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Dark matter-dark energy interactions and their cosmological implications

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In this talk I will consider a very popular scenario where the dark energy is a dynamical fluid whose energy density can be transferred to the dark matter, and vice versa, via a coupling function proportional to the energy density of the dark energy. In particular, I will discuss this model's ability to address the H_0 and S_8 tensions showing that considering data from Planck, BAO and Pantheon the model 1) can only minimally alleviate the H_0 tension but 2) can significantly reduce the significance of the S_8 tension without exacerbating nor introducing any other tension (such as the H_0 tension) and without worsening the fit to the considered data sets with respect to the Λ CDM model.

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Session Classification: Status of the H_0 and S_8 Tensions: Theoretical Models and Model-Independent Constraints

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