**[DRAFT] Agenda for TTT-RCA High-Fidelity CFD Workshop, May 20-22, 2025**
**Lockheed-Martin Center for Innovation (The Lighthouse)**
**8000 Harbourview Boulevard, Suffolk, VA 23435**

**RCA TC Statement:** Develop and demonstrate computationally efficient, eddy-resolving modeling tools that predict maximum lift coefficient for transport aircraft with the same accuracy as certification flight tests.

| Date | Index | Time | Item | Presenter/Org | Time |
|---|---|---|---|---|---|
| **20-May** | | | **Day 1** | | |
| | | **7.15am** | **Registration** | | |
| | | **8.00am** | **Welcome** | | |
| | 1 | 8.30am | Overview of RCA research portfolio: Progress toward the Technical Challenge | Mujeeb Malik/LaRC | 45 |
| | 2 | 9.15am | Large-eddy simulation of high-lift common research model including grid-resolution and wind-tunnel effects | Parviz Moin/Stanford U | 45 |
| | 3 | 10.00am | CRM high-lift simulations using FUN3D | Li Wang/NASA LaRC | 30 |
| | | **10.30am** | **Break** | | **20** |
| | 4 | 10.50am | CRM high-lift simulations using LAVA | Emre Sozer/NASA ARC | 30 |
| | 5 | 11.20am | Wall-modelled large eddy simulations of CRM-HL configuration in NTF | Cetin Kiris/Volcano Platforms | 30 |
| | 6 | 11.50am | Industrial perspective on CFD: External aerodynamics (Invited) | TBD | 30 |
| | | **12.20pm** | **Group Photo + Lunch** | | **70** |
| | 7 | 1.30pm | Chasing the CFD Vision 2030 Exascale Milestone | Eric Nielsen/NASA LaRC | 25 |
| | 8 | 1.55pm | Towards grid-adaptation in wall-modeled large-eddy simulations of realistic aerospace flows | Johan Larsson/U Maryland | 25 |
| | 9 | 2.20pm | Scale-resolving turbulence simulations through adaptive high-order discretizations and data-enabled model refinements | Chris Fidkowski/U Michigan | 25 |
| | 10 | 2.45pm | High-fidelity simulations in support of analysis and design of aircraft engines (Invited) | Stephan Priebe/GE | 30 |
| | | **3.15pm** | **Break** | | **20** |
| | 11 | 3.35pm | Outlook for direct/wall-resolved numerical simulations of transitional transonic, supersonic and hypersonic flows (Invited) | Neil Sandham/U Southampton | 30 |
| | 12 | 4.05pm | Numerical study of turbulent supersonic plane-channel flow: Implications for modeling high-speed boundary layers | Gary Coleman/LaRC | 20 |
| | 13 | 4.25pm | DNS and hybrid RANS/LES of canonical configurations | Ali Uzun/LaRC (AMA) | 20 |
| | 14 | 4.45pm | WMLES of the Boeing speed bump | Prahladh Iyer/LaRC (AMA) | 20 |
| | | **5.05pm** | **End of Day 1** | | |
| | | **6.30 PM** | **[no host] Group Dinner** | | |
| **21-May** | | | | | |
| | | **7.30am** | **Start of Day 2** | | |
| | 15 | 8.00am | For What the Bell Tolls: Computational efficiency through tuned approximation (Invited) | David Keyes/KAUST | 30 |
| | 16 | 8.30am | Glenn flux reconstruction (GFR) development | Seth Spiegel/GRC | 25 |
| | 17 | 8.55am | Stabilized finite-elements in FUN3D | Kyle Anderson/LaRC | 25 |
| | 18 | 9.20am | Entropy-stable numerical schemes | Mark Carpenter/LaRC | 25 |
| | 19 | 9.45am | Advancements in solver technology | Boris Diskin/LaRC | 25 |
| | | **10.10am** | **Break** | | **20** |
| | 20 | 10.30am | Industrial perspective on CFD: Propulsion applications (Invited) | TBD | 30 |
| | 21 | 11.00am | Uncertainty quantification – QUEST | Marian Nemec/ARC | 25 |
| | 22 | 11.25am | Advances in multi-fidelity uncertainty quantification to support certification by analysis in the separated-flow regime | Alex Gorodetsky/U Michigan | 25 |
| | 23 | 11.50pm | Quantum-Ready and Quantum-Inspired CFD | Peyman Givi/U Pittsburg | 25 |
| | | **12.15pm** | **Lunch** | | **55** |
| | 24 | 1.10pm | Integrated boundary-layer transition prediction | Meelan Choudhari/LaRC | 30 |
| | 25 | 1.40pm | Building-block flow model: An ML-based general-purpose closure model for large-eddy simulation (Invited) | Adrian Lozano-Duran/CalTech | 30 |
| | 26 | 2.10pm | Machine learning for transition and turbulence | Vishal Srivastava/LaRC (AMA) | 20 |
| | 27 | 2.30pm | An efficient data-driven approach for assessment and selection of Reynolds-stress-equation closure models | Ali Mani/Stanford U | 20 |
| | | **2.50pm** | **Break** | | **20** |
| | 28 | 3.10pm | Optimizing overset grid generation | William Chan/ARC | 20 |
| | 29 | 3.30pm | Toward adaptive mixed-element unstructured grids for simulations of viscous flows | Gabe Nastac/LaRC | 20 |
| | 30 | 3.50am | Development of Voronoi grid capability for WMLES | Victor Sousa/ARC | 20 |
| | 31 | 4.10pm | Dynamic AMR for WMLES of complex configurations | Dimitri Mavriplis/Scientific Simulatior | 20 |
| | 32 | 4.30pm | TBD (invited) | TBD | 25 |
| | | **4.55pm** | **End of Day 2** | | |
| **22-May** | | | | | |
| | | **7.30am** | **Start of Day 3** | | |
| | 33 | 8.00am | BeVERLI - The experiment, the challenge, and community engagement | Chris Roy/VA Tech | 20 |
| | 34 | 8.20am | CRM-HL Ecosystem | TBD | 20 |
| | 35 | 8.40am | NTF experiments on the CRM-HL configuration | Courtney Winski/LaRC | 20 |
| | 36 | 9.00am | High-lift flow physics experiment | Dan Neuhart/LaRC | 20 |
| | 37 | 9.20am | The THX experiments | Nick Georgiadis/GRC | 20 |

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| 38 | 9.40am | Shock/boundary-layer interaction experiments | Heath Reising/GRC | 20 |
| | **10.00am** | **Break** | | **20** |
| 39 | 10.20am | Transition experiments | Jenna Eppink/LaRC | 20 |
| 40 | 10.40am | Aeroelastic analysis with FUN3D | Kevin Jacobson/LaRC | 20 |
| 41 | 11.00am | Buffet onset prediction with FUN3D | Emmett Padaway/LaRC | 20 |
| 42 | 11.20pm | Transonic buffet prediction in LAVA | Jeffrey Housman/ARC | 20 |
| 43 | 11.40am | Towards GPU-enabled structural analysis tools for aeroelastic certification by analysis | Graeme Kennedy/GA Tech | 20 |
| | **12.00pm** | **Lunch** | | **60** |
| | **1.00pm** | **Group Discussion: Future Directions/What next in turbulence prediction? Next Technical Challenge? Whither HPC?** | Jeff Slotnick/Chris Rumsey, Moderators | |
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| | | **Mode of discussion and panel members under Formulation.** | | |
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| | **5.00pm** | **End of Workshop** | | |