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The Evolution of the Large Scale Structure of the Universe from z² until now

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We discuss the evolution of clustering of galaxies back to z^2 . For that purpose we use the VIMOS-VLT Deep Survey (VVDS) data. We analyze the evolution of the projected two-point correlation function for the global galaxy population and for particular galaxy classes, with different intrinsic luminosities, spectral types, colors and other properties. For the brightest galaxies (with L>L*), for instance, the shape of the correlation function deviated from the power-law much more strongly at z^1 than it is observed now. This finding can be interpreted e.g. in the framework of Halo Occupation Distribution models (HODs) and implies a significant change in the way luminous galaxies traced dark-matter halos at z^1 with respect to now. Our observations represent an important constraint for models trying to reproduce the evolution of galaxy clustering. They also give indications about the evolution of the position of the most probable host galaxies of gravitational waves-related and high-energy phenomena in the large scale structure.

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