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On the global dynamics of relativistic fluids in cosmology

Friday 7 June 2024 09:00 (1 hour)

We are interested in the dynamical behaviour of relativistic fluids towards the expanding direction of cosmological spacetimes.
It is known that the expansion of spacetime induces a friction-like term in the fluid equation, which can prevent the formation of shocks, yielding future global solutions for small initial data.
This phenomenon is referred to as fluid stabilization. While this problem is well understood in the regime of accelerated expansion, less is known in slowly expanding spacetimes. In this talk, I will report on recent progress in understanding fluid stabilization in slowly expanding spacetimes and a possible threshold expansion rate of the universe where fluid stabilization fails. This talk is based on joint work with M. Maliborski, M. Ofner, T. Oliynyk and Z. Wyatt.

Presenter: FAJMAN, David (University of Vienna)