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## **A model independent consistency test between cosmological expansion history and perturbation growth**

*Monday, 8 July 2024 15:00 (30 minutes)*

In this talk I will present a method devised to test the consistency between the background expansion and the evolution of cosmological perturbations. Such a test can be performed in a model independent way thanks to machine learning techniques and it will allow the detection of possible failures of the standard cosmological model, providing a direction to explore with alternative theoretical models.

The results I will present highlight how such a technique will require a data sensitivity not available in current data, but that could be reached by upcoming Stage IV surveys. Nevertheless, the analysis of current data provides hints of some discrepancy between the two sectors, possibly related to the  $S_8$  tension.

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**Session Classification:** Current status of the  $H_0$  and growth tensions: theoretical models and model-independent constraints

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