

PUBLICATIONS

Book

Haghighat, A. *Monte Carlo Methods for Particle Transport*, CRC Press, Taylor and Francis Group, 2015.

Book - Chapter

Haghighat, A. and G. E. Sjoden, *3-D particle transport methods and their applications*, book chapter in *Applied Modeling and Computations in Nuclear Science*, T. M. Semkow, S.Pommé, and S.M. Jerome, Eds. ACS Symposium Series 945, American Chemical Society, Wash, DC, pp. 162-182, 2006.

Refereed Journal

1. Haghighat, A. and M.A. Robkin, "Actinide Hazard Reduction by Partitioning and Transmutation in a Coupled Reactor System," Nuclear Technology, 61:503-513 (June 1983).
2. Haghighat, A. and G. Kosaly, "The Influence of Homogenization on the Calculation of the Sensitivity Volume of a BWR Incore Detector," Annals of Nuclear Energy, 12(7):357-371 (1985).
3. Haghighat, A. and G. Kosaly, "Determination of the Field-of-View of a BWR Incore Detector," Nuclear Science and Engineering, 101(1):8-25 (January 1989).
4. Haghighat, A. and A.J. Baratta, "Gamma Transport Theory Analysis of the TMI-2 Lower Head," Nuclear Technology, 85(2):127-135 (May 1989).
5. Baratta, A.J., A. Haghighat and B.R. Bandini, "The Overall Source Range Monitor Response During the Three Mile Island Unit-2 Accident," Nuclear Technology, 87(4):1013-1020 (December 1989).
6. Haghighat, A., "Angular Parallelization of a Curvilinear S_N Transport Theory Method," Nuclear Science and Engineering, Vol. 108, No. 3, 267-277 (July 1991).
7. Mattis R. and A. Haghighat, "Domain Decomposition of a Two-Dimensional S_N Method," 111: 180-196, Nuclear Science and Engineering, (June 1992).
8. Haghighat A. and R. Veerasingam, "Transport Analysis of Several Cross-Section Libraries Used for the Reactor Pressure Vessel (RPV) Fluence Calculations," 101: 237-243, Nuclear Technology Journal, (Feb., 1993).
9. Haghighat, A. "Spatial and Angular Domain Decomposition Algorithms for the Curvilinear S_N Transport Theory Method, Transport Theory and Statistical Physics", 22(2&3), 391-417 (1993).
10. Haghighat, A., M. Mahgerefteh, and B. Petrovic, "Evaluation of the Uncertainties in the Source Distribution for Pressure Vessel Neutron Fluence Calculations," Nuclear Technology, Vol. 109, 54-75, Jan. 1995.
11. Haghighat, A., M. A. Hunter, and R. E. Mattis, "Iterative Schemes for Parallel S_N Algorithms in a Shared-Memory Computing Environment," Nuclear Science and Engineering Vol. 121 No. 1, 103-113, 1995.
12. Petrovic, B. G. and A. Haghighat, "Effects of S_N Method Numerics on Pressure Vessel Neutron Fluence Calculations," Nuclear Science and Engineering, Vol. 122, No. 2, 167-193, 1996.
13. Wagner, J. C., A. Haghighat, and B. G. Petrovic, "Monte Carlo Transport Calculations and Analysis for Reactor Pressure Vessel Neutron Fluence," Nuclear Technology, June 1996.
14. Petrovic, B. G. and A. Haghighat, "Analysis of Inherent Oscillations in Multidimensional S_N Solutions of Neutron Transport Equation," Nuclear Science and Engineering, Vol. 124, No.1, 31-62, Sept. 1996.
15. Haghighat, A. "Letter to Editor - on Neutron Fluence at the Pressure Vessel of a Pressurized Water Reactor Determined by the MCNP Code , by Lacky and Tsoufanidis , " Nuclear Science and Engineering, 124, 364-367, October 1996.
16. Wagner, J. C. and A. Haghighat, "Acceleration of Monte Carlo Reactor Cavity Dosimetry Calculations with the Discrete Ordinates Adjoint Function," Proceedings of the 9th International Symposium on Reactor Dosimetry, edited by H. Abderrahim and H. Nolthenius, World Scientific Publishing Co., 1998.
17. Petrovic, B. and A. Haghighat, "New Directional 1-Weighted S_N Differencing Scheme and Reduction of Estimated Pressure Vessel Fluence Uncertainty," Proceedings of the 9th International Symposium on Reactor Dosimetry, edited by H. Abderrahim and H. Nolthenius, World Scientific Publishing Co., 1998.
18. Wagner, J.C. and A. Haghighat, "Automated Variance Reduction of Monte Carlo Shielding Calculations Using the Discrete Ordinates Adjoint Function," Nuclear Science and Engineering, 128, 186-208, 1998.

