

FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 21.04.2016, 16⁰⁰ Uhr

Hörsaal des IAS, Lichtenbergstraße 2 a, Garching

(Bitte Zeit und Ort beachten !)

Prof. Björn Garbrecht

(Physik-Department, TU München)

Aspects of the Physics of the Early Universe: Matter-Antimatter Asymmetry and False Vacuum Decay

I will present physics topics and theoretical methods in early universe cosmology taking as examples baryogenesis (i.e. the emergence of the matter-antimatter asymmetry) and the decay of metastable vacua. Concerning baryogenesis, I will explain how the requirements of charge-parity violation and thermodynamic irreversibility can be addressed with non-equilibrium techniques. As an application, I will consider the possibility of baryogenesis via GeV-scale sterile neutrinos, that are experimentally accessible presently or within the foreseeable future. Radiative corrections to the decay of metastable vacua are an example for computations in inhomogeneous background fields. Our goal is here to substantially improve on the calculations of the lifetime of the Standard Model false vacuum.

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