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## Looking for the imprints of high scale non-thermal leptogenesis in CMB

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We discuss the imprint of high scale non-thermal leptogenesis on cosmic microwave background experiments from the measurement of spectral index ( $n_s$ ) and tensor to scalar ratio ( $r$ ) which is otherwise inaccessible to the conventional laboratory experiments. We argue that non-thermal production of baryon (lepton) asymmetry from tree level inflaton decay is sensitive to the reheating dynamics of the Universe after the end of inflation. Such dependence provides detectable imprint on the  $n_s - r$  plane which is well constrained by the Planck experiment. We investigate two separate cases, (i) inflaton decays to radiation dominantly and (ii) inflaton does not decay to radiation at tree level. We obtain the corresponding estimates for  $n_s$  and  $r$  and find the later case to be more predictive in view of recent Planck/BICEP data. The method presented here is generic and can be implemented to various kind of single field inflationary models given the conditions for non-thermal leptogenesis is satisfied.

### Session

Astroparticle Physics and Cosmology

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