19. V. Kucukboyaci, A. Haghghat, G. Sjoden and B. Petrovic, "Modeling of BWR for Neutron and Gamma Fields Using PENTRAN," Reactor Dosimetry Radiation Metrology and Assessment, ASTM STP 1398, pp. 470-477, ASTM, Feb. 2001
20. Petrovic and A. Haghghat, "Design and Characterization of a Facility for Fast Neutron Irradiation of Semiconductors at Penn State," Reactor Dosimetry Radiation Metrology and Assessment, ASTM STP 1398, pp. 191-198, ASTM, Feb. 2001
21. Haghghat, A., H. Ait Abderrahim, and G. E. Sjoden "Accuracy and Performance of PENTRAN™ Using the VENUS-3 Benchmark Experiment," Reactor Dosimetry Radiation Metrology and Assessment, ASTM STP 1398, pp. 524-531, ASTM, Feb. 2001.
22. Haghghat, A., H. Hiruta, and B. Petrovic, "Performance of A³MCNP™ for Calculation of 3-D Neutron Flux Distribution in a BWR Core Shroud," Reactor Dosimetry Radiation Metrology and Assessment, ASTM STP 1398, pp. 549-556, Feb. 2001.
23. Haghghat, A., G.E. Sjoden, and V.N. Kucukboyaci, "Effectiveness of PENTRAN's Unique Numerics for Simulation of the Kobayashi Benchmarks," a special issue of the Progress in Nuclear Energy, Vol. 39, No. 2, pp. 191-206, 2001
24. Haghghat, A. and J. C. Wagner, "Application of A³MCNP to Radiation Shielding Problems," Advanced Monte Carlo for Radiation Physics, Particle Transport Simulation and Applications, pp. 619-624, Springer-Verlag, 2001.
25. Kucukboyaci, V. N., A. Haghghat and G.E. Sjoden "Performance of PENTRAN™ 3-D Parallel Particle Transport Code on the IBM SP2 and PCTTRAN Cluster," Recent Advances in Parallel Virtual Machine and Message Passing Interface, pp. 36-43, Springer-Verlag, Sept. 2001.
26. Haghghat, A., S. R. Gardner, V. Kucukboyaci, M. T. Wenner, J. M. Adams, A. D. Carlson, S. M. Grimes, and T. N. Massey, "New Particle Transport Methods for Design and Optimization of Spherical-Shell Transmission Measurements," ND2001 Publication, May 2002.
27. Adams, J. M., Arzu Alpan, Allan D. Carlson, S. R. Gardner, S. M. Grimes, A. Haghghat, V. Kucukboyaci, T. N. Massey, A. Patchimpattapong and M. T. Wenner, "New Investigation of Iron Cross Sections via Spherical-Shell Transmission Measurements and Particle Transport Calculations," ND2001 Publication, May 2002.
28. Patchimpattapong A. and A. Haghghat, "Developing an Expert System for Mesh Generation for Parallel Sn Particle Transport Methods," 11th International Symposium Reactor Dosimetry (ISRD). Journal of ASTM International, Vol. 4, No. 4, 2005.
29. Alpan, F. A. and A. Haghghat, "New Methodologies for Generation of Multigroup Cross-Section for Shielding Applications," 11th International Symposium Reactor Dosimetry (ISRD), Journal of ASTM International, Vol. 4, No. 4, 2005.
30. Alpan, F. A. and A. Haghghat, "Identification and Reduction of Differences Between Multigroup and Continuous Energy Calculations in Shielding Applications," 11th International Symposium Reactor Dosimetry (ISRD), Journal of ASTM International, Vol. 4, No. 4, 2005.
31. Haghghat, A. and J.C. Wagner, "Monte Carlo Variance Reduction with Deterministic Importance Functions," Progress of Nuclear Energy Journal, Vol. 42 (1), Jan. 2003.
32. Miyake, Y., M. Ohmura, T. Hasegawa, K. Ueki, O. Sato, A. Haghghat and G. E. Sjoden, "Improvement of Monte Carlo Code A³MCNP for Large-Scale Shielding Problems," Journal of Nuclear Science and Technology, Supplement 4, p.93-96, March 2004.
33. Longoni, G., A. Haghghat, and G. Sjoden, "A New Synthetic Acceleration Technique Based on the Simplified Even-Parity SN Equations," Transport Theory and Statistical Physics, 33: 347-360, 2004.
34. Alpan, F. and A. Haghghat, "Development of the CPXSD Methodology for Generation of Fine-Group Libraries for Shielding Applications," Nuclear Science and Engineering, Vol. 149, 1-14, 2005.
35. Longoni, G., A. Haghghat, and G. Sjoden, "Benchmarking of PENTRAN-SSn Parallel Transport Code and FAST Preconditioning Algorithm using the VENUS-2 MOX-Fueled Benchmark Problem," Proceedings of the 12th ISRD, Journal of Testing and Evaluation, 2005.
36. Alpan, F. A. and A. Haghghat, "Use of CPXSD for Generation of Effective Fast Multigroup Libraries for Pressure Vessel Fluence Calculations," Journal of Testing and Evaluation, Proceedings of the 12th ISRD, Journal of Testing and Evaluation, 2005.

