CFD High Lift Prediction Workshop

HiLiftPW-3

Next Steps, Overall Conclusions and Discussion

compiled by the HiLiftPW Committee

Next Steps

- Participants:
  - By August 15, 2017: Either (1) leave data as is (default), (2) submit corrected data, or (3) withdraw data
- Organizers:
  - By June 9, 2017: Determine list of invitees to SciTech 2018 and/or Aviation 2018 invited sessions
  - Will write summary paper for SciTech 2018, using corrected data

Overall Summary from HiLiftPW-3

AIAA CFD High Lift Prediction Workshop

- Code-to-code variation is similar to previous workshops
  - (For a given grid size)
  - Much larger CFD scatter near $C_{L,max}$ than at lower alphas
  - There is some evidence from the statistical analysis that use of Xfine grids (200-600 million grid points or more) might reduce some of the variation
  - From many of the individual presentations: finer grids are particularly needed when flow is separated
- Code verification matters
  - Verified codes agree better with each other compared to collective results
  - Verification removes one possible source of disagreement
- Predicting flow near $C_{L,max}$ is still a challenge for the community, as a whole
  - But sometimes individual participants/codes/models do better than others
    - Is there a specific reason(s) for this?
    - Or are they just lucky? (right answer for the wrong reasons)
    - Can we really tell w/o including tunnel walls, transition, and semi-span geometry?
- Addition of Geometry & Mesh Generation workshop
  - Was a new experience/experiment
  - Going forward: we hope to learn from each other and work closer together

Questions for Participants

- Generally:
  - How can we improve the workshop?
  - How did the joint GMGW / HiLiftPW experience work for you?
  - Should HiLiftPW-4 be done in a similar or different format?
- On a technical level:
  - How can we modify the workshop requirements for the next HiLiftPW so that we collectively learn more?
  - What kind of data do we need to collect to help increase our understanding?