Abstract Submitted
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BAOs of DESI galaxies in Early Dark Energy cosmologies\cb1 FRANCISCO PRADA, IAA-CSIC SCIPP, University of California, Santa Cruz, JOEL PRIMACK, SCIPP, University of California, Santa Cruz, ANATOLY KLYPIN, NMSU University of Virginia — LCDM cosmological models with Early Dark Energy (EDE) have been proposed to resolve tensions between the Hubble constant measured locally and H0 deduced from Planck cosmic microwave background (CMB) and other early universe measurements plus LCDM. EDE models do this by adding a scalar field that temporarily adds dark energy equal to about 10% of the cosmological energy density at the end of the radiation-dominated era. I will compare linear and nonlinear predictions of a Planck-normalized LCDM model including EDE giving H0 = 72.8 km/s/Mpc with those of standard Planck LCDM with H0 = 67.8 km/s/Mpc both for power spectra of fluctuations and halo mass functions at low redshifts. I will also show predicted galaxy abundances and clustering of Luminous Red Galaxies that will soon be tested by DESI observations from baryonic acoustic oscillations (BAOs) and correlation functions that differ by about 2% between the models - an effect that is not washed out by nonlinearities. Both standard LCDM and the EDE model presented here agree well with presently available acoustic-scale observations, but DESI measurements will provide stringent new tests.

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