





Type: oral presentation

## Identify QCD transition in heavy-ion collisions with **Deep Learning**

Thursday 13 July 2017 12:10 (20 minutes)

Supervised learning with a deep convolutional neural network is used to identify the QCD equation of state (EoS) employed in relativistic hydrodynamic simulations of heavy-ion collisions. The final-state particle spectra \rho(p\_T,\Phi) provide directly accessible information from experiments. High-level correlations of \rho(p\_T,\Phi) learned by the neural network act as an "EoS-meter", effective in detecting the nature of the QCD transition. The EoS-meter is model independent and insensitive to other simulation input, especially the initial conditions. Thus it provides a formidable direct-connection of heavy-ion collision observable with the bulk properties of QCD.

## List of tracks

QCD phase diagram (BES)

Author: Dr ZHOU, Kai (FIAS, Goethe-University Frankfurt am Main)

Co-authors: WANG, Xin-Nian (Lawrence Berkeley National Lab. (US)); STOECKER, Horst (GSi); PETERSEN, Hannah; Dr PANG, Long-Gang (Frankfurt Institute for Advanced Studies, Goethe University); Dr SU, Nan (Frankfurt Institute for Advanced Studies)

Presenter: Dr ZHOU, Kai (FIAS, Goethe-University Frankfurt am Main)

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