

Stupendous Black Holes Can't Explain Dark Matter

New study rules out primordial giants as dark matter sources

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137

Particle mass threshold

The study sets a lower bound on the mass of dark matter particles based on black hole constraints.

The research establishes that if primordial black holes were a significant component of dark matter, they would have left detectable imprints in cosmic microwave background radiation. The absence of such signals implies that any black holes contributing to dark matter must be below a certain mass threshold, with the study's model rejecting objects above 137 solar masses as viable candidates.



01

AI models are now simulating cosmic limits

Advanced machine learning frameworks are being used to test theoretical astrophysical models at scale, enabling researchers to simulate how different dark matter candidates would affect the cosmic microwave background. These models, trained on quantum field theory and general relativity data, can now rule out entire classes of black holes with precision unattainable by traditional simulations.

02

Dark matter constraints are AI-driven now

The computational power needed to simulate black hole formation and their gravitational imprints across the early universe is now being met by AI-optimized supercomputing clusters. These systems process petabytes of simulated radiation data in days, not years, allowing rapid iteration on dark matter hypotheses and accelerating the discovery process.



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