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## Hadron resonance gas, hadron production in ultra-relativistic nuclear collisions, and the QCD phase diagram

*Thursday 16 March 2017 14:30 (30 minutes)*

We will provide the connection between hadron production in ultra-relativistic nuclear collisions and the hadron mass spectrum. In particular, we will demonstrate that all hadron resonances are important up to a mass of about 2.5 GeV, but details (quantum numbers, widths, etc) of resonances above a mass of 2 GeV are not so important because of Boltzmann suppression. We will also discuss the precision and predictive power of this analysis and emphasize the connection of the three main parameters determined by the analysis (temperature  $T$ , baryo-chemical potential  $\mu_b$ , and fireball volume  $V$ ) to the values obtained from the QCD phase boundary as determined from Lattice QCD studies.

**Presenter:** Prof. BRAUN-MUNZINGER, Peter (GSI - Helmholtzzentrum für Schwerionenforschung GmbH (DE))

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