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## Modification of hadron production in small and large systems observed by PHENIX

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Hadron production in  $p+p$ ,  $p+A$ ,  $A+A$  collisions provides a look inside Quark Gluon Plasma, allowing to study its properties and characteristics, which is one of the main objectives in the field of high-energy nuclear physics. PHENIX has performed measurements of  $\pi^0$ ,  $K_S$ ,  $K^*$ , and meson production in  $p+p$ ,  $p+Al$ ,  $p(d, ^3He)+Au$ ,  $Cu+Cu$ ,  $Cu+Au$ ,  $Au+Au$  and  $U+U$  collisions at top RHIC energies. This rich collection of data sets allows for detailed studies of the cold and hot nuclear matter effects from small to large systems. The obtained spectra and nuclear modification factors will be presented and compared to theoretical model predictions where available.

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