

The E-M field in small collision system p+A with a transversely polarized proton

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With experimental data of DIS involving transversely polarized proton, we have calculated the 3-D charge density inside a polarized proton, which is found to have a significant non-spherical symmetry. Then we have calculated the properties of E-M field generated by a single transversely polarized proton. Based on them, the E-M field generated in small collision system p+A which involving a transversely polarized proton are studied. We find that the orientation of this E-M field has a significant dependence on the direction of transverse polarization of the proton, and the correlation function ($\Delta\gamma$) has also significant dependence on the angle between the reaction plane and the direction of polarization. This finding provides a new direction for probing the chiral magnetic effect (CME).

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