Nuclear Technology
VOLUME 205 · NUMBER 12 · DECEMBER 2019

Selected papers from the 2018 Best Estimate Plus Uncertainty International Conference (BEPU 2018)

Contents

iii  Foreword
    Alessandro Petruzzi, Kostadin Ivanov, Evgeny Ivanov

CRITICAL REVIEW
1513  Challenges in Application of BEPU for Risk Evaluations
    Dumitru Serghiuta, John Tholammakkil

TECHNICAL PAPERS
1529  Best Estimate Plus Uncertainty (BEPU): Why It Is Still Not Widely Used
    Evgeny Ivanov, Giovanni Bruna, Antonio Sargeni, Franck Dubois

1540  Verification and Validation and Uncertainty Quantification of Code Models
    Tomasz Skorek

1554  The CASUALIDAD Method for Uncertainty Evaluation of Best-Estimate System Thermal-Hydraulic Calculations
    A. Petruzzi

1567  RIPS, a Statistical Method for Characterizing the Limiting Scenario in a BEPU Approach
    Jean-Christophe Lecoy, Jean-Yves Sauvage, Camille Charignon

1578  Applications of Multivariate Normal Bayesian Models in Nuclear Engineering
    Axel Hoefer, Oliver Buss, Michael Schmid

1588  Advanced Methodology for Uncertainty Propagation in Computer Experiments with Large Number of Inputs
    Bertrand Iooss, Amandine Marrel

1607  Quantified Validation with Uncertainty Analysis for Turbulent Single-Phase Friction Models
    Nathan W. Porter, Vincent A. Mousseau, Maria N. Avramova

1618  Uncertainty Quantification and Propagation of Multiphysics Simulation of the Pressurized Water Reactor Core
    Kaiyue Zeng, Jason Hou, Kostadin Ivanov, Matthew Anderson Jessee

—continued—
## Contents continued

**VOLUME 205 · NUMBER 12 · DECEMBER 2019**

<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1638</td>
<td>Global Sensitivity and Registration Strategy for Temperature Profile of Reflood Experiment Simulations</td>
<td>Grégory Perret, Damar Wicaksono, Ivor D. Clifford, Hakim Ferroukhi</td>
</tr>
<tr>
<td>1652</td>
<td>Proposal of a Statistical Evaluation Method for the Criticality of the Fukushima Daiichi Nuclear Power Plants</td>
<td>Yuichi Morimoto, Masanori Akaike, Satoshi Takeo, Hiromi Maruyama</td>
</tr>
<tr>
<td>1661</td>
<td>BEPU Method Applied to CFD Simulation of Mixing Flows</td>
<td>Andrej Prošek, Boštjan Končar, Matjaž Leskovar</td>
</tr>
<tr>
<td>1675</td>
<td>Cross-Section Generation Using TXT2NTAB Code for Uncertainty Propagation with Burnup Dependence</td>
<td>A. Labarile, C. Mesado, R. Miró, G. Verdú</td>
</tr>
<tr>
<td>1685</td>
<td>A Mutual Information–Based Experimental Design Framework to Use High-Fidelity Nuclear Reactor Codes to Calibrate Low-Fidelity Codes</td>
<td>Natalie Gordon, Lindsay Gilkey, Ralph C. Smith, Isaac Michaud, Brian Williams, Vincent Mousseau, Russell Hooper, Chris Jones</td>
</tr>
</tbody>
</table>