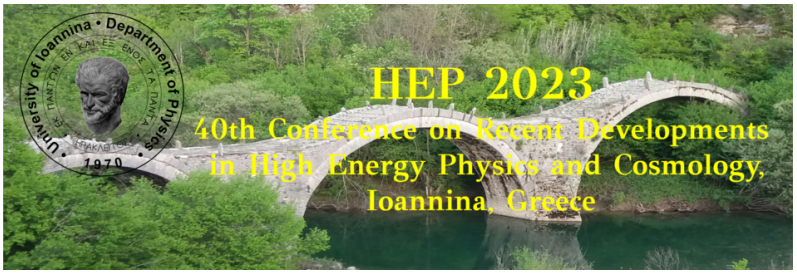

Contribution ID: **45** Type: **not specified**

Cosmological models with freeze-in baryogenesis

Friday 7 April 2023 11:00 (30 minutes)

In this talk we will discuss models which allows the simultaneous generation of the baryon asymmetry of the Universe along with its dark matter content. We employ the out-of-equilibrium decays of heavy bath states into a feebly coupled dark matter particle and Standard Model charged fermions. These decays lead to dark matter production via the freeze-in mechanism and, assuming that they further violate CP, can generate a viable matter-antimatter asymmetry in the resonant regime. Moreover, we will discuss how the presence of a fluid that temporarily dominates the energy content of the Universe affects the predictions of this scenario. We will show that this additional cosmic component has a significant impact on the predictions of concrete microscopic models, allowing for reheating temperatures which are much lower than those required in the simplest cosmological scenario.

Presenter: Prof. SPANOS, Vassilis (Department of Physics National and Kapodistrian University of Athens)

Session Classification: Plenary