Abstract Submitted
for the HAW14 Meeting of
The American Physical Society

Dilepton and photon production spectra above Tc calculated with a lattice quark propagator TAEKWANG KIM, MASAYUKI ASAKAWA, MASAKIYO KITAZAWA, Osaka University — We analyze the production rates of dileptons and photons from the deconfined medium using a quark propagator obtained from a first principle lattice QCD numerical simulation. We calculate the dilepton and photon production rates 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 spectra show enhancements of order 10 or so compared with these from free quark systems at low invariant masses and van Hove singularity. These spectra could explain the discrepancy in the dilepton production yields in the low mass region between the PHENIX result and theoretical predictions. The result on the photon production rate will also be reported.

Taekwang Kim
Osaka University

Date submitted: 16 Jun 2014 Electronic form version 1.4