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How Can Machine Learning and Simulations Help Us Study Our Universe (and "Astronomically" Large Datasets)?

Monday, 24 February 2025 15:00 (1 hour)

As astronomers and cosmologists grapple with the inherently "astronomical" size of their datasets, machine learning is rapidly being adopted in a variety of astrophysical applications. In this talk, I will showcase some examples of how it can potentially revolutionize the way we study our Universe. In one example, I will discuss how machine learning could be utilized to extract the fundamental parameters of our Universe from a large galaxy survey. In another example, I will present a pipeline that estimates the baryonic (visible) properties of galaxies based only on their dark matter (invisible) content in a large dark matter-only simulation.

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Session Classification: Monday Talks