INDC(CCP)-334
Jadernye Konstanty(Nuclear Constants), Issue No. 4, 1990

INELASTIC NEUTRON SCATTERING ON 40Zr NUCLEI. The function of (n,n'γ) excitation reaction on Zr are measured by a method of accompanying γ-radiation. There is a significant discrepancy between highly excitation states.

THERMAL NEUTRON FISSION CROSS-SECTION AND FISSION RESONANCE INTEGRAL of 238Pu. These values was measured on reactor F-l. The 238Pu sample was irradiated in reactor thermal column with thermal neutron density $1.6\text{-}10^{7}$ cm^{-2} s^{-1}. The fission resonance integral measuring was made in horizontal channel with (1/E)-resonance neutron flux density $6\text{-}10^{7}$ $cm^{-2}s^{-1}$. The 239Pu and 235U targets was used as standard. The results of measuring for 239Pu are $\sigma_f = 16.7 \pm 0.8$ barn, $J=26.3 \pm 1.5$ barn.

EVALUATION OF 232Th(n,2n)231Th REACTION CROSS SECTION FROM THRESHOLD TO 20 MeV. Experimental results for 232Th(n,2n) reaction were collected and evaluated. The normalization of the measured cross sections was carried out using recent values for the cross sections .of standard monitor reactions. The evaluated excitation function was then obtained by Pade-approximation. The accuracy of the evaluated curve . was calculated also.

DELAYED NEUTRON CONSTANTS FOR U-235 THERMAL FISSION. On the base of earliest obtained data for delayed neutron spectra of groups and precursors as well as integral spectra in different moments of time the different delayed neutron spectra in BNAB constant's system Were calculated. The obtained results are recommended for using in reactor calculations.

INVESTIGATION OF 116Sn IN THE (n,n'γ)-REACT I ON. γ-spectrum, angular distributions and linear polarization of the γ-quanta in the 116Sn(n,n'γ)-reaction with the reactor fast neutrons have been measured. Scheme of the 116Sn levels and γ-transitions has been constructed, multi-pole mixtures δ for the γ-transitions between the low lying levels have been found. Completeness of the 116Sn with J = 1-5 up to E_{exc} approx. 3.2MeV has been established.

THE RATES OF MAIN THERMONUCLEAR REACTIONS. The evaluation were obtained of thermonuclear reaction cross-sections in form spline-approximation of S-factors. The specific thermonuclear reaction rates were calculated on basis of these data by means of numerical integration in temperature limits 0.001-1 MeV. The comparison made of evaluation data with literature data.

THE PROBLEM OF USING CONSTANTS IN ENGINEERING CALCULATIONS OF FAST REACTORS. Estimation of constant preparation algorithms in engineering codes and some requirements for them has been done.

THE AVERAGE GROUP CONSTANTS FOR 241Pu IN ENERGY REGION 0.1-21.5 keV. 241Pu neutron constants have been calculated in the region of the unresolved resonances (0.1-21.5) keV using the multilevel R-matrix formalism.

INVESTIGATION OF SODIUM VOID REACTIVITY ON MODEL HETEROGENEOUS CORE OF LARGE FAST REACTOR. Consideration to the reliability of routine calculational codes for the prediction of sodium void effect of heterogeneous core is given.

CAPTURE CROSS-SECTIONS TESTING OF SOME LANTANIDES-FISSION PRODUCTS IN EXPERIMENTS ON FAST CRITICAL ASSEMBLIES. A central reactivity worths of rare-earth elements-fission products 141Pr, 143,145Nd ,149Sm has been measured on a set of fast critical assemblies. 141Pr, 143,145Nd capture cross-sections has been corrected in agreement with results' of differential measurements. A good degree of the experiments description has been achieved by using of JENDL-1 evaluation for 149Sm. Inter-comparison of this work results and foreign analogous data has been performed.