

New Scientific Software Released for Free by ExtractoDAO Labs for CMB Analysis Across Different Cosmological Models

Reproducible scientific software demonstrates that the CMB does not uniquely fix H_0 , resolving the Hubble tension without conflicting with Planck data

HONG KONG, December 15, 2025 /EINPresswire.com/ -- ExtractoDAO Labs announces the public

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This is professional-grade scientific software, built with numerical engines comparable to aerospace science. The results are robust because the underlying physics is consistently implemented.”

*Joel Almeida, ExtractoDAO
Labs*

release of DUT-CMB, a computational scientific software that demonstrates, in a reproducible manner, that the [Cosmic Microwave Background \(CMB\)](#) does not impose a unique value for the Hubble constant (H_0), challenging a central assumption that has supported the standard Λ CDM cosmological model for more than a decade.

The results show that the Dead Universe Theory (DUT) fits CMB observational data with the same precision as Λ CDM, even while adopting a value of H_0 consistent with current local measurements.

Central result:

The angular acoustic parameter of the CMB, as observed by the Planck satellite, is reproduced equally well by both models:

Λ CDM:

$H_0 = 67.4 \text{ km/s/Mpc}$ \Rightarrow angular acoustic parameter = 301.63

DUT:

$H_0 = 73.0 \text{ km/s/Mpc}$ \Rightarrow angular acoustic parameter = 301.62

Both values lie within the Planck observational uncertainties, demonstrating that the CMB is model-dependent and does not, by itself, fix a low value of H_0 .

Scientific implication

This result removes the main argument that local measurements of H_0 are in an “inevitable” conflict with the CMB.

Within the DUT framework, consistent dynamical modifications of cosmological geometry simultaneously affect the comoving distance to decoupling and the acoustic horizon, preserving the CMB angular acoustic parameter while allowing higher values of H_0 .

These quantities are adjusted self-consistently, without ad hoc parameters and without violating CMB observations.

What changes in cosmology

The CMB ceases to be a rigid “fixer” of H_0

- it becomes a model-dependent observational dataset.

The [Hubble tension](#) ceases to be a fundamental paradox

- it may reflect a structural limitation of Λ CDM.

Alternative models become falsifiable on equal footing

- the CMB no longer automatically privileges the standard model.

Full compatibility with existing data

- DUT preserves the CMB fit while simultaneously resolving H_0 and structure-growth tensions.

Scientific software and reproducibility

DUT-CMB is implemented as reproducible scientific software, combining:

- a Fortran 2008 numerical core, providing high-performance and numerical stability,

- a Python scientific layer for analysis, validation, and reproducibility,

- a Bayesian inference engine, ensuring statistical consistency in model comparison,

- advanced numerical integration (RK4) for precise dynamical evolution.

The software is publicly available and enables independent researchers to fully reproduce the reported results.

Code: <https://github.com/extractodao/dut-cmb-lattes>

Preprint / Dataset: <https://doi.org/10.5281/zenodo.17752029>

Institutional context

ExtractoDAO Labs is an independent scientific research organization dedicated to computational cosmology, reproducible simulations, and open scientific frameworks, with a focus on testable alternatives to the Λ CDM model.

ExtractoDAO Labs

CNPJ: 48.839.397/0001-36

Contact: contato@extractodao.com

Note

This release is based on open, executable scientific software, not solely on theoretical arguments.

No embargo: all data and software are publicly available.

The work is intended for critical evaluation by the scientific community.

About DUT

The Dead Universe Theory (DUT) is a cosmological framework based on thermodynamic retraction and scalar dynamics, proposed to explain current observational tensions without introducing artificial cosmological constants, while maintaining strict consistency with the CMB.

Joel Almeida almeida

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