37. Wenner, M.T., Alireza Haghghat, Steven S. Grimes, Thomas N. Massey, Allan D. Carlson, and James M. Adams, "A New Methodology for Adjustment of Iron Scattering Cross Sections Using Time-of-Flight Spectroscopy," Journal of Testing and Evaluation, Journal of ASTM International Vol. 4, No. 4, 2005
38. Shedlock D. and A. Haghghat, "Neutron analysis of spent fuel storage installation using parallel computing and advance discrete ordinates and Monte Carlo techniques," Journal of Radiation Protection Dosimetry, 116(1-4):662-666, Oxford University Press, Dec. 2005.
39. Omura, M., Y. Miyake, T. Hasegawa, K. Ueki, O. Sato, A. Haghghat, and G. E. Sjoden, "Performance of the improved version of Monte Carlo code A³MCNP for large-scale shielding problems," Journal of Radiation Protection Dosimetry, 116 (1-4): 493 – 497, Oxford University Press, Dec. 2005.
40. Alpan, A. and A. Haghghat, "Use of CPXSD for Generation of Fast Multigroup Cross Sections for Pressure Vessel Fluence Calculations," Journal of ASTM International Vol. 4, No. 4, 2007.
41. Polit, C. and A. Haghghat, "UFTR Thermal Column Characterization and Redesign for Maximized Thermal Flux," 13th International Symposium on Reactor Dosimetry, World Scientific Publishing Co., 2008.
42. Yi, C. and A. Haghghat, "A 3-D Block-Oriented Hybrid Discrete Ordinates and Characteristics Method," Nuclear Science and Engineering, Vol. 164, No. 3, 221-247, 2010.
43. Royston, K. and A. Haghghat, "Comparison of TITAN Hybrid Deterministic Transport Code and MCNP5 for Simulation of SPECT," Progress in Nuclear Science and Technology, Vol. 2, pp. 201, 2011.
44. Wenner, M. and A. Haghghat, "Fission Matrix Based Methodology for Achieving Unbiased Solutions for Eigenvalue MC Simulation," Progress in Nuclear Science and Technology, Vol. 2, pp. 886, 2011.
45. Wenner, M., A. Haghghat, J. M. Adams, A. D. Carlson, S. M. Grimes, T. N. Massey, "Novel investigation of iron cross sections via spherical shell transmission measurements and particle transport calculations for material embrittlement studies," Nuclear Science and Engineering, Vol. 170, pp. 1-27, 2012..
46. Walters, W., A. Haghghat, S. Sitaraman, and Y. Ham, "Development of INSPCT-S for Inspection of Spent Fuel Pool," Journal of ASTM International, American Institute of Physics, NY, Volume 9, Issue 4, 2012.
47. Royston, K., A. Haghghat, W. Walters, C. Yi and G. Sjoden, Determination of Angular Current at a Detector Window Using a Hybrid Adjoint Function Methodology, Progress in Nuclear Science and Technology, Volume 4, pp. 528-532, April 2014.
48. Walters, W., A. Haghghat, K. Royston, C. Yi, and G. Sjoden, A Response Function Methodology to Calculate Induced Fission Neutron Flux Distribution in an Active Interrogation System, Progress in Nuclear Science and Technology, Volume 4, pp. 533-537, April 2014.
49. Haghghat, A., K. Royston, G. Sjoden, C. Yi, and M. Huang, Unique Formulations in TITAN and PENTRAN for Medical Physics Applications, Progress in Nuclear Science and Technology, Volume 4, pp. 883-887, 2014.
50. Haghghat, A., K. Royston, and W. Walters, "MRT Methodologies for Real-Time Simulation of Nonproliferation and Safeguards Problems," Annals of Nuclear Energy, pp. 61-67, 2015.
51. Royston, K., A. Haghghat, and C. Yi, "Application of TITAN for Simulation of Particle Streaming in a Duct," Journal of ASTM International, 2016.
52. Walters, W., and A. Haghghat, "ACS Algorithm in Discrete Ordinates for Pressure Vessel Dosimetry," Journal of ASTM International, 2016.
53. Roskoff, N., W. Walters and A. Haghghat, "Application of the subgroup decomposition method (SDM) for reactor simulation," Journal of ASTM International, 2016.

