

# Direct-photon production in heavy ion collisions at RHIC

*Friday 19 July 2024 11:36 (17 minutes)*

Direct photons are emitted throughout the development of a relativistic heavy ion collisions; their observation, therefore, provides a snapshot of the evolution of the collisions. This talk will present the latest results of the PHENIX experiment at RHIC obtained from high statistics Au+Au data set taken at 200 GeV. The results expand earlier measurements and isolate the non-prompt direct photon component. The data show high yields that exhibit a power-law scaling behavior with system size with no apparent dependence on transverse momentum ( $p_t$ ). In contrast the inverse slope of the  $p_t$  spectra varies from 250 MeV at 1 GeV/c to close to 400 MeV by 3 GeV/c. Direct photons also exhibit a strong anisotropy with respect to the reaction plane for  $p_t$  of up to 5 GeV/c. These features are qualitatively consistent with calculations of thermal radiation from the collision but reconciling them quantitatively remains a challenge.

## Alternate track

### I read the instructions above

Yes

**Primary author:** Dr DREES, Axel (Stony Brook University)

**Presenter:** Dr DREES, Axel (Stony Brook University)

**Session Classification:** Heavy Ions

**Track Classification:** 07. Heavy Ions