



Contribution ID: 173

Type: **not specified**

## How Heavy can Neutralino Dark Matter be?

*Monday, 23 August 2021 16:40 (20 minutes)*

What is the upper limit of the mass of the neutralino dark matter whose thermal relic is consistent with the observation? If the neutralino dark matter and colored sparticles are extremely degenerated in mass, with a mass difference less than the QCD scale, the dark matter annihilation is significantly increased and enjoys the “second freeze-out” after the QCD phase transition. In this case, the neutralino dark matter with a mass much greater than 100 TeV can realize the correct dark matter abundance. We study the dark matter abundance and its detection in the case of such highly degenerated mass spectrum of the neutralino dark matter and colored supersymmetric particles.

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**Session Classification:** Split SUSY and High-Scale SUSY

**Track Classification:** Split SUSY and High-Scale SUSY