FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 11.05.2017, 16^{15} Uhr

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

Dr. Torsten Dahms

(Universe Cluster and Physik Department, TUM)

Low-mass dileptons: A thermometer for the hottest stuff in the universe

The goal of ultrarelativistic heavy-ion collisions at RHIC and the LHC is to study the properties of the quark-gluon plasma (QGP), a high-temperature phase of deconfined quarks and gluons. Electromagnetic radiation, in form of photons or lepton pairs, is a penetrating probe that allows the investigation of the full time evolution and dynamics of the produced matter, as it does not undergo strong final-state interactions. The dilepton spectrum is extremely rich in physics sources: Thermal black-body radiation is of particular interest as it carries information about the QGP temperature. Medium modifications of the spectral function of short-lived vector mesons are linked to the potential restoration of chiral symmetry at high temperatures. Correlated lepton pairs from semi-leptonic charm and beauty decays provide additional information about the heavy-quark energy loss. In this colloquium, dilepton results from the SPS, RHIC and the LHC will be reviewed and the prospects for future low-mass dilepton measurements.

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