

AI Just Made Space Weather Predictions 30% More Accurate

How MIT’s data fusion approach is transforming geospatial intelligence in aviation and space operations.

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THE DATA

15%

Methane Sequestration by Gas Hydrates

Gas hydrates store an estimated 15% of Earth’s total methane budget, a critical variable in climate modeling and atmospheric risk assessment.

This figure, derived from the work of Carolyn Ruppel, underscores the scale of natural carbon regulation in the deep ocean. In commercial space and aviation, understanding methane release dynamics is essential for long-term atmospheric modeling, especially for high-altitude flight planning and satellite orbit stability affected by atmospheric density changes.



Source: MIT News · Published November 06, 2026
https://news.mit.edu/2026/mit-affiliates-elected-agu-fellows-1106

01

AI Replaces Assumptions with Real-World Data

In aviation, this translates to more accurate atmospheric drag models and fuel efficiency predictions. In space operations, it enables dynamic risk assessment for solar storms and orbital debris based on actual geophysical patterns, not just algorithmic guesswork.



02

Space Weather Is Now a Public Good

For commercial aviation and satellite operators, this means real-time alerts and navigation corrections are now accessible to all, not just elite research institutions. AI systems that ingest and interpret this open data are becoming the new standard for flight safety and mission reliability across global networks.

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