

Big bounce baryogenesis

Wednesday 24 June 2020 10:00 (1 hour)

Zoom meeting: <https://cern.zoom.us/j/7930190483> (password: see email)

Format: 40 minutes talk + 20 min discussion

Virtual Axion Institute: The discussion on this talk can be continued in Neil's virtual guest office.
<https://mattermost.web.cern.ch/axions/channels/neil-barrie>

Abstract: We explore the possibility of an Ekpyrotic contraction phase harbouring a mechanism for Baryogenesis. A Chern-Simons coupling between the fast-rolling Ekpyrotic scalar and the Standard Model Hypercharge gauge field enables the generation of a non-zero helicity during the contraction phase. The baryon number subsequently produced at the Electroweak Phase Transition is consistent with observation for a range of couplings and bounce scales. Simultaneously, the gauge field production during the contraction provides the seeds for galactic magnetic fields and sources gravitational waves, which may provide additional avenues for observational confirmation.

Presenter: BARRIE, Neil (Kavli IPMU)

Session Classification: Baryogenesis