

1 Dielectron production in Au+Au collisions at
2 $\sqrt{s_{\text{NN}}} = 54 \text{ GeV}$ at STAR

3 Zhen Wang (for STAR Collaboration)
4 Shandong University

4 Dielectrons are excellent probes of the Quark-Gluon Plasma (QGP) cre-
5 ated in high-energy heavy-ion collisions. Because they can be produced at all
6 stages of the collision system evolution and do not interact with the medium
7 strongly, which indicates that dielectrons carry the information from the ini-
8 tial stage to the final stage. In the low mass region (LMR, $M_{ee} < M_\phi$), the
9 mass spectra of vector mesons will be modified by the hot and dense medium
10 which is related to the chiral symmetry restoration in the medium. In the
11 intermediate mass region (IMR, $M_\phi < M_{ee} < M_{J/\psi}$), QGP thermal radiation
12 can be used as a QGP thermometer. However, it is complicated to measure
13 the QGP thermal radiation because of the heavy flavor semi-leptonic decay
14 contributions.

15 In this presentation, I will present the dielectron production in Au+Au
16 collisions at $\sqrt{s_{\text{NN}}} = 54 \text{ GeV}$ at STAR. With a 10 times larger data sample
17 than that at 62 GeV from the first phase of the STAR Beam Energy Scan
18 (BES-I) program, in-medium ρ modification can be studied with better pre-
19 cision and compared to different theoretical predictions. Furthermore, the
20 physics implications of these measurements will be discussed.