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# Future CMB Constraints on Early, Cold, or Stressed Dark Energy

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We investigate future constraints on early dark energy (EDE) achievable by the Planck and CMBPol experiments, including cosmic microwave background (CMB) lensing. For the dark energy, we include the possibility of clustering through a sound speed  $c_s < 1$  (cold dark energy) and anisotropic stresses parameterized with a viscosity parameter  $c_{vis}^2$ . We discuss the degeneracies between cosmological parameters and EDE parameters. In particular we show that the presence of anisotropic stresses in EDE models can substantially undermine the determination of the EDE sound speed parameter  $c_s^2$ . The constraints on EDE primordial energy density are however unaffected. We also calculate the future CMB constraints on neutrino masses and find that they are weakened by a factor of 2 when allowing for the presence of EDE, and highly biased if it is incorrectly ignored.

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