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Estimation of the background effects in the chiral magnetic effect measurements using charge-dependent correlations relative to the fourth harmonic event plane JOCELYN MLYNARZ, Wayne State University — The measurements of the charge-dependent correlations in a heavy-ion collisions allow to experimentally probe the Chiral Magnetic Effect (CME). While being sensitive to the CME effects, charge dependent correlations are also susceptible to potentially large background contributions which may e.g. originate from effects of the local charge conservation or in general due to any particle production from clusters modulated by the anisotropic flow. In this talk, we present results from charge-dependent correlations with respect to the second and fourth harmonic event planes measured in Pb+Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV at the LHC using data from the ALICE detector. Correlation with respect to the 2nd harmonic event plane, $< cos(\phi_a + \phi_b - 2\Psi) >$, gives experimental sensitivity to the CME, while the fourth harmonic correlation, $< cos(2\phi_a + 2\phi_b - 4\Psi) >$, are insensitive to the CME and provide additional constrains on the background models in the CME studies.

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