

Título: Interacting constituents in cosmology: equations of state for the primeval universe and some dynamical consequences.

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Abstract: Universe evolution, as described by the Friedmann equations on the background, is determined by source terms fixed by the choice of pressure \times energy density equations of state $p(\rho)$. As far as ordinary matter is concerned, the usual approach in cosmology considers equations of state accounting only for kinematic terms, ignoring the contribution from the interactions between the particles constituting the source fluid. In this seminar the importance of these neglected terms is emphasized. A systematic method, based on the statistical mechanics of real fluids, is proposed to include them. A model is presented which shows how such interaction terms could be applied to engender significant cosmological effects, such as an early accelerated regime smoothly connected to the decelerated radiation era.