Invited -

Neutron Physics at the Joint Institute for Nuclear Research

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Frank Laboratory of Neutron Physics is one of the laboratories of the Joint Institute for Nuclear Research that investigates the neutron as an elementary particle, and employs the neutron as an instrument to investigate the structure and dynamics of condensed matter, including crystals and nanosystems, functional materials, complex liquids and polymers, rocks, etc. so that our findings could find application in molecular biology and pharmacology, engineering diagnostics and in other fields of science and technology.

Major directions of the FLNP research program are: neutron-nuclear investigations, condensed matter physics and applied research.

The main objectives of the FLNP research in the framework of the condensed matter physics involved the application of neutron scattering techniques and complementary methods such as RBS and PIXE to investigate the structure, dynamics and microscopic properties of nanosystems and novel materials, modern condensed matter physics and interdisciplinary sciences.

In the field of neutron nuclear physics researches are carried out in investigations of time and space parity violation processes in neutron-nuclear interactions; studies of the fission process; experimental investigations of fundamental properties of the neutron; gamma-spectroscopy of neutron-nuclear interactions; nuclear data for reactor applications and nuclear astrophysics; experiments with ultracold neutrons.

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