

Dark Energy Theory Overview

Tuesday, 26 July 2016 10:00 (30 minutes)

The problem facing us with dark energy has manifested itself through the many theoretical models that have been published, all with the same goal, to explain the late time acceleration of the Universe. I will try and summarise the state of play with the models, recap the original cosmological constant problem which prevents many of us from simply accepting there is a constant energy density driving the acceleration, and discuss some recent attempts to address the problem. Throughout we will see the need for fine tuning which enters with pretty much every model, and we will see how particle physics considerations can have a huge impact on the type of models that are consistent with the data.

Summary

The problem facing us with dark energy has manifested itself through the many theoretical models that have been published, all with the same goal, to explain the late time acceleration of the Universe. I will try and summarise the state of play with the models, recap the original cosmological constant problem which prevents many of us from simply accepting there is a constant energy density driving the acceleration, and discuss some recent attempts to address the problem. Throughout we will see the need for fine tuning which enters with pretty much every model, and we will see how particle physics considerations can have a huge impact on the type of models that are consistent with the data.

Based on (arXiv number)

Primary author: COPELAND, Ed (Nottingham University)

Presenter: COPELAND, Ed (Nottingham University)

Track Classification: Dark Energy and Modified Gravity