

# Hard Probes 2018: International Conference on Hard & Electromagnetic Probes of High-Energy Nuclear Collisions

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## A closer look into the peak shape in nuclear modification factor in relativistic heavy ion collisions

In relativistic heavy-ion collisions, a parton while traversing through the QGP medium gets modified energetically followed by fragmentation and hadronisation, leading to final state hadrons. This modification is reflected in the ratio of the pT spectra of final state hadrons from heavy-ion (AA) collisions to that of proton-proton (pp) collisions i.e. in the nuclear modification factors (RAA and RCP). An interesting observation in the measurements of the nuclear modification factor is the appearance of peak shape in low pT region (1-4 GeV/c).

In this work, we have defined a new quantity called the Integrated Suppression Fraction (ISF) to understand the behavior of this peak. We have further explored the role of collectivity and mass hierarchy in the origin of the peak. Double ratio for different particle species and energies have also been studied in this regard. A model study from EPOS has been conducted to compare the results obtained from data and for predictions of this behavior in highest available LHC energy for AA collisions.

### Summary

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