



4th Reactor Physics Asia Conference(RPHA 2023)

2023. 10.24(Tue)-26(Thu)

Gyeongju Hwabaek International Convention Center (HICO),
Gyeongju, Korea



Session Schedule

1st Day(24th)

schedule	begin	end	Detail	
08:30~09:10	8:30	9:10	Registration	
09:10~09:20	9:10	9:20	Opening Remarks (or Welcome Address)	
09:20~09:50	9:20	9:50	Chinese Plenary Session Presentation	
09:50~10:20	9:50	10:20	Japanese Plenary Session Presentation	
10:20~10:50	10:20	10:50	Korean Plenary Session Presentation	
10:50~11:00	10:50	11:00	Break Time	
11:00~11:20	11:00	11:20	(A-1)	(B-1)
11:20~11:40	11:20	11:40	Nuclear Data & Multi- group Cross Section (Room201)	Radiation Shielding (Lounge meeting room)
11:40~12:00	11:40	12:00		
12:00~12:20	12:00	12:20		
12:20~12:40	12:20	12:40		
12:40~14:00	12:40	14:00	Lunch Time	
14:00~14:20	14:00	14:20	(A-2)	(B-2)
14:20~14:40	14:20	14:40	Monte Carlo Method & Codes (Room201)	Data Measurement & Reactor Analysis (Lounge meeting room)
14:40~15:00	14:40	15:00		
15:00~15:20	15:00	15:20		
15:20~15:40	15:20	15:40		
15:40~16:00	15:40	16:00	Break Time	
16:00~16:20	16:00	16:20	(A-2) Monte Carlo Method & Codes (Room201)	(B-2) Data Measurement & Reactor Analysis (Lounge meeting room)
16:20~16:40	16:20	16:40		
16:40~17:00	16:40	17:00		
17:00~17:20	17:00	17:20		
17:20~17:40	17:20	17:40		
17:40~18:00	17:40	18:00		

Session Schedule

2nd Day(25th)

schedule	begin	end	Detail	
09:20~09:40	9:20	9:40	(C-1) Reactor Analysis Methods (Room 201)	(A-3) Nuclear Data &Experiment (Lounge meeting room)
09:40~10:00	9:40	10:00		
10:00~10:20	10:00	10:20		
10:20~10:40	10:20	10:40		
10:40~11:00	10:40	11:00	Break Time	
11:00~11:20	11:00	11:20	(C-1) Reactor Analysis Methods (Room 201)	(A-3) Nuclear Data &Experiment (Lounge meeting room)
11:20~11:40	11:20	11:40		
11:40~12:00	11:40	12:00		
12:00~12:20	12:00	12:20		
12:20~12:40	12:20	12:40	Lunch Time	
12:40~14:00	12:40	14:00	Lunch Time	
14:00~14:20	14:00	14:20	(C-2) Computational Methods &Reactor Analysis (Room201)	(A-4) Advanced Reactor Core Design (Lounge meeting room)
14:20~14:40	14:20	14:40		
14:40~15:00	14:40	15:00		
15:00~15:20	15:00	15:20		
15:20~15:40	15:20	15:40	Break Time	
15:40~16:00	15:40	16:00	Break Time	
16:00~16:20	16:00	16:20	(C-2) Computational Methods &Reactor Analysis (Room201)	(A-4) Advanced Reactor Core Design (Lounge meeting room)
16:20~16:40	16:20	16:40		
16:40~17:00	16:40	17:00		
17:00~17:20	17:00	17:20		
17:20~17:40	17:20	17:40		
17:40~18:00	17:40	18:00		

Meal place

2023.10.24 (Tue) Lunch	300C
2023.10.24 (Tue) Dinner	300C
2023.10.25(Wed) Lunch	4th floor Cafeteria

