

Unveiling the Universe's Beginning: Insights from Particle Physics

We are living in the era of precision cosmology, where ever-improving observations and robust theoretical frameworks allow us to probe the Universe with unprecedented accuracy. Yet, the deepest questions—about its origin, composition, and ultimate fate—demand tools from high-energy physics. In this talk, I will survey what we confidently know, highlight the mysteries that remain, and explore possible pathways to venture beyond our current horizon of understanding.