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Power feedback model of the IBR-2M reactor and physical processes describing its behavior.

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In 2024, as part of the work on creating a new neutron source, a three-dimensional model was developed to calculate temperature fields in the fuel assemblies (FAs) of the operational IBR-2 reactor, enabling the study of thermomechanical processes that directly influence reactor dynamics. Three key dynamic processes were studied in detail: axial fuel expansion and pellet geometry changes due to the spatial temperature distribution in the fuel, FA deformation caused by temperature gradients across the walls, expansion of the FA end-piece walls due to coolant temperature variations. The report will present the obtained results, which show agreement with experimental data.

Summary

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Session Classification: Section Talks

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