

CURRICULUM VITAE

PERSONAL INFORMATION:

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EDUCATION:

2007.9 – 2012.6 Tsinghua University
Beijing, China
PhD in Nuclear Science and Engineering
Thesis title: Research on the Reactor Physics Analysis
Methods and Characteristics of the Supercritical Water-cooled
Reactor

2003.9 – 2007.6 Tsinghua University
Beijing, China
Bachelor of Engineering in Nuclear Science and Technology



EMPLOYMENT HISTORY:

2016.12 – current Ulsan National Institute of Science and Technology, Ulsan, Korea
Research Assistant Professor
Monte Carlo method development, Multi-physics coupling analysis

2014.12 – 2016.12 Ulsan National Institute of Science and Technology, Ulsan, Korea
Post-doctoral researcher
Monte Carlo method development

2013.7 – 2014.11 Wuhan University, Hubei, China
Instructor
Teach courses for undergraduates: *Nuclear Power Plant Operation, Nuclear
Reactor Theory, Nuclear Power Plant System and Equipment.*

2012.7 – 2013.6 East China Institute of Technology, Jiangxi, China
Instructor
Teach courses for undergraduates and graduates: *Monte Carlo Method, Reactor
Physics Analysis, Nuclear Reactor Safety.*

PUBLICATIONS:

Peer reviewed journal articles:

- [1] Eun Jeong, Jinsu Park, Hyun Chul Lee, Peng Zhang, Deokjung Lee*, "Analysis of Very High Temperature Gas-Cooled Reactor PMR-200 with DeCART/CAPP Code System", J. Nucl. Sci.

Technol., Under review (2017)

- [2] Peng Zhang, Hyunsuk Lee, Deokjung Lee*, "On the Transfer Matrix of the Modified Power Method," *Comp. Phys. Comm.*, Under review (2017)
- [3] Peng Zhang, Hyunsuk Lee, Deokjung Lee*, "Extension of the Noise Propagation Matrix Method for Higher Mode Solutions," *J. Comput. Phys.*, Published Online (2017)
- [4] Eun Jeong, Jiwon Choe, Peng Zhang, Ho Cheol Shin, Deokjung Lee*, "New High Performance Light Water Reactor Core Concept with Mixed Cycle Length Operation," *Int. J. Energ. Res.*, Published Online. (2017)
- [5] Youqi Zheng, Deokjung Lee*, Peng Zhang, Eunki Lee, Ho-cheol Shin, "Comparisons of SN and Monte-Carlo Methods in PWR Ex-core Detector Response Simulation," *Annals of Nuclear Energy*, 101:139-150 (2017)
- [6] Peng Zhang, Hyunsuk Lee, Deokjung Lee*, "Calculation of Degenerated Eigenmodes with Modified Power Method," *Nucl. Eng. Tech.*, 49 (1): 17-28 (2017)
- [7] Jinsu Park, Taewoo Tak, T. K. Kim, Jiwon Choe, Yongjin Jeong, Peng Zhang, Deokjung Lee*, "Design Study of Long-Life Small Modular Sodium-Cooled Fast Reactor," *Int. J. Energ. Res.*, 41 (1): 139-148 (2017)
- [8] Peng Zhang, Hyunsuk Lee, and Deokjung Lee*, "Extension of Modified Power Method to Two-Dimensional Problems," *J. Comput. Phys.*, 320:17-32 (2016)
- [9] Peng Zhang, Hyunsuk Lee, and Deokjung Lee*, "A General Solution Strategy of Modified Power Method for Higher Mode Solutions," *J. Comput. Phys.*, 305:387-402 (2016)
- [10] ZHANG Peng, WANG Kan*, YU Ganglin, "A Simplified Supercritical Fast Reactor with Thorium Fuel," *Science and Technology of Nuclear Installations.*, Vol. 2014 (2014)
- [11] ZHANG Peng, WANG Kan*, LI Man-cang, "Research on Homogenization via Monte Carlo Method and Its Application in Multi-group Monte Carlo Transport Calculation," *Nuclear Power Engineering*, Vol. 33, No. 4, (in Chinese) (2012)

Conference articles:

