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## Comprehensive study of hadron production from small to large systems by PHENIX

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The mass dependence of anisotropic flow as a function of  $p_T$  in small systems observed at both RHIC and the LHC provided strong evidence of collective behavior and suggests the formation of the smallest QGP droplets in these systems. If the cause of this mass dependence is indeed radial flow, this should be reflected in the spectral shapes at low  $p_T$ . Further, one would expect hard scattered partons to lose energy in these QGP droplets.

PHENIX has measured particle production from a broad set of projectile-target combinations including p+Au, d+Au,  $^3\text{He}+\text{Au}$ , Cu+Cu, Cu+Au, Au+Au, and U+U. At low  $p_T$  the spectra can reveal how radial flow emerges with system size. At high  $p_T$  they carry information about energy loss.

We will present a comprehensive study of identified pion, kaon, proton, and  $\eta$  spectral shapes and nuclear modification factors as a function of system size and discuss the implications about radial flow and in-medium energy loss.

### Content type

Experiment

### Collaboration

PHENIX

### Centralised submission by Collaboration

Presenter name already specified

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