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System of temperature regulation and stabilization for the MPD-TOF detector

NICA (Nuclotron-based Ion Collider fAcility) is an accelerator complex designed in Dubna for the Joint Institute for Nuclear Research. The main task of that project is the examination of properties of dense baryonic matter.
The most important problems considered during NICA's experiments are:
- the nature and properties of strong interactions between elementary constituents of the Standard Model (the Standard Model of particle physics is the theory describing three of the four known fundamental forces in the universe as well as classifying all known elementary particles)
- the search for signs of phase transition between hadronic matter and quark-gluon plasma (QGP)
- study of basic properties of the strong interaction vacuum and QCD symmetries
The part of NICA complex is MPD (Multi-Purpose Detector). The MPD is designed to register particles emitted during heavy ions collisions. Among the various components of the MPD is also the TOF (Time Of Flight detector). The main subject of my research during Summer Student Program 2017 was to analyse how temperature of environment affect temperature inside the MPD-TOF.

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