

# **COSPAR Outstanding Paper Award for Young Scientists Papers published in Advances in Space Research in 2022**

## **EARTH SCIENCES**

**AISR-D-21-00163** Assessing the performance of machine learning algorithms for soil salinity mapping in Google Earth Engine platform using Sentinel-2A and Landsat-8 OLI data

Advances in Space Research, Volume 69, Issue 2, 15 January 2022, Pages 1072-1086

Samet Aksoy, Aylin Yildirim, Taha Gorji, Nikou Hamzehpour, Aysegul Tanik and Elif Sertel

<https://doi.org/10.1016/j.asr.2021.10.024>

**AISR-D-21-01109** On the Evolution of the Gulf of Mexico Loop Current Through Its Penetrative, Ring Shedding and Retracted States

Advances in Space Research, Volume 69, Issue 11, 1 June 2022, Pages 4058-4077

Alexander K. Nickerson, Robert H. Weisberg and Yonggang Liu

<https://doi.org/10.1016/j.asr.2022.03.039>

**AISR-D-21-00657** Inter-satellite time synchronization and ranging link assignment for autonomous navigation satellite constellations

Advances in Space Research, Volume 69, Issue 6, 15 March 2022, Pages 2421-2432

Leyuan Sun, Jun Yang, Wende Huang, Laping Xu, Shaochuan Cao and Haidong Shao

<https://doi.org/10.1016/j.asr.2021.12.039>

**AISR-D-22-00087** Quantification of landscape metrics effects on downscaled urban land surface temperature accuracy of satellite imagery

Advances in Space Research, Volume 70, Issue 1, 1 July 2022, Pages 35-47

Mohammad Karimi Firozjaei, Majid Kiavarz, Seyed Kazem Alavipanah

<https://doi.org/10.1016/j.asr.2022.04.021>

**AISR-D-21-00402** Monitoring of local deformations and reservoir water level for a gravity type dam based on GPS observations

Advances in Space Research, Volume 69, Issue 1, 1 January 2022, Pages 319-330

J. Rene Vazquez-Ontiveros, Carlos A. Martinez-Felix, G. Esteban Vazquez-Becerra, J. Ramon Gaxiola-Camacho, Angela Melgarejo-Morales and Jorge Padilla-Velazco

<https://doi.org/10.1016/j.asr.2021.09.018>

## **ASTRODYNAMICS AND SPACE DEBRIS**

**AISR-D-21-00508** Collision avoidance control for formation flying of multiple spacecraft using artificial potential field

Advances in Space Research, Volume 69, Issue 5, 1 March 2022, Pages 2197-2209

Jiyeon Hwang, Jinah Lee, Chandeok Park

<https://doi.org/10.1016/j.asr.2021.12.015>

**AISR-D-22-00138** Dust impact and attitude analysis for JAXA's probe on the Comet Interceptor mission

Advances in Space Research, Volume 70, Issue 5, 1 September 2022, Pages 1189-1208

P. Machuca, N. Ozaki, J.P. Sánchez, L. Felicetti

<https://doi.org/10.1016/j.asr.2022.05.070>

**AISR-D-21-01196** Sun Sailing Polar Orbiting Telescope (SunSPOT): A solar polar imaging mission design

Advances in Space Research, Volume 70, Issue 2, 15 July 2022, Pages 510-522

A. Probst, T. Anderson, A. O. Farrish, C. B. Kjellstrand, A. M. Newheart, S. A. Thaller, S. A. Q. Young, K. Rankin, M. Akhavan-Tafti, A. Chartier, G. Chintzoglou, J. Duncan, B. Fritz, B. A. Maruca, R. M. McGranaghan, X. Meng, R. Perea, E. Robertson, L. Lowes, A. Nash, A. Romero-Wolf and Team-X

<https://doi.org/10.1016/j.asr.2022.04.060>

**AISR-D-21-00634** Natural landing dynamics near the secondary in single-tidal-locked binary asteroids

Advances in Space Research, Volume 69, Issue 5, 1 March 2022, Pages 2223-2239

Tongge Wen and Xiangyuan Zeng

<https://doi.org/10.1016/j.asr.2021.12.021>

**AISR-D-21-00659** Hypersonic reentry trajectory optimization by using improved sparrow search algorithm and control parametrization method

Advances in Space Research, Volume 69, Issue 6, 15 March 2022, Pages 2512-2524

Xu Hui, Cai Guangbin, Zhang Shengxiu, Yang Xiaogang and Hou Mingzhe

<https://doi.org/10.1016/j.asr.2021.12.030>

## **EARTH MAGNETOSPHERE AND UPPER ATMOSPHERE**

**AISR-D-21-00547** Analysis on the ionospheric scintillation monitoring performance of ROTI extracted from GNSS observations in high-latitude regions

Advances in Space Research, Volume 69, Issue 1, 1 January 2022, Pages 142-158

Dongsheng Zhao, Wang Li, Chendong Li, Craig M. Hancock, Gethin Wyn Roberts and Qianxin Wang

<https://doi.org/10.1016/j.asr.2021.09.026>

**AISR-D-22-00179** Long-term temperature and ozone response to natural drivers in the mesospheric region using 16 years (2005–2020) of TIMED/SABER observation data at 5–15°N

Advances in Space Research, Volume 70, Issue 7, 1 October 2022, Pages 2095-2111

Chalachew Lingerew Bizuneh, U. Jaya Prakash Raju, Melessew Nigussie and Celso Augusto Guimaraes Santos

