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First measurement of the growth rate of structures with the SDSS-IV eBOSS DR14 quasar sample at $z \sim 1.5$

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One of the biggest questions of contemporary cosmology is the origin of cosmic acceleration : does it arise from a constant vacuum energy as assumed in Λ CDM or from another form of dark energy that varies in time and space, or from a breakdown of general relativity on cosmological scales? To distinguish between these possibilities, one promising technique is to measure the growth rate of structures in data and to compare it with the prediction from general relativity.

The eBOSS multi-object spectrograph has undertaken a survey of quasars in the almost unexplored redshift range $0.8 < z < 2.2$. In this talk, I will present the first measurement of the growth rate of structures from the 2-point correlation function of the spectroscopically confirmed eBOSS DR14 quasars which correspond to 2 years of data taking. I will present the applicability of the model we are using to fit the correlation function of quasars at this redshift and the systematics tests we performed using simulated populations of quasars as benchmark for the analysis.

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