Paper ID	Paper Title	Authors	Affiliation
Session A-1 (Room 201)			
Session Title : Nuclear Data & Multi-group Cross Section Chairs: Tiejun Zu (Xi'an Jiaotong University), Hyeong IL Kim (KAERI)			
A-1-1	Calculation Method of Thermal Neutron Scattering Law Data for Liquid Materials in NECP-Atlas	Yutu Ma, Tiejun Zu, Chengyao Wu, Liangzhi Cao, and Hongchun Wu	Xi'an Jiaotong University
A-1-2	Model Parameter Adjustment for Independent Fission Yield Mass Distribution Based on Gradient Descent Method	Zerun Lu, Tiejun Zu, Liangzhi Cao, and Hongchun Wu	Xi'an Jiaotong University
A-1-3	Current Status of Nuclear Data Processing Code NECP-Atlas	Tiejun Zu, He Wu, Yihan Huang, Ning Xu, Wen Yin, Liangzhi Cao, and Hongchun Wu	Xi'an Jiaotong University
A-1-4	Development of multigroup cross section library generation system TPAMS	Lili Wen, Haicheng Wu, Xiaoming Chai, Ying Chen, Xiaofei Wu, Xiaolan Tu, and Yuan Liu	China nuclear data center
A-1-5	Generating Multigroup Cross-Sections via Monte Carlo Method for Fast Reactor Analysis: A Concise Review	Hui Guo, Yiwei Wu, Qufei Song, Kuaiyuan Feng, and Hanyang Gu	Shanghai Jiao Tong University
Session A-2 (Room 201)			
Session Title : Monte Carlo Method & Codes Chairs: Qian Zhang (Zhejiang University), Ho Jin Park (Kyung Hee University)			
A-2-1	A New Monte-Carlo-Based Iterative Method for Neutron Noise Calculation	Xuran Yang, Liangzhi Cao, Qi Zheng, Qingming He, and Hongchun Wu	Xi'an Jiaotong University
A-2-2	A Neutronics and Thermal-Hydraulics Coupling Method for Reactor Simulations Based on Monte Carlo Perturbation Theory	Kaiwen Li, Wu Wang, Hao Luo, Nan An, Shanfang Huang, Ding She, and Kan Wang	Tsinghua University
A-2-3	Research on Monte Carlo Homogenization of a Small Prismatic HTGR	Yuan Yuan, Peng Zhang, and Guoming Liu	China Nuclear Power Engineering Co., Ltd
A-2-4	Development of a neutronics and thermal-hydraulics coupling system with RMC and SUBCHAN	Hao Luo, Nan An, Jiyang Yu, Shanfang Huang, and Kan Wang	Tsinghua University
Break Time			
A-2-5	The iDTMC Method for SFR Neutronics Analysis in the iMC Monte Carlo Code	Sunjoon Yoon and Yonghee Kim	Korea Advanced Institute of Science and Technology
A-2-6	Development Status of MCS Monte Carlo Dynamics Code for Reactor Transient Analysis	Eun Jeong and Deokjung Lee	Ulsan National Institute of Science and Technology
A-2-7	The Three-Dimensional Continuously Varying Material Transport Method Based on RMC	Nan An, Conglong Jia, Hao Luo, and Kan Wang	Tsinghua University
A-2-8	GPU-optimized Monte Carlo code development - preliminary results	Muhammad Rizwan Ali, Murat Serdar Aygul, and Deokjung Lee	Ulsan National Institute of Science and Technology
A-2-9	A Correction Ratio Incorporating Burnup for Combined Fission Matrix Theory	Ruishuang Gao, Xiaojing Liu, Qingquan Pan, and Donghao He	Shanghai Jiao Tong University
A-2-10	Implementation of iDTMC Method for Predictor-Corrector Quasi-Static Monte-Carlo Calculation in the iMC code	Taesuk Oh, Inyup Kima, and Yonghee Kim	KAIST

