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Azimuthal charged particle correlations as a probe for local strong parity violation in heavy ion collisions

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One of the most interesting and important phenomena predicted
to occur in heavy ion collisions is the local strong parity violation.
In non-central collisions, it is expected to result in charge separation
of produced particles along the system's orbital momentum.
I will report on results of the charge separation measurement
in Au+Au and Cu+Cu collisions at sqrt{sNN} = 200 and 62 GeV
with the STAR detector at RHIC based on
three-particle mixed harmonic azimuthal correlations.
Systematic study of parity conserving (background) effects
with existing heavy ion event generators,
and their possible contributions to the observed
correlations will be also presented.

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