<https://doi.org/10.1016/j.asr.2022.06.051>

**AISR-D-22-00113** Neural network-based ionospheric modeling and predicting—To enhance high accuracy GNSS positioning and navigation

Advances in Space Research, Volume 70, Issue 10, 15 November 2022, Pages 2878-2893

Chunyuan Zhou, Ling Yang, Xiaoning Su and Bofeng Li

<https://doi.org/10.1016/j.asr.2022.07.050>

**AISR-D-22-00490** Investigations of equatorial plasma bubbles as observed in the OI 630 nm nightglow emissions over off-equatorial and low-latitudinal locations over Indian longitudes  
Advances in Space Research, Volume 70, Issue 11, 1 December 2022, Pages 3686-3698  
Sovan Saha, Duggirala Pallamraju and Rupesh N. Ghodpage  
<https://doi.org/10.1016/j.asr.2022.08.023>

**AISR-D-21-01201** New method for Earth neutral atmospheric density retrieval based on energy spectrum fitting during occultation with LE/Insight-HXMT  
Advances in Space Research, Volume 69, Issue 9, 1 May 2022, Pages 3426-3434  
Daochun Yu, Haitao Li, Baoquan Li, Mingyu Ge, Youli Tuo, Xiaobo Li, Wangchen Xue and Yaning Liu  
<https://doi.org/10.1016/j.asr.2022.02.030>

### SPACE TECHNOLOGY, POLICY AND EDUCATION

**AISR-D-22-00073** Finite-time extended state observer based prescribed performance fault tolerance control for spacecraft proximity operations  
Advances in Space Research, Volume 70, Issue 5, 1 September 2022, Pages 1270-1284  
Kun Wang, Tao Meng, Weijia Wang, Renting Song and Zhonghe Jin  
<https://doi.org/10.1016/j.asr.2022.05.072>

**AISR-D-21-00427** Extended-state-observer-based adaptive control of flexible-joint space manipulators with system uncertainties  
Advances in Space Research, Volume 69, Issue 8, 15 April 2022, Pages 3088-3102  
Bowen Zhan, Minghe Jin and Jian Liu  
<https://doi.org/10.1016/j.asr.2022.01.016>

**AISR-D-21-00758** Quantum-inspired diffusion Monte Carlo optimization algorithm applied to space trajectories and attitude maneuvers  
Advances in Space Research, Volume 69, Issue 1, 1 January 2022, Pages 592-608  
<https://doi.org/10.1016/j.asr.2021.10.008>  
Federico De Grossi, and Christian Circi

**AISR-D-21-00607** Extrusion and thermal control design of an on-orbit 3D printing platform  
Advances in Space Research, Volume 69, Issue 3, 1 February 2022, Pages 1645-1661  
Jianning Tang, Trevor Hocksun Kwan and Xiaofeng Wu  
<https://doi.org/10.1016/j.asr.2021.11.029>

**AISR-D-22-00117** Receding task allocation method for modular robots during on-orbit assembly  
Advances in Space Research, Volume 70, Issue 3, 1 August 2022, Pages 780-791  
Yuan Chai, Jianjun Luo, Mingming Wang and Dengwei Gao  
<https://doi.org/10.1016/j.asr.2022.05.023>

### SOLAR SYSTEM BODIES

**AISR-D-21-00281** Comparison of lunar and Martian regolith simulants-based geopolymer cements formed by alkali-activation for in-situ resource utilization  
Advances in Space Research, Volume 69, Issue 1, 1 January 2022, Pages 761-777

Jennifer N. Mills, Maria Katzarova and Norman J. Wagner  
<https://doi.org/10.1016/j.asr.2021.10.045>

**AISR-D-21-00172** Accelerating the finite element method for calculating the full 2-body problem with CUDA  
Advances in Space Research, Volume 69, Issue 5, 1 March 2022, Pages 2305-2318  
Yunfeng Gao, Yang Yu, Bin Cheng and Hexi Baoyin  
<https://doi.org/10.1016/j.asr.2021.11.037>

## ASTROPHYSICS

**AISR-D-21-01110** Galactic component mapping of galaxy UGC 2885 by machine learning classification  
Advances in Space Research, Volume 70, Issue 1, 1 July 2022, Pages 229-247  
Robin J. Kwik, Jinfei Wang, Pauline Barmby and Benne W. Holwerda  
<https://doi.org/10.1016/j.asr.2022.04.032>

## SPECIAL ISSUES

**AISR-D-21-00170** Land cover classification of spaceborne multifrequency SAR and optical multispectral data using machine learning  
Advances in Space Research, Volume 69, Issue 4, 15 February 2022, Pages 1726-1742  
Rajat Garg, Anil Kumar, Manish Prateek, Kamal Pandey and Shashi Kumar  
<https://doi.org/10.1016/j.asr.2021.06.028>

**AISR-D-21-01071** Over-expansion of coronal mass ejections modelled using 3D MHD EUHFORIA simulations  
Advances in Space Research, Volume 70, Issue 6, 15 September 2022, Pages 1663-1683  
Christine Verbeke, Brigitte Schmieder, Pascal Démoulin, Sergio Dasso, Benjamin Grison, Evangelia Samara, Camilla Scolini and Stefaan Poedts  
<https://doi.org/10.1016/j.asr.2022.06.013>