Paper ID	Title	Authors	Affiliation
Session B-1 (Room: Lounge meeting room on the 4th floor)			
Session Title : Radiation Shielding Chairs: Youqi Zheng (Xi'an Jiaotong University), Jongwoon Kim (KAERI)			
B-1-1	Primary study on the efficiency of the discrete generalized multigroup method Based on proper orthogonal decomposition	Qian Zhang, Shifu Wu, and Jinchao Zhang	Zhejiang University
B-1-2	Radiation field analysis of a heat pipe cooled reactor for underwater application	Fanchen Li, Youqi Zheng, and Yushan Tao	Xi'an Jiaotong University
B-1-3	A Method of Automatically Generating Mesh-Based Sources for CADIS	Haoyu Zhang, Liangzhi Cao, Qingming He, Zhanpeng Huang, and Hongchun Wu	Xi'an Jiaotong University
B-1-4	Weight Window Generation Based on Forward-adjoint Coupling Calculation	Yingzhe Hu, Shanfang Huang, and Kan Wang	Tsinghua University
B-1-5	Verification of Activation Calculation using STRAUM-BESNA through Comparison with MCNP6-FISPACT-II and Monaco/MAVRIC-ORIGEN	Seungil Jeong and Ser Gi Hong	Hanyang University
Session B-2 (Room: Lounge meeting room on the 4th floor)			
Session Title : Data Measurement & Reactor Analysis Chairs: Tomohiro Endo (Nagoya University), Hyun Sik Hong (KEPCO Nuclear Fuel)			
B-2-1	Feasibility Analysis of Micro Reactor Core Monitoring based on Ex-core Nuclear Measurement System	Xiayu Wang, Youqi Zheng, Hongchun Wu, and Xingfang Wang	Xi'an Jiaotong University
B-2-2	Comparison of decay heat calculation results by altering nuclear data libraries and isomer ratios	Jounghwa Lee, Do Heon Kim, and Choong-sup Gil	Korea Atomic Energy Research Institute
B-2-3	MOX-1000MWth NEA-SFR Benchmark simulation by MCS at EOC	Saisundar Mohanty, Tuan Quoc Tran, and Deokjung Lee	Ulsan National Institute of Science and Technology
B-2-4	Variable Fidelity Estimations of Radiation Source Term for HTR-PM Equilibrium Core	Gokberk Unal, Weijian Zhang, Ruihan Li, and Jingang Liang	Tsinghua University
Break Time			
B-2-5	Experimental Study on 100hour-Term Performance of High-Temperature Sodium Heat Pipes	Zilin Su, Yongsheng Kuang, Zeguang Li, and Kan Wang	Tsinghua University
B-2-6	Simulation of reactor startup without external neutron source based on RMC	Conglong JIA, Wu WANG, and Kan WANG	Tsinghua University
B-2-7	Application of the Generalized Perturbation Theory to the Optimization of Neutron Sources for BNCT	Keita Yamakata and Go Chiba	Hokkaido University
B-2-8	Validation of Integrated Thermal Power Measurement using Solution fuel STACY experimental data for modified STACY Performance Test	Shouhei Araki, Satoshi Gunji, Yu Arakaki, Takahiko Murakami, Tomoki Yoshikawa, Kenta Hasegawa, Yuta Tada, Kazuhiko Izawa, and Kenya Suyama	Japan Atomic Energy Agency
B-2-9	α -eigenvalue Calculation using the SN Method with GPU Diffusion Acceleration	Hibiki Yamaguchi, Tomohiro Endo, and Akio Yamamoto	Nagoya University
B-2-10	Feasibility Study on Subcritical Rod Worth Measurement for UTR-KINKI	Tomohiro Endo, Go Chiba, Kenichi Watanabe, Cheol Ho Pyeon, and Genichiro Wakabayashi	Nagoya University

