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Project of High-Brilliance UCN Source at FLNP JINR

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The report presents a project of a high brilliance ultracold neutron (UCN) source, which is planned to be constructed at FLNP JINR. It details the concept of the proposed source, the progress made in designing its key components, and the challenges that need to be overcome. A potential research program on this source is also discussed.

As part of this project, it is initially planned to construct a test VCN channel to carry out methodical experiments essential for development of the future source. The report includes the design of this test facility and a brief overview of the research plan for it.

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