Abstract Submitted
for the APR17 Meeting of
The American Physical Society

Cosmic Gauge-Field Dark Energy CHRISTOPHER DEVULDER, ROBERT CALDWELL, Dartmouth College — We present a cosmological model in which dark energy consists of a cosmic gauge field. At early times it behaves like radiation; at late times it drives cosmic acceleration. By varying the number of fields, their coupling strength and handedness, a wide range of behavior is shown to emerge. Joint constraints on the model from SNe, BAO and CMB data are presented. We discuss the possibility that the gauge field may seed a spectrum of primordial gravitational waves with a distinct imprint on the power spectrum, as well as act like a dissipative medium for high frequency gravitational waves. We show that this model could have an impact on the B-mode polarization pattern in the CMB, as well as future probes that use standard sirens to constrain the energy budget of the Universe.

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Date submitted: 29 Sep 2016 Electronic form version 1.4