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# Measuring the Universe with DESI

*Tuesday 8 April 2025 13:40 (1 hour)*

The Dark Energy Spectroscopic Instrument (DESI) is the first of a new generation of Dark Energy experiments, and probes evolution in the universe using galaxy clustering. Within the galaxy clustering signal, the projected location of the Baryon Acoustic Oscillations (BAO) acts as a standard ruler to map cosmic evolution. I will present the latest BAO results from the DESI Data Release 2 (DR2) sample, which contains 3 years of data, and their impact on our understanding of dark energy and neutrino masses. I will explain some of the difficulties in expanding this work to model the full clustering signal, and the work underway to provide more robust results. I will then review how we can extend this work using voids, regions in the universe containing very few galaxies, which act as a standard volume rather than a standard ruler. Finally, I will consider how the amplitude of the BAO signal can help us measure the Hubble constant, potentially helping to solve the Hubble tension.

**Presenter:** PERCIVAL, Will (University of Waterloo)

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