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## Measurement of direct photon collective flow in Au+Au $\sqrt{s_{NN}}=200\text{GeV}$ collisions at RHIC-PHENIX experiment

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Due to small cross section in the QGP direct photons preserve information about different stages of the heavy ion collisions.

Therefore, detailed measurement of direct photons can be considered as a powerful probe to study QGP physics.

Photons have different angular emission patterns depending on their production mechanism.

The second order azimuthal anisotropy ( $v_2$ ) of direct photons is measured at PHENIX, and non-zero positive  $v_2$ , comparable to that of hadrons, is observed at low  $p_T$ .

The production mechanism of the positive  $v_2$  has not yet been well understood, and the third order azimuthal anisotropy ( $v_3$ ) of direct photons has been expected to provide additional constraints for theoretical models.

We report the current results of direct photon  $v_2$  and  $v_3$  in Au+Au  $\sqrt{s_{NN}}=200\text{GeV}$  collisions at PHENIX.

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