Paper ID	Title	Authors	Affiliation
Session A-3 (Room: Lounge meeting room on the 4th floor)			
Session Title : Nuclear Data & Experiment Chairs: Tiejun Zu (Xi'an Jiaotong University), Do Heon Kim (KAERI)			
A-3-1	Development of neutron monitoring detector and neutron-induced fission experiment at the NDPS	Dal-Ho Moon, Sung-Chul Yang, Charles Akers, Cheolmin Ham, Kwangbok Lee, and Seung-Woo Hong	Korea Atomic Energy Research Institute
A-3-2	Comparative Study of the Thermal Neutron Scattering Libraries for Light Water Based on the Molecular Dynamics Simulation with Various Water Models	Haelee Hyun, DoHeon Kim, and Ser Gi Hong	Hanyang University
A-3-3	Evaluations and Calculations of Neutron Reactions on ²³⁸ U up to 20 MeV	Yue Zhang, Yuan Tian, Haicheng Wu, Ruirui Xu, Xichao Ruan, Yinlu Han, Huanyu Zhang, Ping Liu, Xiaolong Huang, Xi Tao, Nengchuan Shu, and Yongli Jin	China nuclear data center
A-3-4	Approximating Secondary Photon Generation for the Deterministic Photon Transport Calculations	Nhan Nguyen Trong Mai, Kyeongwon Kim, and Deokjung Lee	Ulsan National Institute of Science and Technology
Break Time			
A-3-5	Uncertainty Quantification of BWR Fuel Assembly Criticality with the Efficient Random Sampling Method Based on the Control Variates Method and Sensitivities	Daichi Takami and Go Chiba	Hokkaido University
A-3-6	Shielding benchmark of CENDL-3.2	Huanyu Zhang, Haicheng Wu, Ping Liu, and Xiaofei Wu	China nuclear data center
A-3-7	On the treatment of anisotropic scattering in the heterogeneous variational nodal	Wei Xiao and Tengfei Zhang	Shanghai Jiao Tong University
A-3-8	FrendyPlus: An Extensible Nuclear Data Processing Code Interfacing Frendy	Changyuan Liu	New Compute Laboratory
A-3-9	Preliminary Benchmark Evaluation of AGN-201K Educational and Research Reactor	Ho Jin Park, Jeong Woo Park, Chihun Kim, Jimin Hur, Young Beom Shon, and Myung Hyun Kim	Kyung Hee University



Paper ID	Title	Authors	Affiliation
Session A-4 (Room: Lounge meeting room on the 4th floor)			
Session Title : Advanced Reactor Core Design Chairs: Yunzhao Li (Xi'an Jiaotong University), Jae Yong Lim (KAERI)			
A-4-1	Functions on Control Rod Drive Simulation for Boron-Free Reactor Core in Neutron Transport code STREAM	Wonkyeong Kim and Deokjung Lee	Ulsan National Institute of Science and Technology
A-4-2	Analysis and Research on Vehicle-mounted Mobile Nuclear Power System	Henglong Lin, Jingkang Li, Zeguang Li, Hongsheng Jiang, and Jun Yang	Tsinghua University
A-4-3	Optimization of conceptual Design on the Lead-based Modular Nuclear Power Reactor Core Loaded with U-10Zr Alloy Fuel	Lei Lou and Lianjie Wang	Nuclear Power Institute of China
A-4-4	Control Drum Design Optimization for a Passively-Cooled Molten Salt Fast Reactor	Nariratri Nur Aufanni, Eunhyug Lee, and Yonghee Kim	Korea Advanced Institute of Science and Technology
A-4-5	A Physics Study on Moderated SiC Block for High-Temperature Gas-Cooled Reactor	Davide Bazzani, Yonghee Kim, and Steven Wijaya	Korea Advanced Institute of Science and Technology
Break Time			
A-4-6	Performance Analysis of Long-Cycle Small PWR Core with Coating Type Burnable Absorber	WooJin Lee, SungHyun Cho, and SerGi Hong	Hanyang University
A-4-7	Feasibility Study on Optimization of Fast Reactor for MA Transmutation under Negative Sodium Void Reactivity Conditions By HHO	Chikara Kawasaki, Takanori Kitada, and Satoshi Takeda	Osaka University
A-4-8	Load-follow Simulation of a 540MWth Soluble-Boron-Free SMR using CSBA	Yunseok Jeong, Steven Wijaya and Yonghee Kim	KAIST
A-4-9	Preliminary neutronics and thermal analysis of a heat pipe cooled traveling wave reactor with nonuniform radial fuel arrangement	Kunfeng Ma and Po Hu	Shanghai Jiao Tong University
A-4-10	Multi-Physics Rodded Depletion of an Up-rated Soluble-Boron-Free ATOM Core Design with Mode-Y logic	Steven Wijaya, Yunseok Jeong, and Yonghee Kim	KAIST