Refereed Proceedings

(76 of the papers were accepted based on a full paper, and the remaining were accepted based on a summary)

1. Haghghat, A. and M. Mahaffy, "Vectorization of a Spherical S_N-Transport Theory Algorithm on Supercomputers," Proceedings of the 1988 International Reactor Physics Conference, Vol. II, pp. 113-121 (September 1988).

2. Haghghat, A. and R. Mattis, "Parallel/Vector Algorithms for the Spherical S_N Transport Theory Method," Proceedings of the First International Meeting on Supercomputers in Nuclear Applications (SNA '90), Mito City, Japan (March 1990).
3. Haghghat, A. and Y.Y. Azmy, "Parallelization of a Spherical S_N Algorithm Based on the Spatial Domain Decomposition," Proceedings of the International Topical Meeting on Advances in Mathematics, Computations, and Reactor Physics, Vol. 1, pp. 3.1-3.12, 1991.
4. Mattis, R. and A. Haghghat, "New Vector/Parallel Algorithms for the Two-Dimensional Curvilinear S_N Method," Proceedings of the International Topical Meeting on Advances in Mathematics, Computations, and Reactor Physics, Vol. 1, pp. 4.1-4.13, 1991.
5. Livingston, J. and A. Haghghat, "Study of More Efficient Models for Reactor Vessel Fluence Calculations," Proceedings of the topical meeting on "Advances in Reactor Physics", Charleston, SC, Vol. 1, pp. 253-264, March 1992.
6. Veerasingam, R. and A. Haghghat, "Neutron Transport Analysis of the SAILOR and ELXSIR Cross-Section Libraries used for the RPV Fluence Estimation," Proceedings of the topical meeting on "Advances on Reactor Physics", Charleston, SC, Vol. 1, pp. 265-276, March 1992.
7. Haghghat, A., "Several Spatial Parallel S_N Algorithms for the Curvilinear Geometries," Proc. of the Inter. Symposium on Numerical Transport Theory, Russia, Moscow, pp. 94-97, May 1992.
8. Hunter, M. and A. Haghghat, "Combined Spatial/Angular Domain Decomposition S_N Algorithms for Shared Memory Parallel Architectures," Proceedings of the Joint International Conference on Mathematical Methods, and Supercomputing in Nuclear Applications, 2, pp. 112-123, Karlsruhe, Germany, April 19-23, 1993.
9. Haghghat, A., M. Hunter, and R. Mattis, "Iterative Schemes for Parallel S_N Algorithms," Proceedings of the 1994 Topical Meeting on Reactor Physics, Vol. 1, 423-432, Knoxville, TN, April 11-15, 1994.
10. Petrovic, B. and A. Haghghat, "Impact of Numerical Options in the DORT Code on PWR Pressure Vessel Fluence Calculations," Proceedings of the 1994 Topical Meeting on Reactor Physics, Vol. 1, 219-228, Knoxville, TN, April 11-15, 1994.
