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Di-lepton production in p+p collisions at $\sqrt{s_{NN}}$ = 200 GeV BINGCHU HUANG, LIJUAN RUAN, BNL, YIFEI ZHANG, LBNL, STAR COLLABORATION — Ultra-relativistic heavy ion collisions provide a unique environment to study properties of strongly interacting matter at high temperature and high energy density. One of the crucial probes of this strongly interacting matter are dilepton measurements at low ($M_{ll} < 1.1GeV/c2$) and intermediate ($1.1 < M_{ll} < 3GeV/c2$) mass region. The di-lepton spectra in the intermediate mass range are directly related to thermal radiation of the QGP. In the low mass range, we can study vector meson in-medium properties through their di-lepton decays, where any modifications observed may relate to the possibility of chiral symmetry restoration. Measurements in p+p collisions therefore provide a crucial reference for the corresponding measurements in heavy ion collisions. At STAR, the newly installed Barrel-Time-of-Flight detector (BTOF) offers high acceptance and efficiency for charged hadron identification at mid-rapidity. The BTOF, combined with measurements of energy loss (dE/dx) from the Time Projection Chamber (TPC), enables electron identification (eID) with high purity from low to high pT. In this talk, we will present the di-lepton continuum from 200 GeV p+p collisions carried out in 2009. We will utilize eID from the BTOF and TPC. The cocktail from simulation will be compared to the continuum. The omega yields via di-leptonic decays will also be reported.

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