

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

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

MLL-KOLLOQUIUM

Donnerstag, 20.10.2011, 16¹⁵ Uhr

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

Prof. Avraham Gal

**Racah Institute of Physics, Hebrew University, Jerusalem, Israel
(visitor at the Excellence Cluster 'Universe', TUM)**

Overview of Strangeness Nuclear Physics

The properties of hypernuclei, nuclei in which hyperons are particle-stable, provide a test of hyperon-nucleon (YN) and hyperon-hyperon (YY) interaction models required to extrapolate into multi-strangeness on Earth (RHIC, LHC) and in Heaven (neutron stars). In this talk I will review aspects of our present knowledge of single-Lambda hypernuclei, as revealed through their production and decay modes, and of Sigma-hyperon nuclear interactions. For strangeness -2 and beyond, I discuss the onset of nuclear binding which depends critically on the strength of the YN and YY interactions, suggesting scenarios for Strange Hadronic Matter. Finally, I briefly review aspects of antikaon-nuclear interactions, particularly the current quest for quasibound nuclear states of antikaons, highlighting the issue of kaon condensation.

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