



ENRICO FERMI INSTITUTE COLLOQUIUM

SEARCH FOR THE CHIRAL MAGNETIC EFFECT WITH ISOBAR COLLISIONS AT THE RELATIVISTIC HEAVY ION COLLIDER

PRITHWISH TRIBEDY,
BNL

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3:30 PM

MCP 201

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THE UNIVERSITY OF
CHICAGO

Relativistic heavy ion collisions (HICs) at the modern accelerators like the Relativistic Heavy Ion Collider and the Large Hadron Collider provide unique testing ground for the Quantum Chromodynamics (QCD) at high energies. The early stages of such collisions generate highest densities allowed by QCD and eventually leads to the formation of a liquid-like quark-gluon matter (QGP) that filled the microsecond-old universe. Interestingly, the early stages of HICs also generate the strongest known electromagnetic fields (10^{18} Gauss) in the universe. The quantum fluctuations in the early stages of such collisions amidst such strong fields can lead to violation of local P and CP symmetries of strong interaction. As a consequence of such extreme conditions one expects to observe novel phenomena such as the Chiral Magnetic Effect (CME). Previous measurements of the CME remain inconclusive because of large background contributions. In order to better control the influence of signal and backgrounds, the STAR collaboration has recently performed a blind analysis on a large data sample of approximately 3.8 billion isobar Ru+Ru and Zr+Zr collisions at the center of mass energy of 200 GeV at the Relativistic Heavy Ion Collider. In this colloquium I will briefly introduce the history of the CME search in HICs and discuss the findings from the isobar blind analysis.