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## PHENIX measurements of thermal photon production in Au+Au collisions

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Photons are unmodified once produced in heavy ion collisions, so they provide information about the entire thermal evolution of the medium. PHENIX measured photon yields exceeding that expected from initial hard scattering and observed a large azimuthal anisotropy,  $v_2$ , of these soft photons with respect to the reaction plane. The large yield and  $v_2$  continue to challenge simultaneous quantitative descriptions and raise important questions about the early time dynamics in the medium. More differential measurements provide information to help distinguish various potential explanations for this thermal photon puzzle. We present yields of direct photons from Au+Au collisions at  $\sqrt{s_{NN}}=62.4$  GeV and the yield,  $v_2$ , and  $v_3$  from Au+Au collisions at  $\sqrt{s_{NN}}=200$  GeV.

### On behalf of collaboration:

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