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Inferring properties of dark energy from the large scale structure of the universe

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The structure of galaxies we see in the sky today was seeded in the very early universe. The evolution from initial tiny density perturbations to the cosmic web of voids, clusters and filaments of galaxies tells us about what the universe is made of. There are many ways to utilise this large scale structure to probe cosmology, but measuring the growth rate itself in the nearby universe is particularly powerful. In this talk I will cover how we can measure the growth rate from the velocities of supernovae. We now have access to a large set of galaxy and velocity data, with much more to come in the near future from various different surveys. Using these new and upcoming data, we may be able to distinguish between the effects of basic cosmological constant dark energy or modifications to our theory or gravity.

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