Paper ID	Title	Authors	Affiliation
Session C-1 (Room201)			
Session Title : Reactor Analysis Methods Chairs: Zhouyu Liu (Xi'an Jiaotong University), Hwan Soo Lee (KHNP/CRI)			
C-1-1	Coupled Fuel Depletion/Thermal Hydraulic Analysis of a Liquid Metal Fast Reactor ANST-100e	Tuan Tran, Tung Nguyen, and Deokjung Lee	Ulsan National Institute of Science and Technology
C-1-2	Multi-Physics Monte Carlo Simulation for a Fuel Pin-Cell with Continuous Temperature and Density	Muhammad Imron and Deokjung Lee	Ulsan National Institute of Science and Technology
C-1-3	A Comparative Analysis of eXplainable AI Techniques for Nuclear Reactor Core Anomalies	Hanjoo Kim, Sang-Rae Moon, and Deokjung Lee	Ulsan National Institute of Science and Technology
C-1-4	Transport calculation for plate-type nuclear reactor with the direct transport code SHARK	Chen Zhao, Wenbo Zhao, and Hongbo Zhang	Nuclear Power Institute of China
Break Time			
C-1-5	Research on Surrogate Models of Space-time Neutron Dynamics with Artificial Neural Networks	Xiaoqi Li, Youqi Zheng, Xianan Du, Yongping Wang, Huabei Yin, and Bowen Xiao	Xi'an Jiaotong University
C-1-6	Pin-cell Homogenization for PWR-Core Pin-by-pin P1 Calculation	Junwei Qin and Yunzhao Li	Xi'an Jiaotong University
C-1-7	Investigation of the SP3 method in fast reactor physics analysis	Jun-Shuang Fan and Go Chiba	Hokkaido University
C-1-8	2D Neutron Diffusion Calculation Based on Local/Global Iterations Using Proper Orthogonal Decomposition	Masato Ito, Tomohiro Endo, Akio Yamamoto, Taiti Takeishi, Yasuhiro Kodama, and Hiroaki Nagano	Nagoya University
C-1-9	Consistent Variational Nodal Diffusion Method Embedded in Method of Characteristics	Kyung Min Kim, Han Gyu Lee, and Hyung Jin Shim	Seoul National University

Paper ID	Title	Authors	Affiliation
Session C-2 (Room201)			
Session Title : Computational Methods & Reactor Analysis Chairs: Qingming He (Xi'an Jiaotong University), Jo Kwon Cho (KAERI)			
C-2-1	Development of GPU Based Depletion Module by CRAM	Woo Kyoung Ko and Hyung Jin Shim	Department of Nuclear Engineering, Seoul National University
C-2-2	Deep learning surrogate model for fuel performance analysis	Awais Zahur, Muhammad Rizwan Ali, Jimin Lee, and Deokjung Lee	Ulsan National Institute of Science and Technology
C-2-3	Evaluation of Thermal Expansion Reactivity Feedback Effect in Water-moderated Fuel-particle-dispersion System	Kodai Fukuda	Japan Atomic Energy Agency
C-2-4	Application of the unstructured variational nodal method in the He-Xe cooled micro reactor	Qizheng Sun, Xiaojing Liu, and Tengfei Zhang	Shanghai Jiao Tong University
C-2-5	Current research activities on nuclear data measurements at ANNRI	Atsushi Kimura, Shunsuke Endo, Gerard Rovira, and Shoji Nakamura	Japan Atomic Energy Agency
Break Time			
C-2-6	RT2: Ray-Tracing Accelerated Radiation Transport Monte Carlo Code	Chang-Min Lee and Sung-Joon Ye	Seoul National University
C-2-7	Radial Power Distribution Reconstruction Method via Ex-core-detector Signals Based on Artificial Neural Networks	Xingfang Wang, Youqi Zheng, Xiayu Wang and Bowen Xiao	Xi'an Jiaotong University
C-2-8	Burnup-dependent Discontinuity Factors for Diffusion Analysis of Molten Salt Fast Reactors	Sungtaek Hong, Taesuk Oh, Yonghee Kim	KAIST
C-2-9	A Feasibility Study of Improving ASI Control Performance by Modifying Part-strength Control Element Assemblies in APR1400	Jongsun Lee and Hyun Chul Lee	Pusan National University