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B-Mesogenesis: Baryogenesis and Dark Matter from B Mesons

Tuesday 29 June 2021 12:00 (50 minutes)

I will present a new mechanism for Baryogenesis and Dark Matter production: B-Mesogenesis. Within the B-Mesogenesis paradigm, both the dark matter relic abundance and the baryon asymmetry of the Universe arise from the CP violating oscillations of B mesons and their subsequent decays in the early Universe. This mechanism would have distinctive experimental signals that I will discuss in detail: i) the new decay mode of B mesons into a baryon and missing energy and ii) a positive semileptonic asymmetry in neutral B meson decays. I will discuss the reach of current collider experiments to these signatures, and I will show that a combination of measurements at Belle II, LHCb, ATLAS & CMS can fully test B-Mesogenesis.

Presenter: ESCUDERO, Miguel

Session Classification: Flavour phenomenology