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Cosmological results from the Dark Energy Spectroscopic Instrument

Thursday 3 April 2025 12:00 (30 minutes)

The Dark Energy Spectroscopic Instrument (DESI) is conducting by far the most comprehensive survey of galaxy distances to date. Its primary goal is a precision measurement of the expansion of the Universe over the past 10 billion years. This expansion may reveal more about the nature of one of the biggest mysteries of modern physics, the late-time accelerating effect called Dark Energy.

I will review the results of Baryonic Acoustic Oscillation measurements, which provide a 'standard ruler' of fixed physical scale that can be observed to track expansion from the embryonic to the adult universe. The first year of DESI data, together with cosmic microwave background and supernova observations, has provided tantalising evidence that Dark Energy indeed is not a constant vacuum energy density. The analysis of three years of DESI galaxy observations, potentially concluded by Göttingen25, will again sharpen what we know about the recent past and the future of our cosmos.

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Session Classification: Invited Overview Talks / Hauptvorträge