Contribution ID: **12**   Type: **not specified**

The cosmological inconstant and Cartan's spiral staircase

Thursday 14 November 2019 09:15 (1 hour)

We review recent efforts to turn the cosmological constant into a dynamical variable without an ungainly proliferation of free parameters. In a cosmological setting where parity invariance is imposed (along with homogeneity and isotropy) this leads to phenomenological disaster. However, in this theory it is possible to construct parity violating Friedman models due to torsion, a re-enactment of "Cartan's spiral staircase". We examine the Hamiltonian structure of the 2 branches (parity compliant and parity violating) and conclude that they must correspond to different theories, with different numbers of degrees of freedom. Parity violation may save these models phenomenologically, giving observational relevance to the Pontryagin invariant (and possibly the Immirzi parameter) in cosmology. Preliminary work on gravity waves in these theories is briefly discussed.

Presenter: MAGUEIJO, Joao