AIAA SciTech 2027
Structures Technical Committee

AIAA SciTech 2027
January 11-15, 2027
Hyatt Regency Orlando
Orlando, FL

The current goal of the Structures Technical Committee is to advance science and technology related to the design, analysis, computer modeling, optimization, manufacturing, and testing of aircraft, spacecraft, and launch vehicle applications. Technical paper topics may include the latest developments in both traditional and innovative structural concepts applied to a variety of platforms and mission requirements; structural testing ranging from coupons to full vehicles; structural materials that include metallic alloys, ceramics, and composites; and manufacturing techniques that range from traditional machining, composite fabrication, and additive manufacturing techniques. Topics may also include refinement and improvement of current approaches to structural repair, damage initiation/growth, durability/damage tolerance, fatigue, fracture, and stability. The Structures Technical Discipline welcomes papers exploring advances in structural applications, best practices, and historical lessons learned in the 2027 Call for Papers. Papers on related topics in structures not explicitly mentioned are also strongly encouraged.

The AIAA Structures Technical Committee will include several joint sessions with other technical disciplines to explore areas of overlapping interest. These topics include AI/ML in Structures and Materials, In-Space Servicing, Assembly and Manufacturing (ISAM), Integrated Computational Materials Engineering (ICME), Multifunctional and Multipurpose Air and Space Structural Design, Structural Joints and Repairs, Structural Optimization Application for Air and Space, Structures and Materials in Extreme Environments, Structural Health Monitoring and Non-Destructive Evaluations.

The Structures Technical Committee at SciTech 2027 will also include a special session to honor the career of Dr. Scott Norwood.

We invite you to submit a paper for the AIAA Structures Technical Committee at SciTech 2027. The major deadlines are as follows:

Extended abstracts of no less than 1,000 words are due **May 21, 2026** Author notification of paper acceptance on or about **August 24, 2026** Final manuscript due **December 1, 2026**

For more information, contact the AIAA Technical Discipline Chair for SciTech 2027:

Sean Taylor
Gulfstream Aerospace Corporation
sean.taylor@gulfstream.com
(912)-251-7198

Call for Papers

Examples of session topics are listed below; however, this list is not exclusive. Other topics in structures not explicitly listed below are also welcomed.

Structural Design, Analysis, Manufacturing, and Testing:

- Air and Space Structural Design, Analysis, Test
- Buckling and Stability of Air and Space Structures
- Advanced Structural Computational Techniques
- Fatigue, Fracture, and Impact Damage of Structures
- Multifunctional Air and Space Structures
- Additive Structures and Advanced Manufacturing Techniques
- Structural Health Monitoring, Joints, Repairs, and Non-Destructive Evaluation
- Composites

Special and Joint Sessions for SciTech 2027:

- UQ and Risk Analysis in Structures (Joint with NDA)
- In-Space Servicing, Assembly, and Manufacturing (ISAM) (Joint with SCS/EDU)
- AI/ML in Structures, Materials, and Optimization (Joint with MDO)
- Structural Optimization Application for Air and Space (Joint with MDO/MAT)
- Fatigue Loads, Spectrum Generation, and Testing (Joint with SD)
- Sizing, Shape, and Topology Optimization (Joint with MDO/MVCE)
- MDO/Sensitivity Analysis with Aeroelasticity/Fluid Structure Interaction (Joint with MDO/SD)
- Honor session for Dr. Scott Norwood

Other Topics in Structures:

This list of session topics is not exclusive. Papers on other topics in structures are strongly encouraged, please reach out to Sean Taylor with any questions regarding submissions of other Structures Topics. Additional information on session topics is attached.

Call for Papers

The AIAA Structures Technical Committee is sponsoring a Session on

Air and Space Structural Design, Analysis, Test

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures Committee solicits papers with recent research, technological advancements, and systems-level perspectives in **Air and Space Structural Design, Analysis, Test** within the AIAA SciTech conference. The topic covers a wide range of topics related to the advancement of aircraft and spacecraft structures by disseminating theoretical, experimental, and computational techniques. Typical topics could include, but not be limited to:

- Structural design analysis for improving or predicting strength, stiffness, dynamic modes, fatigue, flutter, impact/damage tolerance, etc.
- Comparative analysis with experimentation for model/tool validation.
- New design concepts to reduce weight-to-strength ratios.
- Computational techniques mapping multiscale analysis.
- Other topics related to design, analysis, and testing of air and space structures.

