



## **COSPAR Outstanding Paper Award for Young Scientists Papers published in Advances in Space Research in 2024**

### **EARTH SCIENCES**

**AISR-D-23-00196** Crossover Adjustment of ICESat-2 Satellite Altimetry for the Arctic Region

Advances in Space Research, Volume 73, Issue 1, 1 January 2024, Pages 376-385

Bo Wang, Nico Sneeuw

<https://doi.org/10.1016/j.asr.2023.07.041>

**AISR-D-23-00682** Composition and source based aerosol classification using machine learning algorithms

Advances in Space Research, Volume 73, Issue 1, 1 January 2024, Pages 474-497

Annapurna S.M, M. Anitha, Lakshmi Sutha Kumar

<https://doi.org/10.1016/j.asr.2023.09.068>

**AISR-D-23-00043** Using Ensemble Machine Learning Algorithm to Predict Forest Fire Occurrence Probability in the Madhya Pradesh and Chhattisgarh, India

Advances in Space Research, Volume 73, Issue 6, 15 March 2024, Pages 2969-2987

Sumedha Surbhi Singh, C. Jeganathan

<https://doi.org/10.1016/j.asr.2023.12.054>

**AISR-D-23-00967** GRACE Follow-On accelerometer data recovery by high-precision environment modelling

Advances in Space Research, Volume 73, Issue 12, 15 June 2024, Pages 5783-5805

Moritz Huckfeldt, Florian Wöske, Benny Rievers, Meike List

<https://doi.org/10.1016/j.asr.2024.03.068>

**AISR-D-24-00676** Application of integrated GNSS tomography in observation study over the area of southern Poland

Advances in Space Research, Volume 74, Issue 8, 15 October 2024, Pages 3654-3667

Adam Cegla, Gregor Moeller, Witold Rohm et al.

<https://doi.org/10.1016/j.asr.2024.07.059>

**AISR-D-24-00283** Exploring the Decision-Making Process of Ensemble Learning Algorithms in Landslide Susceptibility Mapping: Insights from Local and Global eXplainable AI Analyses

Advances in Space Research, Volume 74, Issue 8, 15 October 2024, Pages 3765-3785

Alihan Teke, Taskin Kavzoglu

<https://doi.org/10.1016/j.asr.2024.06.082>

**AISR-D-23-01203** Multi-GNSS Precise Point Positioning enhanced by the real navigation signals from CENTISPACETM LEO mission

Advances in Space Research, Volume 73, Issue 8, 15 April 2024, Pages 4175-4186

Shengyi Xu, Qiangwen Yang, Xiaodong Du et al.

<https://doi.org/10.1016/j.asr.2024.01.017>

**AISR-D-24-00484** Remote sensing framework for geological mapping via stacked autoencoders and clustering

Advances in Space Research, Volume 74, Issue 10, 15 November 2024, Pages 4502-4516

Sandeep Nagar, Ehsan Farahbakhsh, Joseph Awange, et al.

<https://doi.org/10.1016/j.asr.2024.09.013>

**AISR-D-24-00520** Tight integration of real-time GNSS PPP and INS: Ionosphere-free combined vs uncombined models

Advances in Space Research, Volume 74, Issue 11, 1 December 2024, Pages 5417-5427

Lei Zhao, Paul Blunt, Lei Yang et al.

<https://doi.org/10.1016/j.asr.2024.08.037>

## **SPACE TECHNOLOGY, POLICY AND EDUCATION**

**AISR-D-23-00324** NN-Based Reinforcement-learning Optimal Sliding Mode Control for Drag-free and Attitude of Spacecraft with State Constraints

Advances in Space Research, Volume 73, Issue 1, 1 January 2024, Pages 971-981

Changwu Jiang, Yuan Liu

<https://doi.org/10.1016/j.asr.2023.09.052>

**AISR-D-23-00284** Trajectory planning of stratospheric airship for station-keeping mission based on improved rapidly exploring random tree

Advances in Space Research, Volume 73, Issue 1, 1 January 2024, Pages 992-1005

Qin-chuan Luo, Kang-wen Sun, Tian Chen et al.

<https://doi.org/10.1016/j.asr.2023.10.002>

**AISR-D-23-00744** Spark plasma sintering of HUST-1 lunar regolith simulant and its thermal shock resistance properties

Advances in Space Research, Volume 73, Issue 3, 1 February 2024, Pages 1992-2003

Wenbin Han, Yan Zhou, Fen Dang et al.

