

Abstract Submitted
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CME search at STAR using the Event Plane Detector YU HU,
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COLLABORATION — Recently Relativistic Heavy Ion Collider (RHIC) collided
isobars (Ru+Ru and Zr+Zr) and STAR collaboration is currently performing blind
analysis to make a decisive test of the Chiral Magnetic Effect (CME) at the top
RHIC energy ($\sqrt{s_{NN}} = 200$ GeV). Meanwhile, the observability of CME has been
conjectured to be dependent on $\sqrt{s_{NN}}$ due to changes in the lifetime of the magnetic
field, the strength of CME signal and non-CME background. So what happens at
lower energies? The Event Plane Detector (EPD) installed in the year 2018 provides
a unique capability for CME search over a wide range of energies. At lower energies
the EPD acceptance ($2.1 < |\eta| < 5.1$) covers the region where particle production
is accompanied by a large directed flow of beam fragments, stopped protons and
spectators. Therefore, the EPD can measure the event plane associated with the
spectators, strongly correlated to the magnetic field, with good precision. This opens
up new opportunities to revisit CME search at lower energies with the BES-II data
recently collected by STAR. In this presentation, I will focus on the CME search
using the EPD and present the first measurements in Au+Au collision at $\sqrt{s_{NN}} =$
27 GeV. I will also discuss STAR's plan for blind analysis of the isobar.

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