

PLANCK2025 - The 27th International Conference From the Planck Scale to the Electroweak Scale



Contribution ID: 153

Type: **not specified**

Growth of Cosmic Strings beyond Kination

Wednesday 28 May 2025 15:40 (20 minutes)

A novel mechanism to produce a cosmic network of fundamental superstrings based on a time-varying string tension has been recently proposed. It has been found that fundamental (super)strings can grow in a kinating background driven by the volume modulus of Type IIB string compactifications. In this talk, based on arXiv:2503.11293, I will generalise this analysis using dynamical systems techniques. First, I will analyse the cosmological growth of strings with a field-dependent tension in a spatially-flat Universe filled with a perfect fluid, finding the fixed points of the phase space of this system. This machinery is then applied to both fundamental superstrings and effective strings obtained from wrapping p -branes on $(p - 1)$ -cycles. I will show how cosmological growth can be achieved in a non-kinating background, as in scaling fixed points, for fundamental strings as well as for EFT strings arising from wrapped D3- and NS5-branes on fibration cycles.

Authors: Prof. GIL PEDRO, Francisco (University of Bologna); BRUNELLI, Luca (University of Bologna); Prof. CICOLI, Michele (University of Bologna)

Presenter: BRUNELLI, Luca (University of Bologna)

Session Classification: Gravitational Waves