

ISSN: 2473-6708

Volume 9, Number 4, December 2024



Advances in Aerospace Science and Technology



ISSN: 2473-6708



<https://www.scirp.org/journal/aast>

Journal Editorial Board

ISSN Print: 2473-6708 ISSN Online: 2473-6724

<https://www.scirp.org/journal/aast>

Editor-in-Chief

Prof. Ahmad A. Hujeirat

Interdisciplinary Research Center for Scientific Computing, University
of Heidelberg, Germany

Editorial Board

Prof. Heuy Dong Kim

Andong National University, South Korea

Dr. Craig Lawson

Cranfield University, UK

Dr. Chung-Kiak Poh

Aero-Persistence Research LLP, Malaysia

Prof. Toshiaki Setoguchi

Saga University, Japan

Dr. Paolo Tortora

University of Bologna, Italy

Prof. Vladimir Zhuravlev

Moscow Aviation Institute, Russia

Table of Contents

Volume 9 Number 4

December 2024

Covariant Newtonian Dynamics and the Principle of Material Frame-Indifference

P. H. Zipfel 129

Study on Reliability Test of External Air-Launched Carrier Rocket

Z. M. Yin, Y. Huang, Q. Q. Liu 142

**Study on Flow Characteristics and Performance of Baffled Shock
Two-Dimensional Vector Nozzle**

M. Hossain, Y. Kamal, S. Mallick, M. R. J. Angkon 148

**Dynamic Characterization of Helicopter Main Reducer Planetary Drive System
under Several Typical Flight Conditions**

L. Yang, F. Q. Qian, X. Y. Meng, W. J. Zhou 167

System Identification of an Aircraft Model While Considering Control Surface Actuators

A. Fujimori, K. Mochizuki, S. Oh-hara 178

Prediction of the Amplitude and Main Characteristics of Solar Cycle 25

D. B. Berdichevsky, R. D. Piacentini 191

Advances in Aerospace Science and Technology (AAST)

Journal Information

SUBSCRIPTIONS

The *Advances in Aerospace Science and Technology* (Online at Scientific Research Publishing, <https://www.scirp.org/>) is published quarterly by Scientific Research Publishing, Inc., USA.

Subscription rates:

Print: \$39 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: sub@scirp.org

SERVICES

Advertisements

Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies)

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: sub@scirp.org

COPYRIGHT

Copyright and reuse rights for the front matter of the journal:

Copyright © 2024 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

Copyright for individual papers of the journal:

Copyright © 2024 by author(s) and Scientific Research Publishing Inc.

Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

Disclaimer of liability

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: aast@scirp.org



Call for Papers

Advances in Aerospace Science and Technology

ISSN Print: 2473-6708 ISSN Online: 2473-6724
<https://www.scirp.org/journal/aast>

Advances in Aerospace Science and Technology (AAST) is an open access journal. The goal of this journal is to provide a platform for researchers and practitioners all over the world to promote, share, and discuss various new issues and developments in all areas of Aerospace Science and Technology.

All manuscripts must be prepared in English and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy. The journal publishes papers including but not limited to topics as listed below:

Aeronautics: Aircraft, Rotorcraft, Airship, UAS, Gliders, Airframe, Engine, Systems, Avionics, Airport, Airline, MRO, ATM, Society, History, Law, Environment.

Astronautics: Spacecraft, Satellites, Structures, Propulsion, Astrionics, Photovoltaics, Operation, Debris, Philosophy.

Aerospace Sciences: Aircraft Design, Spacecraft Design, MDO, Materials, Aeroelasticity, Manufacturing, Thermodynamics, Fluid Dynamics, CFD, Acoustics, Flight Mechanics. Performance, Stability and Controls, Navigation, Astrodynamics, Simulation, Testing, Sensing, Transmission, Automation, Software Engineering, Air Conditioning, Ergonomics, Hydraulics, Pneumatics, Kinematics, Sanitation, Systems Engineering, Management, Economics, Security, Safety, Reliability, Airworthiness, Documentation.

Perspective: Operator, Research, Teaching, Passenger.

We are interested in:

- Original Research Papers.
- Comments where an author can present an idea with theoretical background but has not yet completed full research needed for an original paper, likewise a useful method, a small finding or discovery.
- Reviews in all aspects of Aerospace Science and Technology.
- Symposia or workshop papers published as supplements.
- Book reviews with comments and critiques.

For more details about the journal, please access the website and contact the Editorial Office.

Website and E-Mail

<https://www.scirp.org/journal/aast> E-mail: aast@scirp.org