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# All in the Family: the quintessential kinship between Inflation and Dark Energy

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A unified dynamical model of dark energy and inflation is presented, in which both phenomena are driven by axion-like fields-quintessences-of spontaneously broken global U(1)'s symmetries whose potentials are induced by instantons of the QCD gauge group SU(3)c for inflation and of a new strongly interacting gauge group SU(2)Z for dark energy. It is shown that SU(3)c and SU(2)Z fit snugly into a unified gauge group SU(5)Z, Ischyro´s Unification Theory or IUT, which is sponta- neously broken down to SU(3)c × SU(2)Z × U(1)Z. A judicious choice of SU(5)Z representations leads to the SU(3)c and SU(2)Z couplings growing strong at ΛQCD ~ 200 MeV and ΛZ ~ 10−3eV respectively. The model predicts particles carrying SU(2)Z quantum numbers which can be searched for at colliders such as the LHC and which, as a result, might indirectly reveal the nature of dark energy and perhaps inflation in a laboratory.

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