

Abstract Submitted
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Reconciling dark cosmology by duality in the Friedmann scale factor MAURICE VAN PUTTEN, Sejong Univ — We report on a duality $D(a) + D(\kappa) = 2$ satisfied by the Friedmann scale factor a with curvature $\kappa = 1/a$ in terms of the nondimensional operator $D(u) = \ddot{u}u/\dot{u}^2$. The Hubble parameter hereby satisfies $H(z) = H_0\sqrt{1 + A(z)}/(1+z)$, where $A(z)$ is a polynomial in the normalized densities of radiation, matter and curvature at redshift $z = 0$. Late-time three-flat cosmology satisfies $D(\kappa) = 3\Omega_M$. With no free parameters, it alleviates H_0 -tension between Λ CDM and the Local Distance Ladder consistent with the age of the Universe based on globular clusters. The mass of the associated dark matter particle is herein bounded by $8.8 \times 10^{-24}\text{eV}$ by what appears to be C^0 -galaxy dynamics in SPARC galaxy rotation curves. (Based on van Putten, 2020, MNRAS, 491, L6.)

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