

Referee report on the Proposal for opening a new project: **"Modernization of the EG-5 accelerator and development of its experimental infrastructure"**.

The project of modernization of the EG-5 electrostatic accelerator and its experimental infrastructure, presented by A.S. Doroshkevich, is convincing and detailed.

This is the 3rd PAC meeting where this project is being considered. Previous PAC meetings recommended providing a better plan, justifying costs, analyzing risks and considering buying a new accelerator.

The project, in its current form, meets the conditions set by the PAC and is a professional and responsible work. The scientific program, implementation plan, risk analysis, advantageous and disadvantageous of different options, as well as timelines of the new facility are presented in detail for both proposed project development scenarios. Project organization and implementation methods are clearly explained. The requested resources seem adequate to this task and reasonable.

The scientific and instrumental returns on the resources and efforts invested seem to be high and reliable. The combination of the simplicity and reliability of the accelerator with a number of unique capabilities provided by this device, as well as the very limited access to them, both in Dubna and in the JINR member countries, requires efforts to correct the current situation.

The size, diversity and quality of the scientific community ensures interesting scientific results in nuclear physics, condensed matter physics and applications.

At the first stage, the modernized accelerator EG-5 will be a flexible scientific tool for a wide range of tasks. The purchase of a new accelerator at the second stage, within the framework of the 2024-2030 program, also seems justified and also needs to be supported. A condition for the purchase of a new accelerator at the second stage is the demonstration of the scientific output of the modernized EG-5 accelerator, as well as the building up on its basis of a fully working team both in Dubna and in collaborating institutes and countries.

I am sure that both the modernized EG-5 accelerator and the new accelerator built later will significantly increase the scientific output of FLNP. I propose to support this high priority project.

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