

# NUCLEAR SCIENCE AND ENGINEERING®

VOLUME 62, NUMBER 2, FEBRUARY 1977

## CONTENTS

### TECHNICAL PAPERS

- 187** Measurement of Sub-Coulomb-Barrier Charged Particles Emitted from Aluminum and Titanium Bombarded by 15-MeV Neutrons *S. M. Grimes, R. C. Haight, J. D. Anderson*
- 195** FX2-POOL—A Two-Dimensional Coupled Hydrodynamic Thermodynamic and Neutronic Computer Model for Hypothetical Core Disruptive Accident Analysis *Paul B. Abramson*
- 215** Diagnostic Analyses of a Nuclear Power Plant Using Multivariate Autoregressive Processes *Kohyu Fukunishi*
- 226** The Effect of Core Burnup on the Dynamic Behavior of Fast Reactors *D. Ilberg, D. Saphier, S. Yiftah*
- 243** Derivation of Consistent Measures for the Doubling of Fast Breeder Reactor Fuel *Karl O. Ott, Robert C. Borg*
- 262** Measured Fast-Neutron Penetration Spectra for Water—Comparison with Calculations *William H. Miller, Walter Meyer, Darrol H. Timmons*
- 270** The Representation of Water Properties by Mathematical Splines *C. S. Caldwell, D. A. Spragg*
- 278** Orders-of-Scattering Analysis of Particle Transport in Finite Slabs *Stanley Woolf, John C. Garth, William L. Filippone*
- 296** Perturbation Theory for Ratios in Linear and Non-linear Problems *Martin Becker*

### TECHNICAL NOTES

- 302** Estimation of Specific Heat of Superheated Water *John H. Lienhard*
- 304** Burnup Calculations with Time-Dependent Generalized Perturbation Theory *J. M. Kalfelz, G. B. Bruna, G. Palmiotti, M. Salvatores*
- 309** Benchmark Testing Using ENDF/B-III and -IV *R. D. McKnight*

(Continued)

## **CONTENTS**

(Continued)

- |            |  |   |
|------------|--|---|
| <b>330</b> | An Improved $P$ - $L$ Solution to the Reflected Critical-Reactor Problem in Slab Geometry  | <i>K. Neshat, C. E. Siewert,<br/>Y. Ishiguro</i>    |
| <b>332</b> | Asymptotic Solutions in Neutron Transport Theory   | <i>V. C. Boffi, V. G. Molinari,<br/>G. Spiga</i>    |
| <b>339</b> | New Developments in Generalized Perturbation Methods in the Nuclide Field  | <i>A. Gandini, M. Salvatores,<br/>L. Tondinelli</i> |
| <b>346</b> | <b>CORRIGENDUM</b>   |   |
| <b>347</b> | <b>BOOK REVIEWS</b>  |   |
| <b>347</b> | Nuclear Reactor Analysis, James J. Duderstadt and Louis J. Hamilton  | <i>Noel Corngold</i>                                |
| <b>348</b> | Annual Review of Energy, Volume 1  | <i>H. G. MacPherson</i>                             |
| <b>348</b> | The Nuclear Fuel Cycle—A Survey of the Public Health, Environmental, and National Security Effects of Nuclear Power, Union of Concerned Scientists | <i>Melvin L. Tobias</i>                             |
| <b>349</b> | Stress Transients in Solids, John S. Rienhart  | <i>J. E. Akin</i>                                   |
| <b>350</b> | <b>ANNOUNCEMENT OF CURRENT PUBLICATIONS</b>  |   |