The committee welcomes submissions from government, industry, academia, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 21, 2026**
Author notification of paper acceptance on or about **August 24, 2026**
Final manuscript due **December 1, 2026**

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select "Air and Space Structural Design, Analysis, Test" topic option under "Structures" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Alana Cardona NASA Langley Research Center alana.cardona@nasa.gov

Call for Papers

The AIAA Structures Technical Committee is sponsoring a Session on

Buckling and Stability of Air and Space Structures

AIAA SciTech 2027
January 11-15,
2027 Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures Committee solicits papers with recent research, technological advancements, and systems-level perspectives on **Buckling and Stability of Air and Space Structures** within the AIAA SciTech conference. Aerospace structures, including aircraft, launch vehicles, and space satellites, are lightweight structures, aimed at carrying the flight loads efficiently. Applications to metallic, composites, or new material systems are welcome.

Under compression, shear, or other forces, these structures are subject to buckling, which changes their load-carrying capability. These structures can be built from basic components, like beams (columns), plates, shells (cylindrical, conical, spherical), and panels. Other advanced components would include stiffened panels and stiffened shells that have increased load-carrying capacity with a relatively low addition of mass. While plates have stable post-buckling behavior, shells generally have unstable post-buckling behavior, often with a relatively large difference between the calculated and experimental buckling loads. Aerospace structures, laminated composite and/or sandwich-based structures, can add complexity to the solution. The proposed topic addresses a broad range of topics: (i) analytical and computational stability of aerospace structures, (ii) experimental results and procedures to increase the accuracy of the predicted buckling loads, (iii) numerical and experimental results of composite structures, (iv) stability of lightweight structures in the presence of cutouts; and (v) behavior of aerospace structures under combined loadings. Any other related topics will also be most welcomed.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

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https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select "Buckling and Stability of Air and Space Structures" topic option under "Structures" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Dr. Vijay K. Goyal Lockheed Martin Co. vgoyal2@kennesaw.edu

Call for Papers

Advanced Structural Computational Techniques

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures Committee solicits papers with recent research, technological advancements, and systems-level perspectives on Advanced Structural Computational Techniques within the AIAA SciTech conference. Papers are solicited for topics that address complex numerical methods such as multi-scale modeling, topology optimization, advanced material modeling, aero- and aerothermo-elastic analysis, and the integration of high-performance computational techniques.

These methods enable highly efficient and lightweight structures while taking complex loading conditions and material properties into account. Some important facets of innovative structural computational methods include:

1. Sophisticated material models or complex constitutive models to accurately represent the behavior of novel materials and metamaterials that account for nonlinear (including damage) mechanics
2. Multi-scale modeling to analyze structural response across multiple length scales
3. Creative and lightweight designs to optimize material function that maximizes structural performance while decreasing mass
4. Computational homogenization techniques to determine effective material properties
5. Modeling that uses high-performance computing methods to carry out intricate high-fidelity simulations inclusive of unconventional geometries and large-scale structures.

The committee welcomes submissions from government, industry, academia, and small businesses. All abstracts are peer-reviewed

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https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select "Advanced Structural Computational Techniques" topic option under "Structures" technical discipline when prompted during submission.

For more information, contact the following organizer:

Dr. Vijay K. Goyal Lockheed Martin Co. vgoyal2@kennesaw.edu

Call for Papers

The AIAA Structures Technical Committee is sponsoring a Session on

Fatigue, Fracture, and Impact Damage of Structures

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures Committee solicits papers with recent research, technological advancements, and systems-level perspectives on **Fatigue, Fracture, and Impact Damage of Structures** within the AIAA SciTech conference. This session focuses on the broad topic of structural integrity that is concerned with the reliability and effectiveness of various materials and structural components of any scale or geometry. Damage could also include damage tolerance, fail-safe, or safe-life approaches. Typical, but not limited to, topics include: novel testing and characterization methods, multiaxial and complex loading effects of materials and structures, computational and experimental techniques, models for early stages of crack formation and growth, prognosis and damage state awareness, applications of technologies associated with fatigue and their implications for structural integrity and reliability, fatigue of devices and structures at small scales, including effects of process route and surfaces/interfaces, and thermal effect. Applications to all aero-structures, aircraft and spacecraft (such as launch vehicles), are welcome.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 21, 2026**
Author notification of paper acceptance on or about **August 24, 2026**
Final manuscript due **December 1, 2026**

