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Cosmological models with a Hybrid Scale Factor

We construct some cosmological models in an extended gravity theory. The gravitational action of the extended gravity theory contains a term proportional to the trace of the energy momentum tensor in addition to the usual Ricci scalar. Keeping in view the cosmic transit behavior from a decelerated universe to an accelerated one, we have employed a hybrid scale factor (HSF) to study the cosmic dynamics. The parameters of the HSF have been constrained from some Physical basic and Hubble parameter data. The viability of the models has been tested through some diagnostic analysis. The model parameters substantially affect the dynamical properties.

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