Topologically Supported Cosmological Constant

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We present a cosmological model where the cosmological constant is a topological invariant. The cosmological constant is derived from the curvature of exotic R^4 embedded in $K3\#\overline{\mathbb{C}P^2}$. Both of the manifolds are perfectly smooth however the 3-diemnsional slices they generate contain topological changes. Then the value of cosmological constant is expressed via Chern-Simons, volume, and Euler invariants of the 3-submanifolds. Moreover, this cosmological model predicts realistically the neutrino masses and inflation parameters, including Starobinsky potential and the number of e-folds.

References:

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[2] Asselmeyer-Maluga, T., & Król, J. (2018). How to obtain a cosmological constant from small exotic R4. Physics of the dark universe, 19, 66-77.

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