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Dark energy from cosmological fluids obeying a Shan-Chen nonideal equation of state

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An original cosmological model based on the Friedmann metric and on a fluid obeying the nonideal equation of state with asymptotic freedom of Shan-Chen is presented. After reviewing the most important physical features of the above mentioned equation of state, I will show that our model for the universe evolves towards a dark energy dominated phase starting from a radiation dominated epoch without the need of any cosmological constant. Observational quantities in support of our model are discussed and the stability of the model is addressed. The analysis suggests a new microscopic interpretation for the dark energy.

Presenter: GREGORIS, Daniele (Stockholm)

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