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## **Leptogenesis: Improving predictions for experimental searches (15' + 2')**

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Right handed neutrinos could not only explain the observed neutrino masses via the seesaw mechanism, but also generate the baryon asymmetry of the universe due to their CP-violating interactions in the early universe. If their Majorana masses are at the TeV scale or smaller, these particles can be found at the LHC or future colliders, including SHiP, FCC or CEPC. In addition, the relevant source of CP-violation may be experimentally accessible, and they can mediate observable neutrino double beta decay. In these low scale leptogenesis scenarios, the matter-antimatter asymmetry is generated at temperatures when the heavy neutrinos are relativistic. In this regime, thermal corrections to the transport equations in the early universe are large. We review recent progress in a systematic treatment in the framework of nonequilibrium quantum field theory that allows to make reliable theoretical predictions for the properties of the heavy neutrinos.

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