



**ΚΟΙΝΟ ΣΕΜΙΝΑΡΙΟ ΚΕΝΤΡΟΥ ΚΒΑΝΤΙΚΗΣ ΠΟΛΥΠΛΟΚΟΤΗΤΑΣ ΚΑΙ
ΝΑΝΟΤΕΧΝΟΛΟΓΙΑΣ & ΚΕΝΤΡΟΥ ΘΕΩΡΗΤΙΚΗΣ ΦΥΣΙΚΗΣ ΚΡΗΤΗΣ /
JOINT CCQCN -CCTP SEMINAR**

Wednesday, 10 December 2014

14:00-15:00

2nd Floor Seminar Room

Magnetohydrodynamics and charged currents in heavy ion collisions

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Abstract

The hot QCD matter produced in any heavy ion collision with a nonzero impact parameter is produced within a strong magnetic field. We study the imprint the magnetic fields produced in non-central heavy ion collisions leave on the azimuthal distributions and correlations of the produced charged hadrons. The magnetic field is time-dependent and the medium is expanding, which leads to the induction of charged currents due to the combination of Faraday and Hall effects. We find that these currents result in a charge-dependent directed flow v_1 that is odd in rapidity and odd under charge exchange. It can be detected by measuring correlations between the directed flow of charged hadrons at different rapidities..

