

## Onset of Pion Condensation at the LHC

*Sunday 18 January 2015 13:10 (25 minutes)*

We show that the recent LHC data on transverse-momentum spectra of hadrons produced in PbPb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV can be explained by the hadronization out of equilibrium [1,2]. The values of our fit parameters suggest the onset of pion Bose condensation. We determine the number of pions in the condensate and make predictions for the pion spectra at low  $p_T$  [3]. We further argue that the Bose condensation has even stronger impact on the fluctuations and correlations of pions [4,5], and present some quantitative estimates of expected effects.

[1] V. Begun, W. Florkowski and M. Rybczynski,  
Phys. Rev. C 90 (2014) 5, 054912 [arXiv:1405.7252 [hep-ph]].

[2] V. Begun, W. Florkowski and M. Rybczynski,  
Phys. Rev. C 90 (2014) 1, 014906 [arXiv:1312.1487 [nucl-th]].

[3] V. Begun, W. Florkowski, work in progress.

[4] V. V. Begun and M. I. Gorenstein,  
Phys. Rev. C 77 (2008) 064903 [arXiv:0802.3349 [hep-ph]].

[5] V. V. Begun and M. I. Gorenstein,  
Phys. Lett. B 653 (2007) 190 [hep-ph/0611043].

**Primary author:** Dr BEGUN, Viktor (UJK)

**Presenter:** Dr BEGUN, Viktor (UJK)

**Session Classification:** Models for heavy-ion collisions