

The QCD phase diagram and measurement of light flavor hadrons with the ALICE detector

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Thanks to its excellent particle identification performance during the Run I operation of the Large Hadron Collider, the ALICE experiment has measured the production yields of a complete set of light flavor hadrons in pp, p-Pb, and Pb-Pb collisions. The data spans a large dynamic range of seven orders of magnitude: from abundantly produced pions to rarely observed anti-nuclei and hyper-nuclei. Within the framework of the statistical hadronization model, the results can be related to the QCD phase boundary and chemical freeze-out parameters can be extracted. In this context, the production rates of light nuclei are particularly interesting due to their strong sensitivity on the chemical freeze-out temperature. In addition, a particular focus is put on results from p-Pb collisions and the question if a chemical equilibrium is observed in smaller systems. As an outlook, possible future measurements of net-baryon number fluctuations and implications for loosely bound two body hadron molecules are presented.