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select "Fatigue, Fracture, and Impact Damage of Structures" topic option under "Structures" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Sean Taylor Gulfstream Aerospace sean.taylor@gulfstream.com

Call for Papers

The AIAA Structures, Aircraft Design, and Design Engineering Technical Committees are sponsoring a Joint Session on

Multifunctional Air and Space Structures

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures Technical Committee Multifunctional Structures Subcommittee is very pleased to announce a call for papers to be presented in sessions on Multifunctional Air and Space Structures within the AIAA SciTech conference. These sessions will examine advances in materials, components, or systems that are designed to perform multiple functions beyond their traditional structural role. These structures integrate functionalities such as sensing, actuation, energy harvesting, and adaptive capabilities, along with their primary load-bearing function. The goal is to enhance the overall performance, efficiency, and versatility of aerospace systems. Here are some key aspects of multifunctional structures in the aerospace context: multifunctional structures maintain their primary role of providing structural support and integrity within an aircraft or spacecraft. They are designed to withstand mechanical loads, vibrations, and other stresses associated with aerospace applications; these structures often incorporate sensors and monitoring systems to assess and report on the structural health of the aircraft, including detecting structural damage, monitoring stress levels, and providing real-time feedback to operators; multifunctional materials, allowing them to change their characteristics in response to external stimuli or enhance the overall efficiency of the aerospace system; multifunctional structures designed to capture and convert ambient energy, such as vibrations or thermal gradients, into usable electrical power, enabling them to contribute to the overall energy efficiency of aircraft and spacecraft; these structures integrate multiple functions into a single structure, enabling weight and space savings; and the use of smart materials, such as piezoelectric materials, shape memory alloys, and others, allow for active control and actuation within the structure. Any structures-related aspect of multifunctional air and space structures that is relevant to aerospace is acceptable for papers.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 21, 2026**
Author notification of paper acceptance on or about **August 24, 2026**
Final manuscript due **December 1, 2026**

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select the "Multifunctional Air and Space Structures" topic option under "Structures", "Aircraft Design", or "Design Engineering" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Sean Taylor Gulfstream Aerospace Corporation sean.taylor@gulfstream.com

Call for Papers

The AIAA Structures Technical Committee is sponsoring a Special Session on

Additive Structures and Advanced Manufacturing Techniques

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

Advanced manufacturing and additive manufacturing (AM) techniques using 3D printing, fiber placement, directed energy deposition (DED), or robotic applications, among others, have the potential to revolutionize design of many types of structural components if the challenge of designing and fabricating components with reliability sufficient for certification can be met. Opportunities to leverage AM processes and advanced manufacturing techniques for structural improvement include low volume production, aging component replacement, piece part reduction and assembly simplification, material savings, multi-functionality, increased complexity, and weight and performance improvement through generative design optimization free from many conventional manufacturing constraints. Advanced manufacturing opportunities may include manufacturing best practices for novel materials, new methods for existing materials or structures, or improvements to current approaches. Despite these opportunities, formidable challenges remain in manufacturing process reliability, design and analysis methodology, part inspection, and certification. The AIAA Structures Technical Committee seeks papers of development and application addressing these challenges at the structural or component level.

Potential topics could include the following:

- AM-informed design, analysis, and optimization methods
- Generative design optimization for AM
- Lattice structure design and application
- Process-structure-property-performance relationships, sensitivities, and models
- Predictive design tools
- Multiscale approaches
- Reliability-based approaches
- Qualification/certification approaches
- Traditional building block approach
- Rapid qualification framework
- Inspection methods—in-situ and post-process, destructive and non-destructive
- Build simulation, heat treatment, and correlation
- Structures designed for all types of AM processes, including metals and composites

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 21, 2026**
Author notification of paper acceptance on or about **August 24, 2026**
Final manuscript due **December 1, 2026**

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select "Additive Structures and Advanced Manufacturing Techniques" topic option under "Structures" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Erin Anderson	NASA Langley	Erin.k.anderson@nasa.gov
Zhenning Hu	The Boeing Company	zhenning.hu@boeing.com

Call for Papers

The AIAA Structures Technical Committee and Materials Technical Committee are sponsoring a Joint Session on

