

## Probing dark energy with the Large Synoptic Survey Telescope (LSST).

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The Large Synoptic Survey Telescope (LSST) system will produce a 6-band wide and deep field astronomical survey of over 20,000 square degrees of the southern sky using an 8.4-meter ground-based telescope. Each patch of sky will be visited about 1000 times in ten years.

Its camera will be the world largest one, with 3200 Megapixels. It will cover a huge 9.6 square degree field of view, and will consequently produce an impressive amount of data 30 terabytes per night.

Science objectives of the LSST include dark energy, solar system, optical transients and galactic structure.

After having presented in details the experiment, I will mainly focus on showing how the nature of dark energy can be investigated by LSST through multiple probes, all using the same survey data. The two most powerful of these are weak gravitational lens tomography and baryon acoustic oscillations (BAO). I will emphasize on BAO and present the expected LSST accuracy on dark energy parameters reconstruction.

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