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## **Explore the collision geometry using the linear polarized photons**

Relativistic heavy ions carry giant electromagnetic fields which can be equivalent to a field of quasireal and linearly polarized virtual photons. The vector meson production from linearly polarized photons possesses a distinctive signature in the asymmetries of the decay angular distributions. We compute the second-order modulation in azimuth as function of the vector meson ( $\rho_0$  and  $J/\psi$ ) transverse momentum  $p_T$  and the impact parameter  $b$  in non-central heavy-ion collisions. Our study shows that the second-order modulation sensitively relies on the impact parameter, which provide a new method to determine the reaction plane. This method is independent of the evolution of QGP, it can help us better relate the anisotropy of the final momentum space to the anisotropy of the initial coordinate space.

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