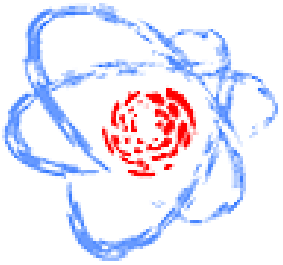

Contribution ID: **38** Type: **not specified**

Development of a temperature controller for cryogenic systems at the NICA accelerator complex

Tuesday 10 June 2025 10:50 (10 minutes)

Cryogenic systems are used to create and maintain extremely low temperatures across various fields, ranging from scientific experiments to industrial technologies. The use of cryogenic equipment is critical for the development of advanced materials and superconductors, as well as for the storage and transportation of biological materials. Cryogenic systems are also essential for the operation of the NICA accelerator complex. The cryogenic supply system of the NICA accelerator complex is a sophisticated closed technological system that includes compressor, cryogenic, capacitive, and vacuum equipment. The cryogenic temperature controller must ensure the operation of the hydrogen target of the BM@N physical setup, cooled using a cryocooler: it sets the working temperature of the target cryocondenser at levels up to 100 Kelvin with an accuracy of ±0.3 K for the condensation of the working substance into the target located in the charged particle beam zone. In the operational state, the target must be filled with liquid hydrogen, helium, or deuterium.

Summary

Presenter: DZUGAEV, Maxim (JINR LHEP)

Session Classification: Section Talks

Track Classification: Sectional talks: VBLHEP