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Dark Energy from Coupled p -forms

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In this work we study the possibility to obtain an accelerated expansion from arbitrary couplings between p -forms in a 4-dimensional space-time. The Lagrangian is built with couplings between 1- and 2-forms with kinetic functions of a scalar field ϕ (a quintessence field in this context). By using a dynamical system approach, we study the evolution of the fields in an anisotropic background, which is a natural framework to show if the interaction between p -forms can sustain a non-negligible shear. In addition, we found conditions for the cosmological viability of a dark energy dominated epoch. The evolution and stability is also confirmed by numerical integrations.

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