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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 $K3\#\overline{CP^2}$. Both of the manifolds are perfectly smooth however the 3-dimensional 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:

- [1] Król, J., Asselmeyer-Maluga, T., Bielas, K., & Klimasara, P. (2017). From Quantum to Cosmological Regime. The Role of Forcing and Exotic 4-Smoothness. *Universe*, 3(2), 31.
- [2] Asselmeyer-Maluga, T., & Król, J. (2018). How to obtain a cosmological constant from small exotic R^4 . *Physics of the dark universe*, 19, 66-77.

Primary authors: Mr KLIMASARA, Paweł (Institute of Physics, University of Silesia in Katowice); Prof. KRÓL, Jerzy (University of Information Technology and Management); Dr ASSELMEYER-MALUGA, Torsten (German Aerospace Center (DLR)); Mr BIELAS, Krzysztof (University of Information Technology and Management)

Presenter: Mr KLIMASARA, Paweł (Institute of Physics, University of Silesia in Katowice)

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