



International Atomic Energy Agency

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INTERNATIONAL NUCLEAR DATA COMMITTEE

USSR State Committee on the Utilization
of Atomic Energy

NUCLEAR CONSTANTS

No. 8

PROVIDING NUCLEAR DATA FOR FAST REACTOR CALCULATIONS

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Part 3

Translated by
the International Atomic Energy Agency

Vienna, July 1974

IAEA NUCLEAR DATA SECTION, KÄRNTNER RING 11, A-1010 VIENNA

USSR STATE COMMITTEE ON THE UTILIZATION
OF ATOMIC ENERGY

Nuclear constants

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Moscow 1972

Issue No. 8 of "Nuclear Constants" consists of four volumes containing reports on work performed at the Institute of Physics and Power Engineering of the USSR State Committee on the Utilization of Atomic Energy in 1969 and 1970. The purpose of this work was to provide constants for neutron calculations relating to fast reactors and radiation shielding.

The third volume (part) describes algorithms used to derive the macroconstants of media and the group microconstants of the elements making up the media. These algorithms were developed in the ARAMAKO programme complex, which is used to prepare macroconstants for reactor and shielding calculations. The programmes of the complex are described and their texts are presented, together with the catalogue of the ARAMAKO 26-group system of constants with a sub-group description of the resonance structure of cross-sections.

Ideas are also presented on ways of deriving for complex multipurpose programmes data which cannot be provided by the ARAMAKO system at the present time (constants describing the production and propagation of gamma quanta and constants for energy release, the formation of radioactive isotopes, etc.).

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ARAMAKO complex of programmes for calculating group macroscopic and microscopic cross-sections on the basis of a 26-group system of constants broken down into sub-groups

V.F. Khokhlov, M.M. Savoskin, M.N. Nikolaev

A system for providing reactor and shielding calculation programmes with group constants for fast and intermediate neutrons and gamma-rays, based on catalogues of group constants for individual elements and isotopes.

A.A. Dubinin, M.N. Nikolaev, V.F. Khokhlov

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