

**FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING**

**PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING**

MLL-KOLLOQUIUM

Donnerstag, 31.01.2019, 16¹⁵ Uhr

Hörsaal der LMU in Garching, Am Coulombwall 1
Treffen zum gemeinsamen Kaffee 16 Uhr

Dr. Julia Harz

(Physik Department, Technische Universität München)

Advances in Dark Matter Abundance Calculations

Different observations point towards the existence of dark matter. Even though we do not know its particle-nature yet, we know its abundance with an unprecedented precision. Thanks to the measurements of the Planck satellite, the relic density can be determined with an accuracy of 1% in terms of new particles, its abundance can be used as a powerful observable to constrain models that go beyond the Standard Model of particle physics. However, the accuracy of current theoretical calculations and software tools lags behind the experimental precision. Thus, there is common effort in place towards more precise theoretical predictions. After a general introduction to the topic, I will review recent progress in the computation of the dark matter relic density including non-perturbative effects such as Sommerfeld enhancement and bound state formation.

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