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Higher-order coupled quintessence

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We study a coupled quintessence model in which the interaction with the dark matter sector is a function of the quintessence potential. Such a coupling can arise from a field dependent mass term for the dark matter field. The dynamical analysis of a standard quintessence potential coupled with the interaction explored here shows that the system possesses a late time accelerated attractor. In light of these results, we perform a fit to the most recent Supernovae Ia, Cosmic Microwave Background and Baryon Acoustic Oscillation data sets. Constraints arising from weak equivalence principle violation arguments are also discussed.

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