

Pulse research reactor IBR-3 –New reflector concept

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Periodic Pulsed research reactors The IBR-2 type in Dubna is the most effective source of slow neutron extracted beams for studying various structures by diffraction, small-angle scattering, reflectometer, inelastic scattering, and neutron diffraction, due to a short neutron pulse and a high average flux of up to $10 \text{ E} + 14 \text{ cm}^2 \text{ s}^{-1}$. At the same time, due to the specificity of the kinetics, fluctuations in the power energy of pulses in such a reactor are tens of times higher than in stationary reactors and create problems for the control of the apparatus. This paper proposes and substantiates a method for a significant reduction in the level of fluctuations in power pulses of such reactors using the example of the IBR-3 (NEPTUNE) pulsed reactor project with the threshold Np-237 isotope as a nuclear fuel.

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