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Cosmological Coincidence without Fine Tunning JOOHAN LEE, Towson University/ University of Seoul, JAMES OVERDUIN, Towson University/ Johns Hopkins University, TAE HOON LEE, Soongsil University, PHILLIAL OH, Sungkyunkwan University — We present a simple cosmological model in which a single, non-minimally coupled scalar field with a quartic potential and a non-canonical kinetic term is responsible for inflation at early times and acceleration at late times. No fine tuning is needed to explain why the present density of dark energy is comparable to that of pressureless matter. Dark energy in this theory originates in the potential energy of the scalar field, which in turn is sourced by the trace of the energy-momentum tensor. This becomes significant when the bulk of the matter content of the universe has decoupled from radiation and become fully non-relativistic, so that $\phi \propto \rho_m^{1/3} \propto \rho_{m,0}^{1/3}(a_0/a) \sim (10^{-120})^{1/3}(10^{10}) \sim 10^{-30}$ and $V \sim \phi^4 \sim 10^{-120}$ in Planck units, as observed.

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