



Contribution ID: 39

Type: **parallel**

## **Non-perturbative dilepton production rate in strongly interacting QGP**

*Wednesday 6 August 2014 15:40 (20 minutes)*

We analyze the production rate of dileptons from the deconfined medium using a quark propagator obtained from a first principle lattice QCD numerical simulation. We calculate the dilepton production rate non-perturbatively at two temperatures in the deconfined phase with the quark propagator measured on the lattice. The photon-quark vertex is determined gauge-invariantly, so as to satisfy the Ward-Takahashi identity.

The obtained dilepton production rate shows an enhancement of order 10 or so compared with the rate from free quark systems at low invariant mass region and van Hove singularity. This rate could explain the discrepancy in the dilepton production yields in the low mass region between the PHENIX result and theoretical predictions.

**Author:** Mr KIM, Taekwang (Osaka University)

**Co-authors:** KITAZAWA, Masakiyo (Osaka University); ASAKAWA, Masayuki (Osaka University)

**Presenter:** Mr KIM, Taekwang (Osaka University)

**Session Classification:** Electromagnetic probes