Volume Pts	W2 Volume Pts
#1 Coarse	983633	947409
#2 Medium	2417082	2325884
#3 Fine	6138245	5963713
#4 Very Fine	12748678	12419567

Grid Convergence for Fixed Alpha
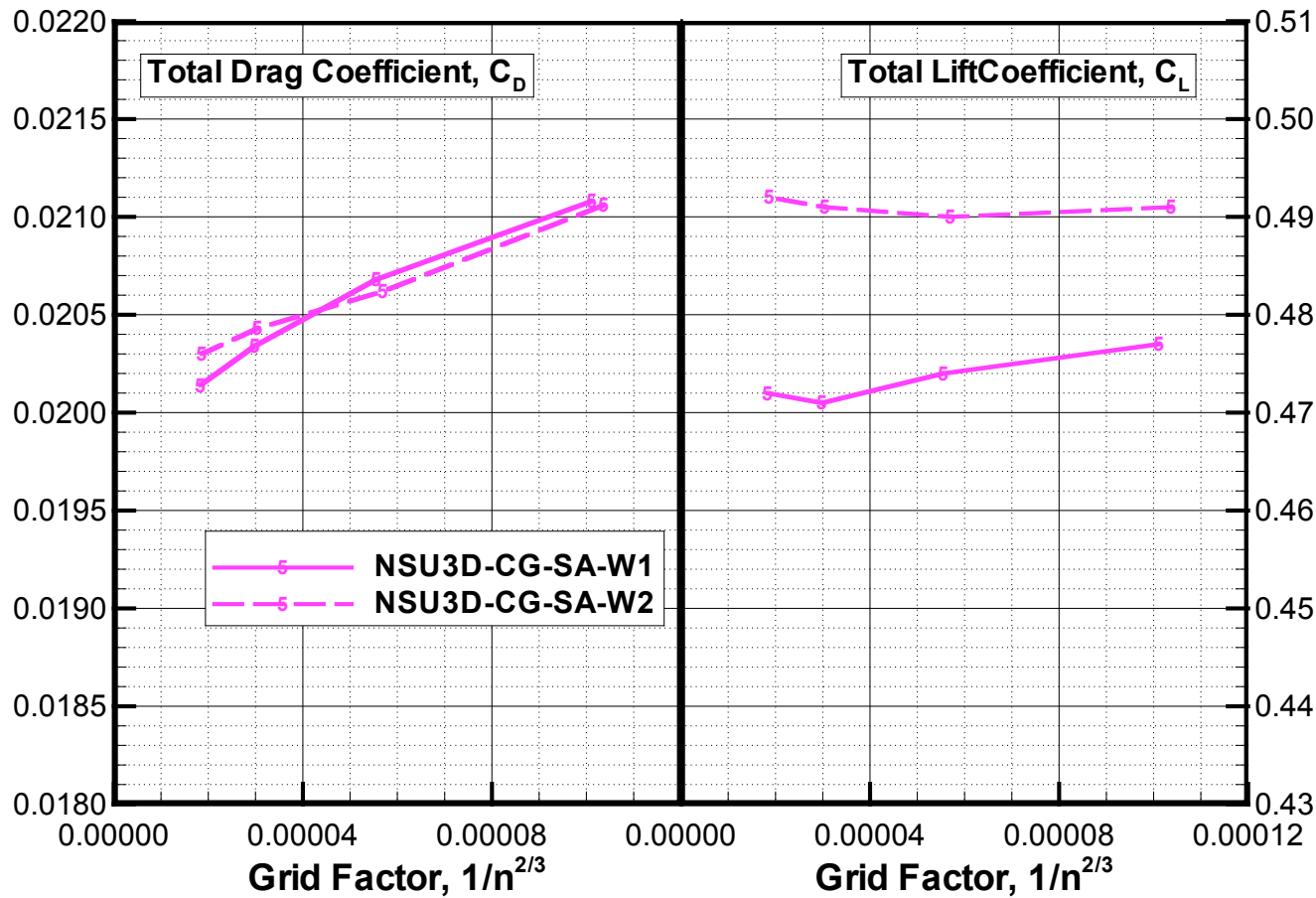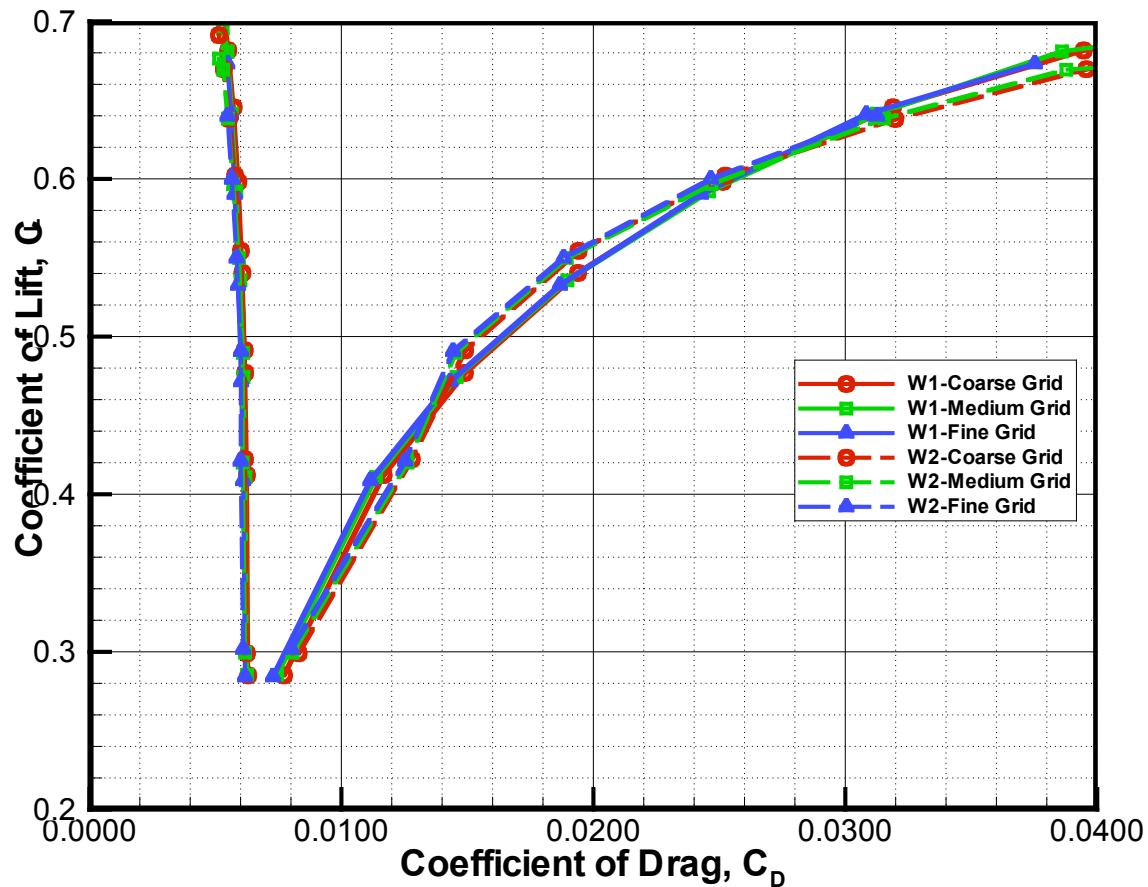
Lift Curves for Three Grids
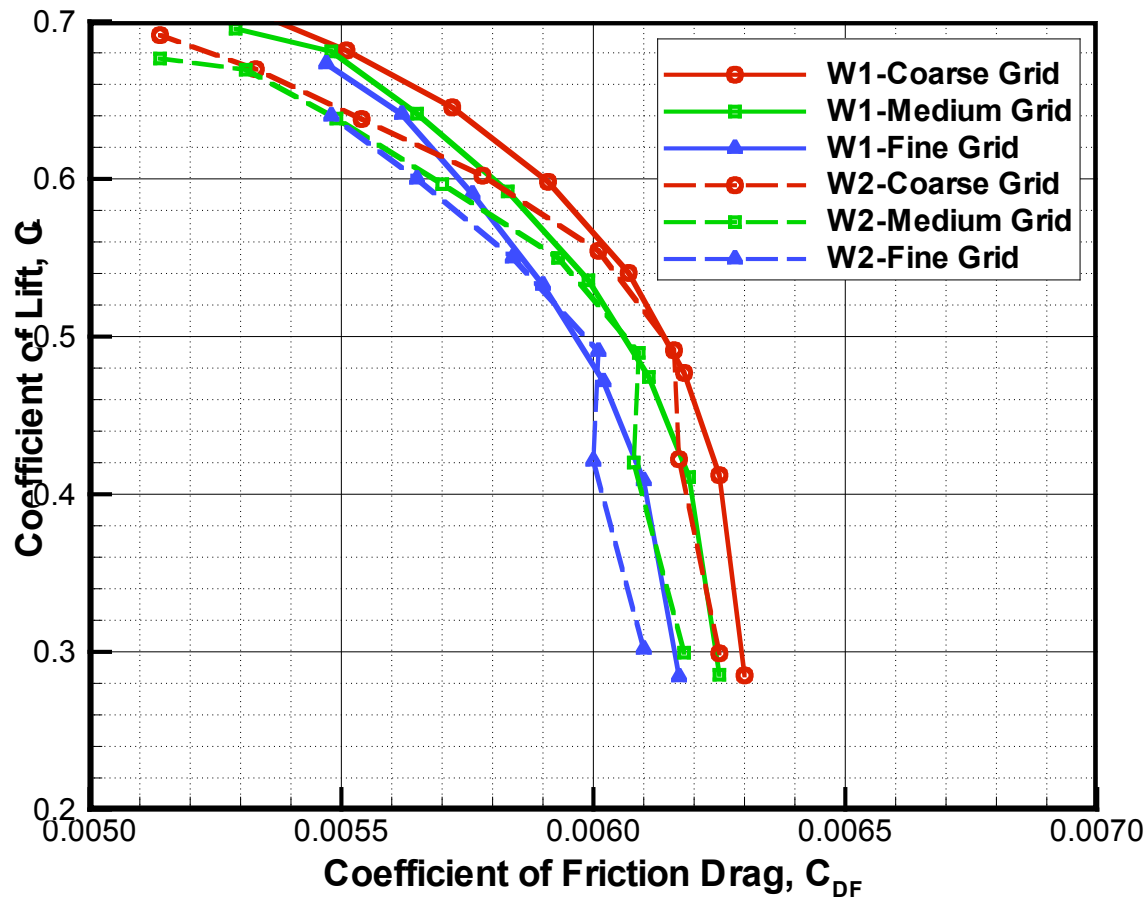
Drag Polars for Three Grids

