

# Jet-energy loss in heavy ion collisions - where does the energy loss lose strength?

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We analyzed the nuclear modification factor for pion production in  $AuAu$  and  $CuCu$  collisions at very-high transverse momenta,  $p_T \geq 10$  GeV/c. Beyond this transverse momentum region the  $R_{AA}(p_T)$  is affected by both the initial state nuclear modifications (e.g. EMC-effect) [1] and the non-Abelian jet-energy loss at the final state [2]. At this very high momenta both are strong enough to suppress the  $R_{AA}(p_T)$  mostly below 1 at RHIC energies. We compare results using two different shadowing parameterization (HIJING [3] and HKN [4]) in our pQCD improved parton model [5].

We investigated a similar calculation for LHC energies in  $PbPb$  collisions. We estimate larger opacity value,  $L/\lambda = 8.0$  for the produced partonic matter in central collisions at the final state. This would result larger suppression at the high-momenta region, but results using HKN shadowing shown relatively small suppression at the  $10 \text{ GeV}/c \leq p_T \leq 100 \text{ GeV}/c$  momentum range.

## References

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