

## Performance of the Time-of-flight system at the BM@N experiment

*Wednesday 3 July 2024 17:45 (15 minutes)*

The BM@N is the first experiment at the NICA accelerator complex. It is focused to study baryonic matter at high density which provides the opportunity to investigate both the EOS, and to explore the degrees-of-freedom of this matter, including the search for new phases of high-density matter. For the purpose of charged particle identification in the BM@N, two time-of-flight systems TOF400 and TOF700 are used. To perform particle identification, it is necessary to measure the time of flight as precisely as possible. To maintain the systems' good time resolution, a sequence of calibrations has to be done. Firstly, it is the calibration of the integral nonlinearity of TDC channels, secondly, it is cable length correction, thirdly it is geometry alignment of the system, then time-amplitude correction using Time-Over-Threshold method and finally "time shift" correction. The procedure for calibration and final performance of TOF400 and TOF700 systems will be presented.

### Section

Design of new experimental facilities

**Primary author:** ZHAVORONKOVA, Irina (JINR)

**Co-authors:** KHUKHAEVA, Anastasia; RUMYANTSEV, Mikhail (JINR); MERTS, Sergei (JINR, LHEP); LENIVENKO, Vasilisa (LHEP)

**Presenter:** ZHAVORONKOVA, Irina (JINR)

**Session Classification:** Design of new experimental facilities