Idealized Drag Polars for Three Grids
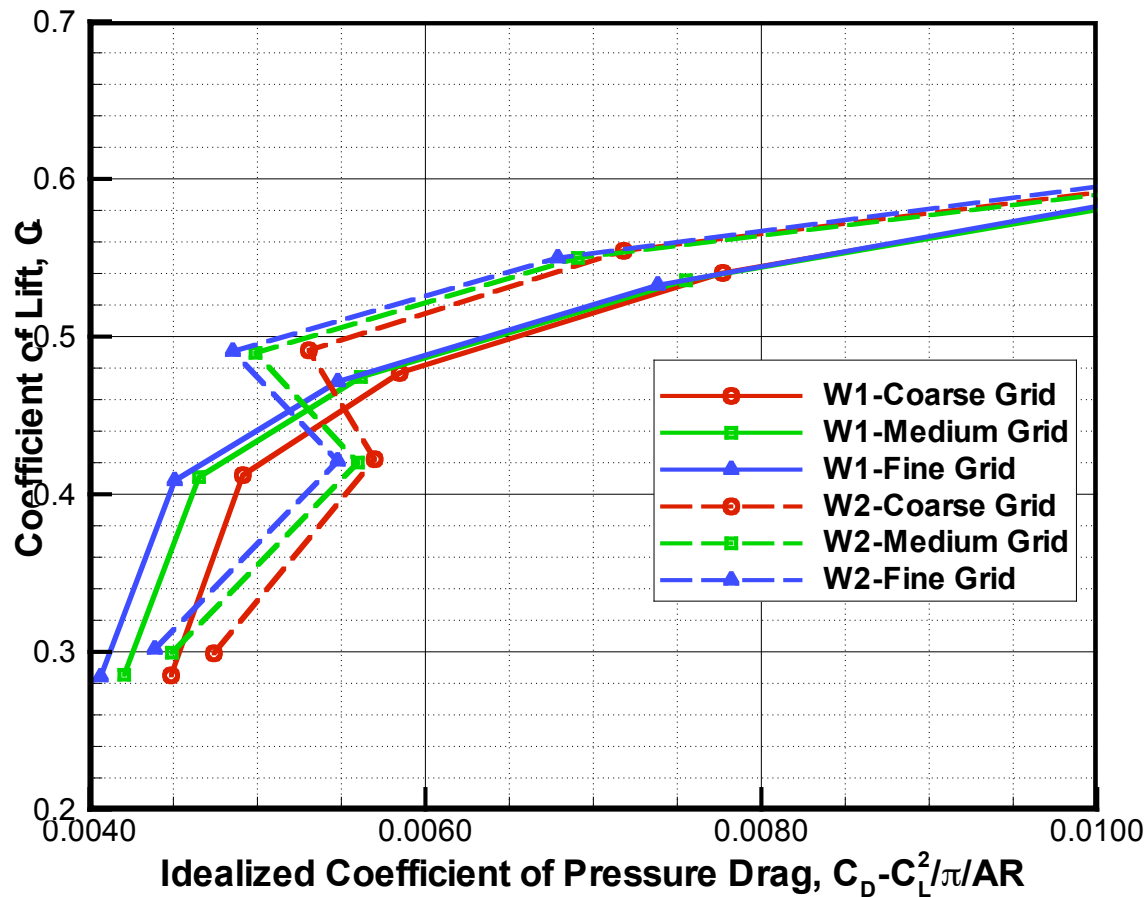
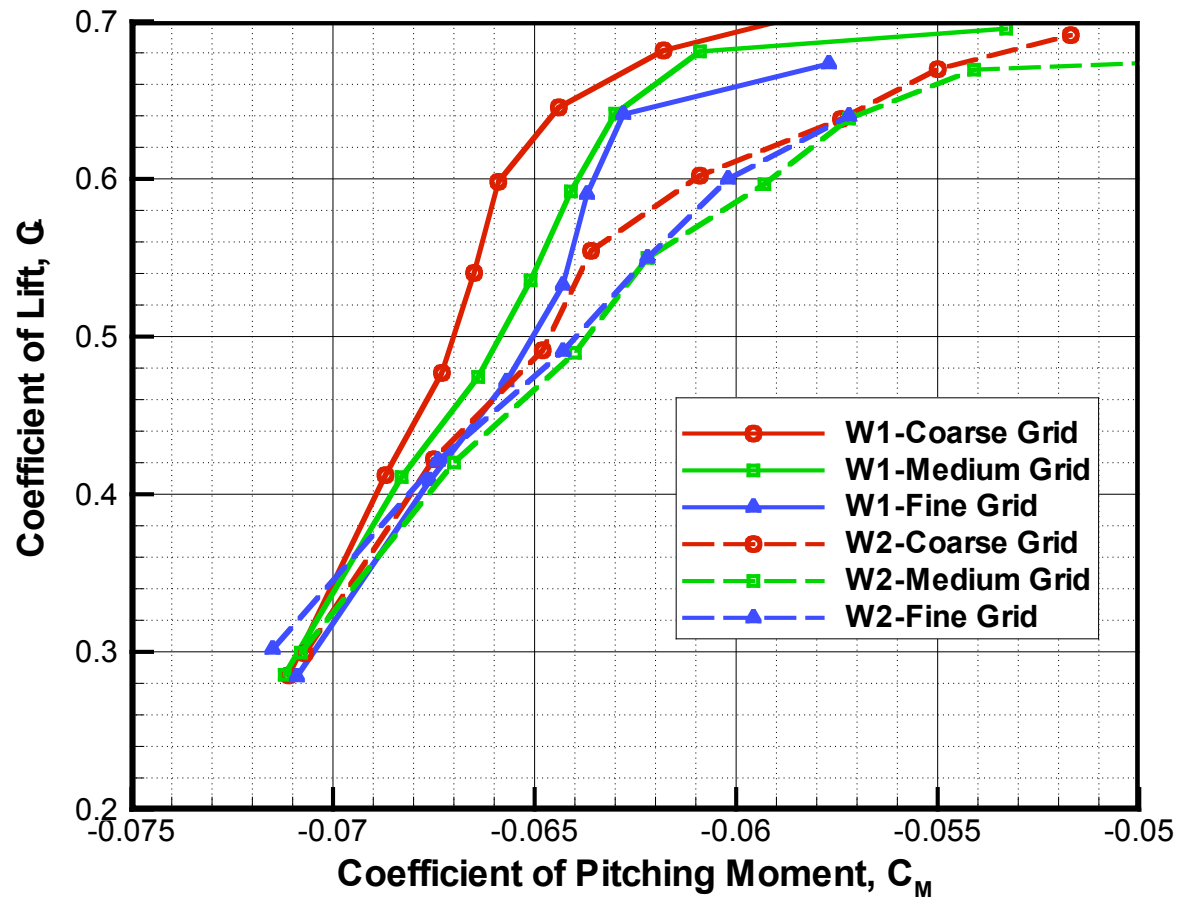# Components of Drag for Three Polars

Friction Drag for Three Grids

Idealized Pressure Drag for Three Grids

Pitching Moment for Three Grids

Summary

- Coarse Grid Too Coarse
- Consistent Results at Moderate C_Ls

Future Work

- Refine Coarse Grid
- Run Fixed C_L Grid Refinement