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What quasars can tell us on the accelerating Universe

Wednesday, 7 July 2021 10:00 (20 minutes)

I will present the latest results on our analysis of the non-linear X-ray to ultraviolet luminosity relation in a sample of optically selected quasars from SDSS, cross-matched with the most recent XMM-Newton and Chandra catalogues. I will show that this correlation is very tight, implying that the observed relation is the manifestation of an ubiquitous (but still unknown) physical mechanism, that regulates the energy transfer from the accretion disc to the X-ray emitting corona in quasars. I will then discuss what the perspectives of quasars in the context of observational cosmology are and present new measurements of the expansion rate of the Universe in the redshift range $z=0.5-7.5$ based on a Hubble diagram of quasars.

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