

VIPERS: mass, light and dark energy half a way to the edge of the Universe

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Abstract

Complex relations between the evolution of large scale structure of the Universe, its “dark” content, and galaxies are among today’s key cosmological problems. I will present the current status and recent results of the ongoing VIMOS Public Extragalactic Redshift Survey (VIPERS) which allows us for a new insight into studies of the Universe at $z \sim 1$. Thanks to its unsurpassed statistics (it is planned to measure $\sim 100,000$ spectroscopic redshifts at $0.5 < z < 1.2$, and more than a half of this number was already released to the astronomical community), high sampling rate and volume, VIPERS is already becoming comparable to local large galaxy surveys. It will let us trace galaxy clustering with a much higher accuracy than ever before at $z \sim 1$. I will show how, using the VIPERS data, we investigate the evolution of galaxy properties and clustering, between $z \sim 1$ and the present epoch and what are the consequences of its measurement for our understanding of co-evolution of dark matter density field, dark energy and galaxies themselves.