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Armengaud: Ultra-light scalar Dark Matter probed with the Lyman-alpha forest

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I will introduce the main features of the so-called “fuzzy dark matter” (FDM) model, in which a (pseudo)scalar field with mass in the 10^{-24} - 10^{-20} eV range behaves as DE at high redshift, and DM at low z. I will review the growth of LSS in this scenario, in the linear as well as non-linear regimes. FDM is a good candidate to solve the so-called small-scale crisis of the CDM paradigm. I will then present constraints on FDM models derived from measurements of the small-scale Lyman-alpha forest flux power spectrum. Using a combination of SDSS-BOSS and higher-resolution spectra, we exclude FDM masses in the range 10^-22 - 3x10^-21 eV.