<https://doi.org/10.1016/j.asr.2023.11.027>

**AISR-D-23-00452** Improved Sliding Mode Tracking Control for Spacecraft Electromagnetic Separation Supporting On-orbit Assembly  
Advances in Space Research, Volume 73, Issue 9, 1 May 2024, Pages 4711-4720  
Chuang Liu, Yiqing Ma, Xiaokui Yue et al.  
<https://doi.org/10.1016/j.asr.2024.01.034>

**AISR-D-23-01275** Optimisation of hybrid composite shields for hypervelocity Micro-Meteoroid and Orbital Debris (MMOD) impact  
Advances in Space Research, Volume 73, Issue 12, 15 June 2024, Pages 6194-6208  
K. Fowler, F. Teixeira-Dias  
<https://doi.org/10.1016/j.asr.2024.03.071>

**AISR-D-23-01483** Reflectance characterization of Starlink-like satellite with HELIOS brightness testing facility  
Advances in Space Research, Volume 74, Issue 2, 15 July 2024, Pages 861-871  
Gaia Lorenzi, Carolina Ghini, Lorenzo Mariani et al.  
<https://doi.org/10.1016/j.asr.2024.04.031>

**AISR-D-24-00017** Self-Triggered formation attitude control for multiple spacecraft with disturbances  
Advances in Space Research, Volume 74, Issue 3, 1 August 2024, Pages 1288-1299  
Xiong Xie, Tao Sheng, Xiaoqian Chen  
<https://doi.org/10.1016/j.asr.2024.05.00>

**AISR-D-24-00458** An edge feature-based external calibration of monocular camera and LiDAR using in-orbit data  
Advances in Space Research, Volume 74, Issue 4, 15 August 2024, Pages 1724-1740  
Jiaqian Hu, Bin Song, Jinzhen Mu et al.  
<https://doi.org/10.1016/j.asr.2024.05.037>

**AISR-D-23-01621** On-Orbit Transportation with Non-Conserved Momenta by Cooperative Space Robots  
Advances in Space Research, Volume 74, Issue 10, 15 November 2024, Pages 5179-5191  
Yunhao Hu, Wei Zhang, Hao Wen et al.  
<https://doi.org/10.1016/j.asr.2024.07.033>

## **SPECIAL ISSUES**

**AISR-D-21-01211** Airborne Imaging Spectrometer Dataset for Spectral Characterization and Predictive Mineral Mapping using sub-pixel based classifier in parts of Udaipur, Rajasthan, India  
Advances in Space Research, Volume 73, Issue 2, 15 January 2024, Pages 1491-1516  
Ronak Jain, Harsh Bhu , Ritesh Purohit  
<https://doi.org/10.1016/j.asr.2022.08.032>

**AISR-D-22-00617** Mapping of understory invasive plant species clusters of *Lantana camara* and *Chromolaena odorata* using airborne hyperspectral remote sensing  
Advances in Space Research, Volume 73, Issue 2, 15 January 2024, Pages 1379-1396  
Bodi Surya Pratap Chandra Kishore, Amit Kumar, Purabi Saikia, et al.  
<https://doi.org/10.1016/j.asr.2022.12.026>

**AISR-D-23-00339** Towards Mitigating the Effect of Plasma Bubbles on GPS Positioning Accuracy through Wavelet Transformation over Southeast Asian Region  
Advances in Space Research, Volume 73, Issue 7, 1 April 2024, Pages 3642-3657  
Kutubuddin Ansari, Sampad Kumar Panda, Venkatesh Kavutarapu, et al.  
<https://doi.org/10.1016/j.asr.2023.04.041>

**AISR-D-22-01074** Robust Multi-Task Learning and Online Refinement for Spacecraft Pose Estimation across Domain Gap  
Advances in Space Research, Volume 73, Issue 11, 1 June 2024, Pages 5726-5740  
Tae Ha Park, Simone D'Amico  
<https://doi.org/10.1016/j.asr.2023.03.036>

**AISR-D-22-01261** High performance lunar constellation for navigation services to Moon orbiting users  
Advances in Space Research, Volume 73, Issue 11, 1 June 2024, Pages 5665-5679  
Giovanni Zanotti, Michele Ceresoli, Andrea Pasquale, et al.  
<https://doi.org/10.1016/j.asr.2023.03.032>

**AISR-D-22-01446** Generation of Fused Visible and Thermal-Infrared Images for Uncooperative Spacecraft Proximity Navigation  
Advances in Space Research, Volume 73, Issue 11, 1 June 2024, Pages 5501-5520  
Gaia Letizia Civardi, Michele Bechini, Matteo Quirino, et al.  
<https://doi.org/10.1016/j.asr.2023.03.022>

**AISR-D-24-00146** Friction stir additive manufacturing of regolith metal matrix composite  
Advances in Space Research, Volume 74, Issue 11, 1 December 2024, Pages 6222-6230  
Jessica J. Lopez, Malcolm B. Williams, Pruthul Kokkada Ravindranath, et al.  
<https://doi.org/10.1016/j.asr.2024.04.034>

