Low-p_T e^+e^- pair production in Au+Au collisions at $\sqrt{s_{\rm NN}} = 54.4$ GeV at STAR

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In high-energy heavy-ion collisions, strong electromagnetic fields arising from the Lorentz-contraction of large amounts of charge in nuclei generate a large flux of high-energy quasi-real photons. Dielectrons can be produced via the interaction of these photons. Dielectron production from photon-photon scattering is distinctly peaked at very low transverse momentum (p_T<0.15 GeV/c). Traditionally these photon-photon processes were expected to exist only in Ultra-Peripheral Collisions (UPC). However, it has been recently realized that even in peripheral collisions, the dielectron production at very low transverse momentum mainly originates from the two photon interactions, which provides a possible tool to directly measure the giant magnetic field created in heavy-ion collisions.

In this presentation, we will present measurements of dielectron production at low transverse momentum in peripheral (80-100%) Au+Au collisions at $\sqrt{s_{\rm NN}} = 54.4$ GeV at STAR.