

Vulcano Workshop 2022 - Frontier Objects in Astrophysics and Particle Physics



Contribution ID: 44

Type: **Talk**

Do We Understand the Universe?

Monday, 26 September 2022 19:05 (25 minutes)

Astronomical Surveys have brought us a major advance in our understanding of the Universe and its physical laws. All observations in the sky can be described by the standard model of cosmology with just six free parameters. However, description is not the same as understanding. Despite the phenomenal progress of astronomical surveys, only a few percentage of the sky has been surveyed. Future and ongoing surveys will aim at mapping most of the sky. This rich dataset will provide us with the tools to understand the sky, rather than describe it. In this talk I will review the current status of our understanding of the Universe, the status of the “tensions” and will present new results about the nature of the energy components of the universe: dark matter and dark energy, and also about how the Universe might have originated and evolved.

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Session Classification: Astrophysics/Cosmology