

**Ground Test Technical Committee (GTTC)
Call for Papers
SciTech 2024 Forum**



The Ground Testing Technical Committee (GTTC) serves to facilitate interactions and discussions between all elements of the ground testing sector. GTTC is seeking submissions for publication as part of the technical proceedings for the 2024 AIAA Science and Technology Forum (SciTech) in Orlando, FL, USA. GTTC welcomes and encourages submissions covering a broad array of topics across all aspects of ground testing planning, execution, data review and assessment, reporting and administration, and facility maintenance, operation, and improvements. Areas of interest include all facets of ground testing including wind tunnels, water channels, engine test cells, rocket sleds, drop testing, climactic simulations, vacuum chamber testing and other space simulation facilities, arc jet heater testing and other types of experimental facilities. Tests related to all speed and Reynolds number regimes and all physical scales are welcomed and encouraged. Specific areas of interest include the below:

Facility Commissioning, Improvement, or Expansion

- Design, construction, and/or commissioning of new test facilities
- Upgrades, modernizations, or capability enhancements to existing facilities
- Characterization of facility performance

Test Techniques and Measurements

- Advancements to test techniques, processes, and measurements
- Improvements or novel concepts in instrumentation measurement technology or calibration
 - o Advancements in flow visualization techniques
 - o Improvements in flow diagnostics
 - o Enhancements to facility measurement reliability and uniformity
- Test matrix optimization approaches through Design of Experiments or other methods
- Optical and Laser Diagnostics for Facility Characterization (joint AMT/ GT subtopic)

Novel and Emerging Applications in Ground Testing

- Unique and innovative uses of existing ground test facilities, models, or capabilities
- Integration of additive manufacturing into ground test articles or facilities

Data Review and Assessment

- Improvements or progress in data quality assurance, uncertainty analysis, or quantification
- Comparison or integration of ground test results with computational fluid dynamics (CFD), Finite Element Analysis (FEA), or other predictive simulations
- Comparison or integration of ground test results with flight test

Test Operation and Administration

- Improvements to test procedures, processes, procedures, maintenance, or management

- Advancements to improve test operational efficiency and reduce testing costs
- Techniques for knowledge transfer and capture of facility-specific expertise

Improvements or Advancements in Model Design, Analysis, and Manufacturing

- Advanced or novel methods of stress or fatigue analysis
- Use of additive manufacturing
- Incorporation of advanced techniques in rapid production (3D printing, etc.)
- Advancements in novel or emerging materials