Royal Astronomical Society

Dr Deaglan Bartlett – Early Career Award (A)

Dr Deaglan Bartlett has become one of the most original and impactful early-career researchers in theoretical and computational cosmology. His work combines deep physical insight and methodological innovation, especially in the development and use of simulation-based inference techniques.

His research has resulted in some of the most robust constraints to date on dark energy models, established unprecedented limits on equivalence principle violation, set a tight constraint on the quantum gravity length scale, constrained the photon mass using cosmological observables, and derived strong bounds on the dark matter annihilation cross-section and decay rate.

In the course of his work, Dr Bartlett has pioneered and developed the application of symbolic regression (SR) in cosmology, and has introduced the incorporation of language models to ember scientific priors in SR.

He has also produced the fastest emulator for matter power spectrum estimation, and developed new methods to enhance the robustness of cosmological emulators, and has released powerful open-source codes for use by the cosmology research community. His talents and expertise are recognised internationally through a working group leadership role in the Simons Foundation Learning the Universe collaboration.

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