

NUCLEAR SCIENCE AND ENGINEERING®

VOLUME 84, NUMBER 3, JULY 1983

CONTENTS

TECHNICAL PAPERS

- 179 An Unequal Velocity Model for Transient Two-Phase Flow by the Method of Characteristics *Dimitri Gidaspow, Firooz Rasouli, Yong W. Shin*
- 196 Modeling Film Boiling Destabilization Due to a Pressure Shock Arrival *Michael L. Corradini*
- 206 Generalized Perturbation Theory with Derivative Operators for Power Density Investigations in Nuclear Reactors *L. A. Belblidia, J. M. Kallfelz, D. G. Cacuci*
- 226 Fast Neutron Spectra by Integral Experiments on Graphite with a Collimated Monoenergetic (D,T) Neutron Beam *A. Tsechanski, M. Segev, G. Shani*
- 234 Neutron Capture Resonances in ^{56}Fe and ^{58}Fe in the Energy Range from 10 to 100 keV *F. Käppeler, K. Wisshak, L. D. Hong*
- 248 Neutron Fission Cross Sections of ^{239}Pu and ^{240}Pu Relative to ^{235}U *L. W. Weston, J. H. Todd*
- 260 Streaming of 14-MeV Neutrons Through an Iron Duct—Comparison of Measured Neutron and Gamma-Ray Energy Spectra with Results Calculated Using the Monte Carlo MCNP Code *R. T. Santoro, J. M. Barnes, R. G. Alsmiller, Jr., P. D. Soran*
- 271 Validity of the Monte Carlo Method for Shielding Analysis of a Spent-Fuel Shipping Cask: Comparison with Experiment *K. Ueki, M. Inoue, Y. Maki*
- 285 Particle Transport Theory in a Finite Sphere Containing a Spherical-Shell Source *C. E. Siewert, J. R. Thomas, Jr.*

TECHNICAL NOTES

- 291 Plutonium Diffusion in Advanced Fuels (U,Pu)(C,O) and (U,Pu)(C,N) *M. H. Bradbury, Hj. Matzke*
- 293 Additional Remarks on BeH_2 as a Moderator in Minimum Critical Mass Systems *P. K. Job, K. Subba Rao, M. Srinivasan*
- 298 Reduction of "Calculational" Uncertainties Due to Approximate Fission-Source Matrices *U. Salmi, J. J. Wagschal, A. Yaari, Y. Yeivin*

(Continued)

VOLUME 84, NUMBER 3, JULY 1983

CONTENTS
(Continued)

- 300 Monte Carlo Calculations of a Fusion Reactor Shielding Experiment

*Eldon Schmidt,
Philip F. Rose*

COMPUTER CODE ABSTRACT

- 305 CYLMAP

B. R. Wienke

BOOK REVIEW

- 306 Installations nucléaires, Jacques Ligou

Laurent Amyot

- 308 **ANNOUNCEMENT OF CURRENT PUBLICATIONS**