

FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

Garching Maier-Leibnitz-Kolloquium

Donnerstag, 02.06.2022, 16¹⁵ Uhr

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

Dr. Thomas Pöschl

(Physik Department E18, TU München)

Modeling of Galactic Antinuclei Fluxes from Cosmic-Ray Interactions

The abundances and energy spectra of cosmic-ray particles are an excellent probe to study processes in the galaxy. They can e.g. hint to exotic sources of energetic particles, such as dark-matter annihilation. The precise measurement of antinuclei, such as antiprotons, antideuterons, or antihelium, is particularly informative since these particles are expected to be only rarely produced in conventional reactions. However, the interpretation of antinuclei measurements requires a good understanding of all involved processes of the creation and propagation of the antiparticles. A realistic estimate of the involved modeling uncertainties is especially needed in order to distinguish potential exotic contributions from ordinary production. In this talk, I review the current understanding of the production and propagation mechanisms of charged cosmic rays in the galaxy and the respective modeling of galactic cosmic-ray fluxes. A special focus will be put on galactic antiprotons and heavier antinuclei. In particular, I discuss systematic uncertainties of the propagation models and the accuracies of current production models of antinuclei.

Hybrid online access via ZOOM:

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Meeting ID: 856 802 8697

Passcode: 786201

gez. Peter Thirolf
Tel. 289-14064

gez. Norbert Kaiser
Tel. 289-12367