High transverse momentum direct photons are penetrating probes in relativistic heavy ion collisions. Once produced, they leave the collision region virtually unaffected, even if a hot, dense partonic medium was formed. This is also the reason why direct photons are immune to the suppression observed for high \( p_T \) hadrons and jets in heavy ion collisions, but can probe the initial state effects. The nuclear modification factor of high \( p_T \) photons has been found consistent with unity in Au+Au collisions. It is of interest whether this applies not only for p+p and A+A but also for p+A collisions, especially the most central collisions. Comparing the centrality dependence of direct photon and hadron production in p+Au system will provide a test of the applicability of the Glauber model in such systems which has indeed been an interesting question. The talk will present the first measurement of high \( p_T \) photons in this asymmetric collision system.

**Collaboration (if applicable)**
- PHENIX

**Track**
- Electroweak Probes

**Contribution type**
- Contributed Talk

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