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Projective coordinate transformation in teleparallel cosmology

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In the study of cosmology in teleparallel gravity, one can find a number of models whose dynamics turn out to have certain homogeneity properties, which allows finding a system of coordinates which separates the dynamics of “angular” and “radial” coordinates. In this split, one finds that the angular coordinates form a compact phase space, and that the qualitative dynamics in this part of the phase space (up to a positive factor, which can be absorbed in the time coordinate) are independent of the radial dynamics, and also determine the latter. As a consequence, phenomenological properties can be predicted from the angular dynamics alone. Further, it follows by compactness that a dynamical system approach always yields fixed points. In my talk I give some conditions for the existence of such coordinates and show how to apply this framework to a few example theories.

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