- [1] Peng Zhang, Hyunsuk Lee, Deokjung Lee, "A New Accumulation Scheme for the Monte Carlo Implementation of the Modified Power Method," *M&C2017*, Jeju, Korea, April 16-20 (2017)
- [2] Peng Zhang, Hyunsuk Lee, Deokjung Lee, "Monte Carlo Higher Modes Calculation based on the Extension of the Noise Propagation Matrix," *M&C*, Jeju, Korea, April 16-20 (2017)
- [3] Hyunsuk Lee, Wonkyeong Kim, Peng Zhang, Azamat Khassenov, Jinsu Park, Jiankai Yu, Sooyoung Choi, Hwan Soo Lee and Deokjung Lee*, "Preliminary Simulation Results of BEAVRS Three-dimensional Cycle 1 Wholecore Depletion by UNIST Monte Carlo Code MCS," *M&C2017*, Jeju, Korea, April 16-20 (2017)
- [4] Jiankai YU, Azamat Khassenov, Peng Zhang, Deokjung Lee*, "On the Convergence Issue for Multi-Poles Conversion from Reich-Moore Formalism," *M&C2017*, Jeju, Korea, April 16-20 (2017)
- [5] Seongpil Yum, Ho Cheol Shin, Minyong Park, Jiwon Choe, Peng Zhang, and Deokjung Lee*, "Application of GMDH to Cross Section Functionalization," *M&C2017*, Jeju, Korea, April 16-20 (2017)
- [6] Peng ZHANG, Hyunsuk LEE, and Deokjung LEE, "Extension of NPMM for Higher Mode Solutions," *KNS Fall Meeting*, Gyeongju, Korea, October 26-28 (2016)
- [7] Peng Zhang, Hyunsuk Lee, and Deokjung Lee*, "Application of the Modified Power Method to 2D Core Simulation," *KNS Spring Meeting*, Jeju, Korea, May 12-13 (2016)
- [8] Peng Zhang, Hyunsuk Lee, and Deokjung Lee*, "Extension of Modified Power Method to Multi-Dimensional Monte Carlo Simulations," *PHYSOR2016*, Sun Valley, ID, USA, May 1-5 (2016)
- [9] Peng Zhang, Hyunsuk Lee, and Deokjung Lee*, "On the Characteristics of Transfer Matrix of Generalized Modified Power Method," *PHYSOR2016*, Sun Valley, ID, USA, May 1-5 (2016)
- [10] Peng Zhang, Hyunsuk Lee, Kyoong-Ho Cha, Sun-Kwan Hong, and Deokjung Lee*, "Application of Modified Power Method to 2D Problems," *RPHA15*, Jeju, Korea, September 16-18 (2015)

- [11] Peng Zhang, Hyunsuk Lee, and Deokjung Lee*, "The Implementation of Modified Power Iteration Method in Monte Carlo," 2015 ANS Annual Meeting, San Antonio, TX, June 7-11 (2015)
- [12] Peng Zhang, Hyunsuk Lee, and Deokjung Lee*, "Extension of Tom Booth's Modified Power Method for Higher Eigen Modes," KNS Spring Meeting, Jeju, Korea, May 6-8 (2015)
- [13] Peng Zhang, Hyunsuk Lee, and Deokjung Lee*, "Stabilization Technique of Modified Power Iteration for Monte Carlo Simulation of Neutron Transport Eigenvalue Problem," ANS MC2015, Nashville, TN, USA, April 19-23 (2015)
- [14] Sun Qian, Zhang Peng*, Li Zhiqiang, "Research on Leakage Correction Method for Multi-group Cross Sections Generated via Monte Carlo simulation," 2014 Computation of Reactor Physics (CORPHY2014), Chengdu, China, August 25-27 (2014) (in Chinese).
- [15] ZHANG Peng, WANG Kan*, YU Ganglin, "Utilization of Different Fuel in Supercritical Fast Reactor," the 6th International Symposium on Supercritical Water-Cooled Reactors (ISSCWR6), Shenzhen, Guangdong, China (2013)
- [16] ZHANG Peng, WANG Kan*, YU Ganglin, "Utilization of Different Fuels in SCWR," the 3rd China-Canada Joint Workshop on Supercritical Water-Cooled Reactors (CCSC2012), Xi'an, China (2012)
- [17] ZHANG Peng, WANG Kan*, YU Ganglin, "A multi-group Monte Carlo core analysis method and its application in SCWR design," PHYSOR 2012, Knoxville, TN, USA, April 15-20 (2012)
- [18] ZHANG Peng, GONG Helin, WANG Kan*, "Preliminary Study on Neutronics Characteristics of Thorium-based Supercritical Water-cooled Fast Reactor," the 5th Int. Sym. SCWR (ISSCWR-5), Vancouver, British Columbia, Canada, March 13-16 (2011)
- [19] ZHANG Peng, WANG Kan*, YU Ganglin, "SCWR Assembly Designs with Peripheral Moderator Channels," PHYSOR 2010, Pittsburgh, Pennsylvania, USA, May 9-14 (2010)
- [20] ZHANG Peng, WANG Kan*, "Comparisons of Thermal SCWR Assembly Designs by In- or Inter-Assembly Moderation," the 2nd Canada-China Joint Workshop on Supercritical Water-Cooled Reactors (CCSC-2010), Toronto, Ontario, Canada, April 25-28 (2010)