



# ***EINLADUNG***

im Rahmen des Seminars für Mathematische Physik

zum Vortrag

von

**Yann Mambrini**

University: LPT Orsay

über

***„Alternative scenarios for dark matter productions  
in the Early Universe, and its consequences“***

**Abstract:**

Despite very indirect but clear astrophysical and cosmological evidences of the presence of dark matter in our Universe, its nature is still unknown. Not only the recent direct detection limits exclude the simplest electroweak extensions of the Standard Model like Higgs portal but even question the WIMP paradigm. Recently, refined cosmological analysis on the reheating mechanism combined with the freeze-in mechanism showed that EeV dark matter particles can be produced from the thermal bath at very early stages of the reheating. From GUT constructions to high-scale supergravity, several motivated models enter in this category.

We will detail in this seminar how the production mechanism appears naturally in several motivated UV extensions of the Standard Model, and how  $\sim$ EeV signals observed by present and future neutrino detectors could be a signature of such mechanism.

**Zeit:** Montag, 24.02.2020, 14.00

**Ort:** Fakultät für Physik, Kleiner Seminarraum,  
Boltzmanngasse 5, 5. Stock

gez.: P. Anastasopoulos