## **ASTRODYNAMICS AND SPACE DEBRIS**

**AISR-D-23-00575** Five-impulse low-energy earth-moon transfer using manifolds  
Advances in Space Research, Volume 73, Issue 1, 1 January 2024, Pages 201-224  
Shiyu An, Ming Liu, Huayi Li, et al.  
<https://doi.org/10.1016/j.asr.2023.10.013>

**AISR-D-23-00803** Learning Multi-Satellite Scheduling Policy with Heterogeneous Graph Neural Network  
Advances in Space Research, Volume 73, Issue 6, 15 March 2024, Pages 2921-2938  
Zhilong Wang, Xiaoxuan Hu, Huawei Ma, et al.  
<https://doi.org/10.1016/j.asr.2023.12.036>

**AISR-D-23-00760** Decentralized decision making over random graphs for space domain awareness

Advances in Space Research, Volume 73, Issue 10, 15 May 2024, Pages 5266-5283

Samuel Fedeler, Marcus Holzinger, William Whitacre

<https://doi.org/10.1016/j.asr.2024.01.063>

**AISR-D-23-01602** Impact of incorporating Spire CubeSat GPS observations in a global GPS network solution

Advances in Space Research, Volume 73, Issue 12, 15 June 2024, Pages 6079-6093

Cyril Kobel, Maciej Kalarus, Daniel Arnold et al.

<https://doi.org/10.1016/j.asr.2024.04.015>

**AISR-D-24-00131** Environmental impact of object breakup in medium-Earth orbit

Advances in Space Research, Volume 74, Issue 4, 15 August 2024, Pages 1900-1915

Lorenzo Giudici, Juan Luis Gonzalo, Andrea Muciaccia, et al.

<https://doi.org/10.1016/j.asr.2024.06.012>

**AISR-D-23-01149** B-plane assisted trajectory design with analytical mapping of swing-by parameters

Advances in Space Research, Volume 74, Issue 8, 15 October 2024, Pages 4068-4088

Takuya Chikazawa, Yasuhiro Kawakatsu

<https://doi.org/10.1016/j.asr.2024.06.061>

## **EARTH MAGNETOSPHERE AND UPPER ATMOSPHERE**

**AISR-D-23-01504** GRACE-FO radiation pressure modelling for accurate density and crosswind retrieval

Advances in Space Research, Volume 73, Issue 5, 1 March 2024, Pages 2355-2373

N.A. Hładczuk, J. van den IJssel, T. Kodikara et al.

<https://doi.org/10.1016/j.asr.2023.12.059>

**AISR-D-23-01505** Synchronous observations of traveling ionospheric disturbances by the multipoint Doppler sounding, ionosonde and the Incoherent Scatter Radar: case study

Advances in Space Research, Volume 73, Issue 9, 1 May 2024, Pages 4414-4425

Kateryna D. Aksonova, Andrii O. Sopin, Dalia Burešová et al.

<https://doi.org/10.1016/j.asr.2024.01.032>

**AISR-D-23-01112** The Implementation of Deep Clustering for SuperDARN Backscatter Echoes

Advances in Space Research, Volume 74, Issue 1, 1 July 2024, Pages 243-254

Xing Kong, Erxiao Liu, Shengsheng Shi et al.

**AISR-D-24-00009** Exploring the Link between Convectively Generated Gravity Waves and Ionospheric Anomalies: Insights from Observations near the low-mid latitude Geomagnetic Transition Region

Advances in Space Research, Volume 74, Issue 2, 15 July 2024, Pages 1039-1055

Mohammad Rafeeq Rather, Aashiq Hussain Bhat, T.K. Ramkumar, et al.

<https://doi.org/10.1016/j.asr.2024.04.027>

## **SOLAR AND HELIOSPHERIC PHYSICS**

**AISR-D-23-01579** Quasi-planar ICME sheath: a cause of first two-step extreme geomagnetic storm of 25th solar cycle observed on 23 April 2023.

Advances in Space Research, Volume 73, Issue 12, 15 June 2024, Pages 6288-6297

Kalpesh Ghag, Anil Raghav, Ankush Bhaskar, Shirsh Lata Soni et al.

<https://doi.org/10.1016/j.asr.2024.03.011>

## **SOLAR SYSTEM BODIES**

**AISR-D-23-01028** Development of Icy Regolith Simulant for Lunar Permanently Shadowed Regions

Advances in Space Research, Volume 73, Issue 6, 15 March 2024, Pages 3222-3234

Kārlis Šļumba, Hannah M. Sargeant, Daniel T. Britt

<https://doi.org/10.1016/j.asr.2024.01.014>

## **ASTROPHYSICS**

**AISR-D-23-01233** Revealing the equilibrium dynamics of a binary system of prolate or oblate elliptical galaxies

Advances in Space Research, Volume 73, Issue 9, 1 May 2024, Pages 4868-4877

Eman M. Moneer, Fredy L. Dubeibe, Euaggelos E. Zotos

<https://doi.org/10.1016/j.asr.2024.01.042>