STATUS OF SOME PARTS OF THE TPC FOR THE MPD/NICA EXPERIMENT

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As part of the creation of a new accelerator complex NICA, a Multi-Purpose Detector (MPD) is being developed, the central part of which is a Time Projection Chamber (TPC).

The TPC being a large but conceptually simple detector must be constructed with very high precision to reduce nonlinear systematic effects. Together with the time of flight and inner tracker detectors, the TPC detector provides tracking, pattern recognition, vertex reconstruction and charged particle identification. High stability of the mechanical structure and uniformity of the drift field, the temperature, the drift gas purity and the gas gain have to be provided to get precise track reconstruction and energy-loss measurements. The TPC has a cylindrical body with a diameter of 2.8 m and length of 3.4 m and is placed in the magnet with solenoidal field of 0.5 T. The sensitive volume contains around 17.6 m^3 of argon-methane mixture. The detector will register charged products of heavy ion collisions and provide registering events with a trigger rate up to 7 kHz.

The structure of the TPC, the basic design parameters of the TPC and the basic TPC configuration are provided. Status of some parts of the TPC are presented.