

FAKULTÄT für PHYSIK
LUDWIG-MAXIMILIANS-UNIVERSITÄT
MÜNCHEN/GARCHING

PHYSIK-DEPARTMENT
TECHNISCHE UNIVERSITÄT MÜNCHEN
MÜNCHEN/GARCHING

MLL-KOLLOQUIUM

Donnerstag, 26.04.2018, 16¹⁵ Uhr

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

Dr. Ante Bilandzic

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Demystifying the quark-gluon plasma

The primary objective of heavy-ion program at ultrarelativistic colliders is to explore the properties of an extreme state of matter, the Quark-Gluon Plasma (QGP), in which quarks and gluons move freely over distances that are large in comparison to the typical size of a hadron. Anisotropic flow phenomenon, which measures the momentum anisotropy of final-state particles produced in heavy-ion collisions, turned out to be the most informative probe to access the transport properties of the QGP, for instance its shear viscosity. In this talk an overview of anisotropic flow results so far in heavy-ion physics at Large Hadron Collider (both in Run 1 and Run 2) will be presented.

The primary analysis techniques used in anisotropic flow measurements are multiparticle azimuthal correlations. Although widely used, very little is known about the statistical and mathematical properties of multiparticle azimuthal correlations beyond their first moments. Therefore their technical aspects, foreseen theoretical improvements and applicability in other areas of physics (for instance to constrain the equation of state of neutron stars) will be outlined as well in the talk.

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