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## Supernova bounds on new scalars from resonant and soft emission

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New light CP-even scalars arise in a variety of BSM scenarios aimed at solving the dark matter puzzle, generating neutrino masses and/or tackling the electroweak hierarchy problem. I will discuss supernova cooling constraints on new scalars that mix with the Higgs, couple only to nucleons, or couple only to leptons. In all these cases scalars with masses smaller than the plasma frequency in the supernova core are efficiently produced by resonant mixing with the in-medium longitudinal degree of freedom of the photon. The resulting bounds are free from uncertainties associated to the rate of emission of the scalar in nucleon-nucleon scatterings, which would otherwise badly affect the Higgs-mixed and nucleophilic scenarios.

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