Structural Health Monitoring, Joints, Repairs, And Non-Destructive Evaluation

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

The AIAA Structures and Technical Committees invite papers highlighting recent research, technological advancements, and systems-level perspectives on Structural Health Monitoring (SHM), which evaluates structural integrity by collecting and analyzing sensor data to detect damage. As SHM sensor technology matures, it offers the potential to replace traditional non-destructive inspections (NDI) such as visual, eddy current, ultrasonic, and X-ray methods, while enabling assessment without direct physical access. The adoption of composite materials in aerospace has also driven the Non-Destructive Evaluation (NDE) community to reassess established techniques, leading to the development of in-situ NDI systems that must align with civilian and military aviation standards. This session will highlight advances in the design, analysis, manufacturing, inspection, testing, and performance evaluation of aerospace structural joints—including bonded, bolted, and novel joining methods—and structural repairs involving new design concepts, materials, or processes. Relevant topics include strength and durability prediction, SHM for integrity assessment, material selection, additive manufacturing, damage assessment through NDT, and automated joining or repair methods that improve repeatability and reliability. Submissions are welcomed from government, industry, academia, and small businesses.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 21, 2026**
Author notification of paper acceptance on or about **August 24, 2026**
Final manuscript due **December 1, 2026**

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select "Structural Joints and Repairs" topic option under "Structures" or "Materials" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Sean Taylor	Gulfstream Aerospace	Sean.taylor@gulfstream.com
Rich Manwell	Textron Aviation	RManwell@txtav.com

Call for Papers

The AIAA Structures Technical Committee is sponsoring a Session on

Composites

AIAA SciTech 2027
January 11-15, 2027
Orlando, Florida, USA

The AIAA (American Institute of Aeronautics and Astronautics) Structures Technical Committee invites researchers, engineers, and practitioners to submit original work to the Composites session at the upcoming AIAA SciTech 2027 conference. This session serves as a dynamic platform to showcase cutting-edge advancements, innovative concepts, and systems-level perspectives across the multidisciplinary field of composites, with a focus on aerospace applications.

We seek high-quality papers presenting original research, case studies, and review articles that push the boundaries of knowledge in the science, engineering, and application of composite materials. Submissions may address traditional and emerging topics through analytical studies, experimental investigations, computational modeling, and advancements in manufacturing techniques. Areas of interest include, but are not limited to:

- Traditional and Advanced Reinforcements and Hybrid Systems
- Novel Architectures and Multifunctional Composites
- Manufacturing and Processing Advancements
- Computational and Experimental Mechanics
- Interface Optimization and Material Sustainability
- Aerospace Applications in Aircraft, Spacecraft, and Launch Vehicles

Material systems of interest include fibrous and particulate reinforcements in polymeric, metallic, and ceramic matrices, and other composites.

The committee welcomes submissions from government, industry, academia, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 21, 2026**
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Final manuscript due **December 1, 2026**

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Select "Composites" topic option under "Structures" technical discipline during submission.

For more information, contact one of the following organizers:

Jeff Chambers	Aurora Flight Sciences	chambers.jeffrey@aurora.aero
Alana Cardona	NASA Langley Research Center	alana.cardona@nasa.gov

The AIAA Non-Deterministic Approaches Technical Committee and Structures Technical Committee
Are sponsoring a Joint Session on

UQ and Risk Analysis in Structures

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Non-Deterministic Approaches Technical Committee and the Structures Technical Committee soliciting are papers with recent research and technological advancements regarding **UQ and Risk Analysis in Structures**.

Non-deterministic approaches are technologies aimed at understanding and managing the variations, uncertainties, and associated risks inherent in physical structures' design, production, and operation. These technologies include computational and experimental methods to quantify and propagate uncertainty in complex structures, assess risk, support decision-making under uncertainty, and enable robust designs that account for variability in structural performance.

