Contribution ID : **6** Type : **not specified**

Neutrino reheating predictions with non-thermal leptogenesis

Friday, 26 September 2025 14:30 (30)

Connecting inflation with neutrino physics through non-thermal leptogenesis via direct inflaton-right-handed neutrino (RHN) coupling naturally incorporates neutrino reheating, leaving no ambiguity regarding the early history of the Universe. We demonstrate that non-thermal leptogenesis from inflaton decay expands the viable parameter space compared to thermal leptogenesis and provides a natural link to inflation. By closely examining the dynamics of neutrino reheating, we establish a direct connection between baryon asymmetry and the spectral index for the first time. This approach places these two important observables on the same plane and yields specific predictions that help break the degeneracy among inflationary models. The well-motivated and economical framework offers a simple, natural, and testable description of the early Universe.

Primary author(s) : ZHANG, Xinyi (Hebei University)

Presenter(s) : ZHANG, Xinyi (Hebei University)

Session Classification : Plenary