



Contribution ID: 21

Type: not specified

## Spherical collapse model for a non-Abelian Gauge-field cosmology

*Friday 22 September 2023 14:00 (30 minutes)*

In this talk, we investigate the spherical collapse model within the framework of dynamical dark energy cosmologies. We present a versatile code that allows for the implementation of various dark energy models, providing a powerful tool for studying their effects on structure formation. To demonstrate the capabilities of our code, we focus on a cosmology where a non-abelian gauge  $SU(2)$  vector field is the sole source of dark energy. This choice allows us to explore the unique characteristics of this model and investigate its implications for the formation of cosmic structures. By incorporating the dynamics of the non-abelian gauge field into the spherical collapse model, we analyze the growth of density perturbations and the formation of collapsed objects in this cosmological scenario. We observe distinct deviations from the  $\Lambda$ CDM result, highlighting the importance of considering alternative sources of dark energy in cosmological investigations of structure formation.

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