11. Mattis, R. and A. Haghghat, "Parallel S_N Algorithms on Workstation Networks," Proceedings of the Eighth International Conference on Radiation Shielding, Vol. 1, 558-563, Arlington, TX, April 24-27, 1994.
12. Petrovic, B., A. Haghghat, J. Luoma, and M. Mahgerefteh, "Validation of S_N Transport Calculations for Pressure Vessel Fluence Determent at Penn State," Proceedings of the Eighth International Conference on Radiation Shielding, Vol. 2, 721-728, Arlington, TX, April 24-27, 1994.
13. Wagner, J., A. Haghghat, and B. Petrovic, "Comparison of Monte Carlo and Synthesized 3-D Deterministic Models for Reactor Cavity Dosimetry Calculations," Proceedings of the Eighth International Conference on Radiation Shield, Vol. 2, 714-720, Arlington, TX, April 24-27, 1994.
14. Wagner, J. C., A. Haghghat, and B. G. Petrovic, "Benchmarking of Synthesized 3-D S_N Transport Methods for Pressure Vessel Fluence Calculations with Monte Carlo," Proceedings of the International Conference on Mathematics and Computations, Reactor Physics, and Environmental Analyses, Portland, Oregon, April 30 - May 4, 1995.
15. Petrovic, B. G. and A. Haghghat "Boundary Conditions Induced Oscillations in the S_N Solutions of Two-Dimensional Neutron Transport Equation," Proceedings of the International Conference on Mathematics and Computations, Reactor Physics, and Environmental Analyses, Portland, Oregon, April 30 - May 4, 1995.
16. Wagner, J. C. and A. Haghghat, "Application of the Discrete Ordinates Adjoint Function to Accelerate Monte Carlo Reactor Cavity Dosimetry Calculations," Proceedings of the 1996 Radiation Protection and Shielding Conference, Falmouth, MA, April 21-25, 1996.
17. Petrovic, B. and A. Haghghat, "Directional 1-Weighted S_N Differencing Scheme and Its Application to Pressure Vessel Fluence Calculations," Proceedings of the 1996 Radiation Protection and Shielding Conference, Falmouth, MA, April 21-25, 1996.
18. Haghghat, A., H. L. Hanshaw, and J. C. Wagner "Multigroup Cross Section Generation with Adjoint Weighting and Its Application to PV Dosimetry," Proceedings of the 1996 Radiation Protection and Shielding Conference, Falmouth, MA, April 21-25, 1996.
19. Morris, P. J., L. N. Long, A. Haghghat, M. L. Brady, "Curriculum Development on Advanced Computation," Proc. of the 1996 ASEE Annual Conference, 1996.

