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TIME-OF-FLIGHT NEUTRON SPECTROMETER WITH RESOLUTION LESS THAN 1 ns. TOF method was carried out for automatic neutron spectrum measuring. Time resolution is about 0.8 ns. A copper neutron-producing target was irradiated by cyclotron proton or deuteron beams. Two stilbene scintillation detectors were used with flight paths 1.55 and 4 m.

TOTAL NEUTRON CROSS SECTIONS OF Nb, Bi, Al, Y, Mo IN ENERGY REGION 3-50 MeV, Total neutron cross-sections were measured by means of TOF-method using proton beam of cyclotron U-240, Average resolution is equal 0.75-2.5 ns/m. Flight paths were 1.55 and 4 m for two Stilbene detectors. Carbon and hydrogen total neutron cross sections were used as standard.

NEUTRON CROSS SECTION EVALUATION FOR FISSION PRODUCTS IN NEUTRON ENERGY REGION UP TO 50 MeV. The evaluation of neutron cross sections for unstable nuclei-fission products for neutron energy up till 50 MeV is performed in this publication/This long-lived fission products have a high yields and therefore introduce a complex problem in fuel reprocessing cycle. The evaluation is based on calculations of reaction cross sections in frame on statistical nuclear reaction model with pre-equilibrium mechanism taken into account, realized in ALICE-87 code. The comparison, wherever it possible, with available experimental data proved that the result of this work can serve as first approach to input information for different kind calculations on environmental aspects of utilization of vast radioactive wastes and its transmutation.

DETERMINATION OF NEUTRON RESONANCE PARAMETERS OF ^{147}Sm AND ^{148}Sm . The measurements were performed using the γ -ray multi-sectional 4π -detector, placed on the 500 m flight path of the pulsed neutron booster IBR-30 of LNP, JINR. The combination of the multiplicity spectrometry with the time-of-flight method made it possible to identify γ -capture and scattering events in isolated resonances and to determine spins, neutron and radiative widths of resonances. The measurements permitted one to assign spins of ^{147}Sm resonances up to 900 eV and to determine the neutron strength functions for both spin states. The radiative widths for 25 resonances of ^{147}Sm were determined up to 300 eV. The level positions of 25 resonances in energy range up to 3 keV and the values of Γ_n and Γ_γ for a numbers of resonances up to 1,5 keV for ^{148}Sm were obtained.

THE ANALYTICAL METHOD OF AVERAGE CROSS-SECTION.CALCULATIONS IN THE UNRESOLVED RESONANCE REGION FOR TWO OPEN OUTPUT CHANNELS. The advanced method for analytical calculations of simplest group averaged functionals of neutron cross-sections-average cross-sections in the unresolved resonance region for the special case (when such art Output channels arc opened). is suggested. This method is a generalization of previously published method of calculation for the case of one open output neutron and many radiative channels,

MEASUREMENTS OF THE EFFECTIVE DELAYED NEUTRON YIELDS IN REACTOR. The principal possibility is represented to get an optimal set of the delayed neutron parameters using the decay power function after a movement of regulating rods in a core. The

optimal parameters for U-235 are obtained to use them in numerical kinetics calculations. There are given the results of measurements reactor's parameters to compare an influence of different sets of the delayed neutron parameters on these results.

REGARDING TO SELECTION OF RADIOACTIVE SOURCES PROBLEM FOR γ -RAY SPECTROMETER CALIBRATION. ^{133}Ba decay have been considered as an example. A scarcity of existing experimental data have been shown. The interpretation of these data must be acknowledged as ambiguous one. High uncertainty for γ -ray intensities is the consequence of this ambiguity.