

Contents

RESEARCH ARTICLES

489 An Analytic Benchmark for Neutron Boltzmann Transport with Downscattering—Part IV: PFNS and \bar{v} Uncertainty Propagation
A. M. Lewis, V. Sobes, D. Neudecker, N. Gibson, W. Fritsch

502 Collision-Based Hybrid Method for Two-Dimensional Neutron Transport Problems
Ben Whewell, Ryan G. McClarren

525 A Residual Monte Carlo Algorithm for Continuous Energy Neutron Transport with Elastic Scattering
Massimo A. Larsen, Simon Bolding, Todd Palmer, Jim Morel

539 A Novel Physics-Constrained Dynamic Mode Decomposition-Based Neutronics-Depletion Coupling Method for Efficient Burnup Calculation in Nuclear Reactors
Binhang Zhang, Hanyuan Gong, Yonghong Zhang, Xianbao Yuan, Haibo Tang

562 Use of Constrained Gamma Emission Computed Tomography to Evaluate Fission Product Distributions in High-Temperature Materials from a TRISO Fuel Irradiation
Adriaan A. Riet, John D. Stempien

574 Surpassing Legacy Approaches to PWR Core Reload Optimization with Single-Objective Reinforcement Learning
Paul Seurin, Koroush Shirvan

606 Expanded Accident Scenarios and Frequency Characteristics for a Fast Spectrum Molten Salt Reactor in an Integrated Energy System
Nicholas Dunkle, Sandra Bogetic, Nicholas R. Brown

620 Effects of Temperature and Electron Energy on the Defect Evolution Behavior of Pristine and Ion-Irradiated Yttria-Stabilized Zirconia
AKM Saiful Islam Bhuiyan, Tomokazu Yamamoto, Hidehiro Yasuda, Norito Ishikawa, Kazuhiro Yasuda

632 Sensitivity Analysis of an Overcooling Transient in the Generic Fluoride-Salt-Cooled High-Temperature Reactor
Jonathan L. Barthle, Isabelle O. Lindsay, Nader Satvat, Nicholas R. Brown

—continued—

Contents continued

VOLUME 200 · NUMBER 3 · MARCH 2026

653 Identification of Important Phenomena for Light Water Reactors During Heat Transport System Failure Events in Integrated Energy Systems

Emily V. Meilus, Isabelle O. Lindsay, Jamie B. Coble, Nicholas R. Brown

664 Three-Dimensional Experimental Validation of an EGSnrc Monte Carlo Model for the Elekta Synergy MLCi2 Linear Accelerator

Yassir El Ghazi, Samir Didi, Karim Bahhous, Dikra Bakari, Abdeslem Rrhioua, Mustapha Zerfaoui

679 Development of a TRACE Critical Break LOCA Model for D-PSA Applications with RAVEN

Nikolai Vododokhov, David R. Novog

696 Assessment of TN-24 Cask Loaded with VVER-1200 Spent Fuel Assemblies from the Radiological Regulatory Limits

Amr Abdelhady, Rowayda Fayed M. AbouAlo, Mohamed K. Shaat

707 Salt Composition Selection for Molten Salt Reactors: Required Pumping Power, Heat Exchanger Size, and Other Considerations

Elliott J. T. Berg, Adriaan Buijs

723 Validation of the AGREE HTR Analysis Code with the HTR-PROTEUS Experiments

Sefa Bektas, Volkan Seker, Thomas Downar, Uner Colak, Köberl Oliver, John D. Bess