20. Haghghat, A., V. Kucukboyaci, G. Sjoden, and B. Petrovic, "Dose Estimation at a BWR Core Shroud Using PENTRAN," Proceedings of the Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Vol. I, 819-828, Saratoga Springs, NY, Oct. 6-10, 1997.
21. Sjoden G. E. and A. Haghghat, "PENTRAN - Parallel Environment Neutral-particle TRANsport in 3-D Cartesian Geometry," Proceedings of the Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Vol. I, 232-234, Saratoga Springs, NY, Oct. 6-10, 1997.
22. Petrovic, B., A. Haghghat, and J.C. Wagner, "Definition of a Computational 3-D Benchmark Problem for PWR Pressure Vessel Neutron Transport Calculations," Proceedings of the Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Vol. I, 292-301, Saratoga Springs, NY, Oct. 6-10, 1997.
23. Petrovic, B., J. C. Wagner, and A. Haghghat, "Verification of Improved Synthesized 3-D Sn and Monte Carlo Methods for Pressure Vessel Fast Neutron Fluence Calculations," Proceedings of the Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Vol. II, 1586-1595, Saratoga Springs, NY, Oct. 6-10, 1997.
24. Wagner, J. C. and A. Haghghat, "Monte Carlo PWR Cavity Dosimetry Calculations Using an Automatic Variance Reduction Technique," Proceedings of the Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Vol. II, 1031-1039, Saratoga Springs, NY, Oct. 6-10, 1997.
25. Wagner, J. C. and A. Haghghat, "Automatic Variance Reduction for Monte Carlo Shielding Calculations with the Discrete Ordinates Adjoint Function," Proceedings of the Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Vol. I, 671-680, Saratoga Springs, NY, Oct. 6-10, 1997.
26. Sjoden G. E. and A. Haghghat, "PENTRAN - A 3-D Cartesian Parallel Sn Code with Angular, Energy, and Spatial Decomposition," Proceedings of the Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Vol. II, 1267-1276, Saratoga Springs, NY, Oct. 6-10, 1997.
27. Sjoden G. E. and A. Haghghat, "The Exponential Directional Weighted (EDW) Sn Differencing Scheme in 3-D Cartesian Geometry," Proceedings of the Joint International Conference on Mathematical Methods and Supercomputing in Nuclear Applications, Vol. I, 553-562, Saratoga Springs, NY, Oct. 6-10, 1997.
28. Kucukboyaci, V. and A. Haghghat, "Analysis of PENTRAN Parallel 3-D Sn Code (Features/Formulations) for a BWR Shielding Problem," Proceedings of the 1998 ANS Radiation Protection and Shielding Division Topical Conference, Vol. 1, I-359:I-366, Nashville, TN, April 19-23, 1998,.
29. Petrovic, B., A. Haghghat, A. Motta, V. Kucukboyaci, and J. Kwon, "Contribution of Gamma Irradiation to Material Damage at BWR Core Shroud and Pressure Vessel," Proceedings of the 1998 ANS Radiation Protection and Shielding Division Topical Conference, Vol.2,II-25:II-32, Nashville, TN, April 19-23, 1998.
30. Petrovic, B., A. Haghghat, T. V. Congedo, and A. Haghghat, "Development and Validation of Transport Theory Methodology for Accurate Simulation of PGNAA System for Mixed-Waste NDA," Proceedings of the 6th Nondestructive Assay Waste Characterization Conference, 605-627, Salt Lake City, Utah, Nov. 17-19, 1998.
31. A. Haghghat, H. Hiruta, B. Petrovic, J. C. Wagner, "Performance of the Automated Adjoint Accelerated MCNP (A³MCNP) for Simulation of a BWR Core Shroud Problem," Proceedings of the Mathematics and Computation, Reactor Physics and Environmental Analysis in Nuclear Applications, Vol. 2, 1381-1392, Madrid, Spain, Sept. 27-30, 1999.
32. G.E. Sjoden and A. Haghghat, "Advanced 3-D Parallel Discrete Ordinates Methods for Criticality Safety Calculations," Proceedings of the Mathematics and Computation, Reactor Physics and Environmental Analysis in Nuclear Applications, Vol. 2, 1403-112, Madrid, Spain, Sept. 27-30, 1999.
33. A. Haghghat and G. Sjoden, "Significance of Adaptive Differencing, Variable Grid Density and TPMC for Sn Methods," Proceedings of the Mathematics and Computation, Reactor Physics and Environmental Analysis in Nuclear Applications, Vol. 2, 1748, Madrid, Spain, Sept. 27-30, 1999.
34. B. Petrovic, A. Haghghat, A. Dulloo, and T. G. Congedo, "Hybrid Forward Monte-Carlo - Adjoint Sn Methodology for Simulation of PGNAA Systems," Proceedings of the Mathematics and Computation, Reactor Physics and Environmental Analysis in Nuclear Applications, Vol. 2, 1016-1025, Madrid, Spain, Sept. 27-30, 1999.
35. A. Alpan and A. Haghghat, "Advanced Methodology for Selecting Group Structures for Multigroup Cross Section Generation," Proceedings of PHYSOR 2000 - ANS International Topical Meeting on Advances in Reactor Physics and Mathematics and Computation into the Next Millennium, Pittsburgh, PA, May 7-12, 2000.

