Contribution ID: **153** Type: **Poster**

On the antiparticle to particle ratios in Au-Au collisions at SIS-FAIR GSI energies

Thursday, 3 September 2015 16:30 (1h 30m)

At the new facility built at GSI Darmstadt (Germany) will be performed a large variety of nucleus-nucleus collisions at energies between 2 A GeV and 45 A GeV [1]. One of the detection systems that will use it is CBM (Compressed Baryonic Matter). An interesting objective of the experiment is that related to the phase transitions in nuclear matter formed in these conditions. The type of the phase transition and the specific features are other interesting aspects. In the present work we will extract basic information using antiparticle to particle ratios and thermal model predictions [2,3]. Search for the critical point in connection with the increase of the fluctuations and with the rapidity range will be done, too [4]. We use simulations with different codes (AMPT, UrQMD etc) done with the YaPT system from the research center "Nuclear matter in extreme conditions", Faculty of Physics, University of Bucharest.

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Session Classification: Poster