

## SRC@BMN experiment report

The goal of new experiment is to study the short range correlations (SRCs) in the collision of protons and nuclei with the detection of 2 outgoing protons in the kinematics close to  $90^\circ$  in the cms and recoil neutron (or nucleus) using BMN setup supplemented by new detectors. The proposed physics is devoted to the traditional direction of the investigations on SRCs structure carried out at Synchrotron/Nuclotron (experiments ALPHA, ANOMALON, DISK, PICASO, AYY, LNS, DSS etc.) . The advantage of the proposed experiment is that the results can be sensitive to the structure of not only isoscalar SRCs widely studied at JINR, but also to the structure of the isovector SRCs in nuclei. In this respect, the proposed experiment can bring new information of the cold dense matter and, certainly, should be supported.

However, there are several questions to the experimental details to be answered prior the presentation at PAC.

-Authors propose to introduce 4 new detectors, namely, the detection system for incoming ions, the detection system for 2 fast protons at large Pt, Cherenkov detector for residual nucleus and calorimeter for neutrons (NeuLAND from GSI). Seems, that the simulation presented is made on the level of the event generators without using of BMNRoot and Geant simulation for new detectors. For instance, the selection the pp pair by time-of-flight, coplanarity condition etc for real TOF400 detector is necessary to demonstrate the feasibility of the experiment.

-The expected statistics is based on the carbon beam intensity of  $10^6$  ions per spill on the LH2 target (of unknown length). The total trigger rate including possible background is not indicated. Also,  $10^6$  ions per spill with current zone shielding seems to be optimistic (  $10^5$  looks more realistic). Secondly, it is well known that due to bad timing structure of the extracted Nuclotron beam the actual data taking rate limit of current BMN DAQ system is quite low. Needs to check these values to take into account (if necessary) additional suppression factors in the statistics estimation.

-BMN experimental zone for the moment is not certified for the use of LH2 target. Therefore, the scenario with the use of CH2-C subtraction techniques should be also considered.

-The status of NeuLAND and GSI team is not clean at all. The special MoU between NeuLAND-BMN-MIT is required. Perhaps, some letter of the interest expression from NeuLAND will be enough for PAC.

-The request of 75K\$ seems to be underestimated taking into account new front detector, infrastructure for LH2 target, new supports for TOF400 and new electronics compatible with BMN DAQ.

-The main resource, namely, FTE from JINR involved in the SRC experiment is not indicated. On my glance, this is the key question, because the realization of the SRC experiment can be in conflict with the main physics program on heavy ions at BMN due to local manpower.

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