## **Particle Physics Challenges**



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## Low-scale leptogenesis and dark matter

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I will discuss extension of the ARS mechanism which can explain dark matter

## Summary

An extension of the Standard Model with Majorana singlet fermions in the 1-100 GeV range can give rise to a baryon asymmetry at freeze-in via the CP-violating oscillations of these neutrinos: this is the well known ARS mechanism. In this paper we consider possible extensions of the minimal ARS scenario that can account not only for successful leptogenesis but also explain other open problems such as dark matter. We find that an extension in the form of a weakly coupled B-L gauge boson, an invisible QCD axion model, and the singlet majoron model can simultaneously account for dark matter and the baryon asymmetry.

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