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THE MEASURED NEUTHON FLUX DISTRIBUTION RE-ESTABLISMENT BY THE MODAL APPROACH FOR THE SPATIAL CORRELATIONS OF THE NEUTRON CALCULATION ERRORS. The possibilities are discussed of the maximum versimilarity method for a neutron field prediction in the presence of measurement errors and input datum indeterminations. The precision are analytically estimated and the estimations are confirmed with the computation experiments and with the calculations for the Bilibino Atomic Power Plant.

MEASUREMENT OF α-235U VALUE IN THE KBR-5 FAST CRITICAL ASSEMBLY BY PILE OSCILLATION METHOD. The method of determination of the fission material α-value in the center of a fast critical assembly based on the measurement of a total reactivity effect and a reactivity effect from delayed neutrons of a fission sample has been presented in this paper. The α-235U value measured in the KBR-5 assembly equals 0.24 ± 0.03 and the calculated one is 0.251. The satisfactory agreement between experimental and calculated results and the available possibilities to improve the experimental accuracy give evidence about the suitability of a rather simple method mentioned above.

SELF-SHIELDING COEFFICIENTS CALCULATIONS IN UNRESOLVED RESONANCE REGION. The method of self-shielding coefficients calculations using the approximate theoretical model of resonance cross-sections in unresolved region is proposed. Self-shielding factors are represented by the simple analytical formulae as function of averaged resonance parameters. The practical analysis has been done for iron and aluminium.

THB SPECIFIC 232U DECAY POWER AS A TIME FUNCTION. The decay power of 232U with its further daughter decay family is analyzed as a time function. Specific power change has beeп evaluated . Two components are taken into account. The first one is owing to the activity decay of 232U itself . The second refers to 228Th and to its decay series activity growth and subsequent decrease. The plot is presented.

PULSED NEUTRON STUDY OF NEARLY HOMOGENEOUS SYSTEMS 235U + Be. Results of study of 235U + Be sub-critical bare assemblies, which consist of thin layers of moderator and fuel, are presented. By means of the analysis of the dependence of the decay
constant on the reactivity and assembly buckling nearly comprehensive data on these multiplication systems are obtained, including all macro- and majority of micro-parameters. Decay constant multi-group calculations are also described. A review of critical experiments with 235u + Be and 235U + BeO flaky nearly homogeneous systems are also presented.

PULSED NEUTRON STUDY OF 235 U + BeO NEARLY HOMOGENEOUS SYSTEMS. Results of study of 235u + BeO nearly homogeneous sub-critical bare assemblies, which consist of thin layers of moderator and fuel, are presented. By means of the analysis of the dependence
of the measured decay constant on the reactivity and assembly buckling nearly comprehensive data on these multiplication systems are obtained, including all macro- and majority of
micro-parameters. Decay constant multi-group calculation for this assembles are also presented.

THE INVESTIGATION OF REACTION RATES AND CROSS_SECTION RATIOS IN THE BN-600 REACTOR. This paper gives the results of measuring and calculating the following reaction rates, 235U(n, f), natural U(n, f), 239Pu(n, f), 238U(n, γ), 23Na(n, γ), 197Au(n, γ),
58Ni (n, p), 27Al(n, γ) and the ratios (relative to fission of 235U) of their average cross-sections for a core and a lateral shield of the BN-600 reactor during the initial period of its operation. These measurements have been carried out by a technique of the activation, needle detectors irradiated in the space between fuel rods of the regular fuel assemblies . The calculations have been carried out in the 26-group diffusion approximation in the (x, У) geometry using the
BNAB-70 and 78 constants. It is shown a f air agreement between the measured and calculated values.

THE PADE-APPROXIMATION OF THE EVALUATED DATA ON THE CROSS-SECTIONS
OF NEUTRON INDUCED THRESHOLD REACTIONS. The Pade-approximation by rational functions was used to convert into analytical form the library of the evaluated data on the cross-sections of neutron induced threshold reactions BOSPOR. The 142 curves of the library were processed. The average accuracy of the approximation for the majority of curves is better than 1% and within 10% for other curves**.**

MEASUREMENT OF EFFECTIVE DELAYED NEUTRON FRACTION AT THE BFS-40 FAST URANIUM CRITICAL ASSEMBLY. The value of an effective delayed neutron fraction for the BFS-40 critical assembly has been measured by the two Independent Methods based on the measurement of a detector counting rate dispersion and the fission rates in a core with the help of the Cf-252 calibrated source and the solid track detectors. The experimental value of the
Beff = (0.75 ± 0.03)*10 is compared with a calculation.

THE INFLUENCE OF THE METHOD OF GROUP CONSTANTS CALCULATION TO THE SODIUM VOID REACTIVITY EFFECT. This article is devoted to research of influence of group constants calculations to the accuracy of sodium void reactivity effect calculations. It is shown that this error can extend up to 53% for total sodium voiding.