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Ciclo Hablemos de Física, Facultad de Ciencias Físicas (UCM)*

Celebrando la Relatividad General de Albert Einstein

Why is the Universe so big and old?

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Abstract

Cosmological inflation is a proposal that for a while, very early in its history, the Universe expanded (almost) exponentially fast. This could explain why the Universe is so large and has not (yet) collapsed. Inflation can also explain why the Universe is so homogeneous and isotropic on very large scales, and why its geometry is (almost) flat. Moreover, quantum effects during inflation could have generated the structures seen in the Universe today, such as galaxies and clusters. Measurements of the cosmic microwave background are probing models of inflation, and may show us how to connect them with particle physics, quantum gravity and perhaps string theory.