



Contribution ID: 18

Type: **Parallel talk**

## **Baryogenesis from Primordial Magnetic Helicity**

*Thursday 22 June 2017 17:45 (15 minutes)*

The origin of the matter / antimatter asymmetry is one of the most persistent and challenging problems in the study of the early universe. In this talk I will describe how the baryon asymmetry may have arisen from the decaying helicity of a primordial (hyper-)magnetic field without further need for beyond-the-SM particles or interactions. The relic baryon asymmetry is shown to depend sensitively on the dynamics of the Standard Model electroweak crossover, where the hypermagnetic field is converted into an electromagnetic field. Since the primordial magnetic field will persist in the universe today, observations of this relic intergalactic magnetic field today may inform our understanding of the cosmological excess of matter over anti-matter.

### **Presentation type**

Parallel talk

**Primary author:** LONG, Andrew (University of Chicago)

**Co-author:** KAMADA, Kohei (Ecole Polytechnique Federale de Lausanne (CH))

**Presenter:** LONG, Andrew (University of Chicago)

**Session Classification:** Parallel I