

# To curve, or not to curve: Observational unviability of curvature-assisted accelerated expansion

*Thursday, 27 June 2024 16:45 (15 minutes)*

It is known that single-field models of accelerated expansion with nearly flat potentials, despite being able to provide observationally viable explanations for the early-time cosmic inflation and the late-time cosmic acceleration, are in strong tension with the conjectured de Sitter swampland constraints. It has recently been argued that in an open universe, where the spatial curvature is negative (i.e., with  $\Omega_K > 0$ ), a new stable fixed point arises, which may lead to viable single-field-based accelerated expansion with an arbitrarily steep potential. In this talk, I will show, through a dynamical systems analysis and a Bayesian statistical inference of cosmological parameters, that the additional cosmological solutions based on the new fixed point do not render steep-potential, single-field, accelerated expansion observationally viable. I will mainly focus on quintessence models of dark energy, but I will also argue that a similar conclusion can be drawn for cosmic inflation.

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**Session Classification:** Parallel session