We invite you to submit abstracts for the special session on uncertainty quantification applied to aerospace structures (both metallic and composites). The structural analysis can be of linear or nonlinear static, buckling, vibration, fatigue, and flutter. The solicited topics include but are not limited to, the following:

- Uncertainty quantification (UQ) and risk modeling in aerospace materials and structures
- Uncertainty propagation and sensitivity analysis for complex aerospace structural responses
- Bayesian inference and uncertainty updating using test, inspection, and flight/operational data
- Multi-fidelity methods (high-fidelity simulation, reduced-order models, and experiments)
- Multi-scale UQ and risk assessment linking material/process variability to component- and system-level performance
- Risk-informed structural design and optimization (robust design and risk-based formulations)
- Probabilistic risk assessment of structural performance for static, dynamic, stability/buckling, fatigue, fracture, and aeroelastic responses
- Risk-informed decisions across the structural life cycle, including certification, inspection planning, maintenance, and sustainment under uncertainty

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 21, 2026**
Author notification of paper acceptance on or about **August 24, 2026**
Final manuscript due **December 1, 2026**

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select the "UQ and Risk Analysis in Structures" topic option under "Non-Deterministic Approaches" or "Structures" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Sameer Mulani	The University of Alabama	sameer.mulani@ua.edu
Sean Taylor	Gulfstream Aerospace	sean.taylor@gulfstream.com

Call for Papers

AI/ML in Structures, Materials, and Optimization

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures, Materials, and Multidisciplinary Optimization Technical Committees solicit papers with recent research, technological advancements, and systems-level perspectives in Artificial Intelligence and Machine Learning for Problems in Structures and Materials within the AIAA SciTech conference. Artificial Intelligence and machine learning (deep learning included) technologies offer the potential to revolutionize and streamline current processes to develop and qualify materials and improve our design process for aerospace structures. These sessions will examine applications of various artificial intelligence and machine learning technologies to material development, structural design/optimization, qualification/certification, etc. Applications to all aero-structures, aircraft and spacecraft (such as launch vehicles), are welcome.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

Extended abstracts of no less than 1,000 words are due **May 21, 2026**
Author notification of paper acceptance on or about **August 24, 2026**
Final manuscript due **December 1, 2026**

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select the "AI/ML in Structures, Materials, and Optimization" topic option under the "Structures" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Yumeng Li	University of Illinois	yumengl@illinois.edu
Brandon Hearley	NASA Glenn Research Center	brandon.l.hearley@nasa.gov
Pu Wang	The Boeing Company	pu.wang3@boeing.com
August Noevere	Collier Aerospace	August.Noevere@CollierAerospace.com

Call for Papers

The AIAA Structures Technical Committee and Multidisciplinary Design Optimization Technical Committee are sponsoring a Joint Session on

Structural Optimization Application for Air and Space

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

The AIAA Structures Technical Committee and Multidisciplinary Design Optimization Technical Committee solicits papers with recent research and application on Structural Optimization at the component level as well as vehicle level. Structural optimization plays a critical role in aircraft and spacecraft design throughout a life cycle. It revolutionizes design, analysis and manufacturing of structural components and assemblies resulting in lighter and stronger multifunctional structures that not only meet challenging requirement in aeronautics and astronautics, but also reduce cost and shorten the development timeline. Tremendous opportunities exist in industry to leverage machine learning, data science, design of experiments, optimization methods, tools and processes for structural improvement for new and existing aircraft configurations, innovative component designs, aging fleet part replacements, extreme environment adaptation, etc.

Potential paper topics for this special session include but are not limited to **development and application** of the following technologies at **aircraft and spacecraft component and vehicle level**:

- Topology Optimization
- Topography Optimization
- Lattice Structure Design
- Size Optimization
- Shape Optimization
- Design of Experiments
- Machining Learning/Artificial Intelligence
- Manufacturing Optimization and Manufacturing of Optimized Structures
- Test and/or Certification of Optimized Structures
- Parametric Studies

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

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Final manuscript due **December 1, 2026**

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select the "Structural Optimization Application for Air and Space" topic option under "Structures" or "Multidisciplinary Design Optimization" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Zhenning Hu	The Boeing Company	zhenning.hu@boeing.com
Vladimir Balabanov	The Boeing Company	vladimir.balabanov@boeing.com

Call for Papers

The AIAA Structures Technical Committee and Structural Dynamics Technical Committee

are sponsoring a Joint Session on:

Fatigue Loads, Spectrum Generation, and Testing

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

The AIAA (American Institute of Aeronautics and Astronautics) Structures and Structural Dynamics Technical Committees solicit papers with recent research, technological advancements, and systems-level perspectives on **Fatigue Loads and Spectrum Generation** for the AIAA SciTech conference. Applications to all aero-structures, aircraft, rotorcraft, and spacecraft (such as launch vehicles), are welcome. Potential topics could include but are not limited to:

