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The BAO linear point as cosmic ruler: tests and applications to the Euclid mission

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The large-scale distribution of galaxies contains information about the acoustic waves propagated in the primordial baryon-photon plasma. These waves imprint a characteristic scale in the two point correlation function of the galaxies. This scale, called Linear Point, is defined as the mid-point between the maximum and the minimum of the correlation function at scales of about 150 Mpc.
In my talk, I discuss why the Linear Point is a cosmic ruler that enables us to measure cosmological distances without the need to model the impact of non-linearities on the correlation function of galaxies.
Finally, I focus on my current research in the context of the Euclid mission. We are studying the accuracy and the expected precision of the Linear Point measurements on mock catalogs (dark matter particles, halos and galaxies), based on the mission's characteristics. This work is necessary for preparing to apply the Linear Point to Euclid data.

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