- **Advanced Methods for Fatigue Load Generation**: Exploring new techniques and algorithms (e.g. AI/ML, Risk based) for generating fatigue loads across different mission profiles (commercial, military, etc.).
- **Challenges in Testing for Novel Aerospace Structures**: Developing fatigue spectra and test methods for the qualification of new materials and structural designs; such as for composite bonded structures, additive manufactured structures, and/or advanced ceramic matrix composites.
- **Fatigue in Extreme Environments**: Studying the effects of extreme conditions (e.g., temperature, pressure, acoustics) on fatigue loads and testing; such as for high speed vehicles (inlets, nozzles, control surfaces, leading edges, and engine exhaust washed structure under combined loads and extreme environments).
- **Impact of Aerodynamic Buffet on Fatigue Loads**: Understanding how buffet contributes to fatigue in aircraft structures; spectrum generation, combined loads fatigue methods, and methods to simulate buffet during Full Sale Fatigue Testing; flight test data reduction.
- **Next-Generation Air-Vehicles:** Addressing the unique fatigue load, spectrum, and testing challenges in such vehicles as **Electric Vertical Takeoff and Landing (eVTOL) vehicles**, **Unmanned Aerial Vehicles (UAVs)**, Collaborative Combat Aircraft (CCA), and Hypersonic Cruise Vehicles (HCVs).
- **Application of Smarter Testing for Fatigue Certification:** Leading edge work in the area of combined test and simulation for fatigue life certification of future aerospace vehicles.

The committee welcomes submissions from government, industry, academic, and small businesses.

Detailed deadline information, abstract preparation instructions, and policies can be found at:
https://www.aiaa.org/SciTech/call-for-content/call-for-papers

Make sure to select the "Fatigue Loads and Spectrum Generation" topic option under "Structures" or "Structural Dynamics" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Rich Manwell	Textron Aviation	rmanwell@txtav.com
Sal Liguore	The Boeing Company	salvatore.l.liguore@boeing.com

Call for Papers

The AIAA Structures Technical Committee is sponsoring a Session

In Honor of Dr. Scott Norwood

AIAA SciTech 2027
January 11-15, 2027
Orlando, FL

Dr. Scott Norwood recently retired from Lockheed Martin Aeronautics with four decades of expertise in aircraft structures development, analysis, testing, and certification as an LM Fellow and an AIAA Associate Fellow. In his career at both Lockheed Martin and Vought Aircraft, he has contributed to many aircraft programs and research projects with increasing technical leadership responsibilities and a focus on composite designs and technologies. These include Japan's F-2 co-cured composite wing, T-50 composite vertical and horizontal tail skins, and the F-35 building block development test program with hundreds of tests applicable to three airframe partners. He has also led research and development programs with the Air Force Research Laboratory and NASA to advance composite and metallic analysis techniques and certification. Projects include the Composites Airframe Life Extension (CALE) Project 5, the Airframe Propulsion Integration Program (APIA), and the High-Rate Composite Aircraft Manufacturing (HiCAM) project. Dr. Norwood has also shown a passion for teaching and mentoring engineers. At LM Aero he has helped develop, coordinate, and teach structural analysis methods and courses with both composite and metallic materials. Dr. Norwood carried this passion outside of the office as an adjunct professor at Southern Methodist University and University of Texas at Arlington. He has also served for many years on the Structures Technical Committee as the Chair, Vice-Chair, Secretary, and Structures Technical Discipline Chair, contributing to AIAA and the aerospace industry.

In recognition of Dr. Norwood's remarkable legacy and the profound impact he has had on the field, we cordially invite researchers to contribute their work to a special session dedicated to celebrating his achievements and enduring influence. Please consider honoring him by submitting an abstract to this Special Session. Potential topics could include, but are not limited to Composite Airframe Structural Analysis, Building Block Test Development, Airframe Thermal Analysis, and Structural Repair Methods.

The committee welcomes submissions from government, industry, academic, and small businesses. All abstracts are peer-reviewed.

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Make sure to select the "In Honor of Dr. Scott Norwood" topic option under "Structures" technical discipline when prompted during submission.

For more information, contact one of the following organizers:

Dr. Vijay K. Goyal	Lockheed Martin Co.	vgoyal2@kennesaw.edu
Jason Action	Lockheed Martin Co.	Jason.action@lmco.com