36. V. Kucukboyaci and A. Haghghat, "Angular Multigrid Acceleration for Parallel Sn Method with Application to Shielding Problems," Proceedings of PHYSOR 2000 - ANS International Topical Meeting on Advances in Reactor Physics and Mathematics and Computation into the Next Millennium, Pittsburgh, PA, May 7-12, 2000.
37. A. Patchimpattapong and A. Haghghat, "Impact of Ray Effects on A³MCNP Performance for a Purely Absorbing Medium with Void Region," Proceedings of PHYSOR 2000 - ANS International Topical Meeting on Advances in Reactor Physics and Mathematics and Computation into the Next Millennium, Pittsburgh, PA, May 7-12, 2000.
38. A. Haghghat and G. E. Sjoden, "PENTRANTM (Parallel Environment Neutral-particle TRANsport) Code System," Proceedings of PHYSOR 2000 - ANS International Topical Meeting on Advances in Reactor Physics and Mathematics and Computation into the Next Millennium, Pittsburgh, PA, May 7-12, 2000.
39. A. Haghghat, "Graduate Education in Reactor Physics - Influence of Advancements in Computing Technologies," Proceedings of PHYSOR 2000 - ANS International Topical Meeting on Advances in Reactor Physics and Mathematics and Computation into the Next Millennium, Pittsburgh, PA, May 7-12, 2000.
40. J. F. Brown and A. Haghghat, "A PENTRANTM Model for a Medical Computed Tomography (CT) Device," Proceedings for the 10th International Meeting on Radiation Protection and Shielding (RPS2000), Spokane, WA, Sept. 17-21, 2000.
41. A. Haghghat, G.E. Sjoden, and V. Kucukboyaci, "Parallel Performance and Robustness of PENTRANTM for Simulation of Real-Life Shielding Problems," Proceedings for the 10th International Meeting on Radiation Protection and Shielding (RPS2000), Spokane, WA, Sept. 17-21, 2000.
42. F. A. Alpan and A. Haghghat, "Comparison of PSU and BUGLE Libraries with Application to Pressure Vessel Neutron Dosimetry," Proceedings for the 10th International Meeting on Radiation Protection and Shielding (RPS2000), Sept. 17-21, 2000, Spokane, WA.
43. V. Kucukboyaci and A. Haghghat, "Utilizing the Angular Multigrid Acceleration for Large Scale Transport Problems," Proceedings for the 10th International Meeting on Radiation Protection and Shielding (RPS2000), Sept. 17-21, 2000, Spokane, WA.
44. Longoni, G. and A. Haghghat, "Development of New Quadrature Stes with the "Ordinate Splitting" Technique," Proceedings of M&C 2001, CD, Salt Lake City, Utah, USA, Sept. 2001.
45. Gardner, S., A. Haghghat, A. Patchimpattapong, J. Adams, A. Carlson, S. Grimes, T. Massey, "Monte Carlo Analysis of Spherical Shell Transmission Experiment with New Tallying Methodology," Proceedings of M&C 2001, CD, Salt Lake City, Utah, USA, Sept. 2001.
46. Patchimpattapong, A. and A. Haghghat, "Developing an Expert System for Preparing an Effective Mesh Distribution for Sn Method in the Parallel Environment," Proceedings of the 12th Biennial RPSD Topical Meeting, Santa Fe, NM, April, 2002.
47. Alpan, F.A. and A. Haghghat, "Modifications to BUGLE Library Generation Procedures and Their Impact on Shielding Calculations," Proceedings of the 12th Biennial RPSD Topical Meeting, Santa Fe, NM, April, 2002.
48. Alpan, F.A. and A. Haghghat, "Aspects in Decreasing the Differences between Multigroup and Continuous energy Structure Calculations in Shielding Applications," Proceedings of the 12th Biennial RPSD Topical Meeting, Santa Fe, NM, April, 2002.
49. Longoni, G. and A. Haghghat, "Simulation of a CT-Scan device with PENTRAN using the new Pn-Tn quadrature set and an Angular Regional Refinement Technique," Proceedings of the 12th Biennial RPSD Topical Meeting, Santa Fe, NM, April, 2002.
50. Longoni, G. and A. Haghghat, "Development and Application of the Regional Angular Refinement Technique and its Application to Non-Conventional Problems", Proceedings of PHYSOR 2002, Seoul, Korea, October 2002.
51. Longoni, G., A. Haghghat and G. Sjoden, "Development and Application of the Multigroup Simplified P₃ (SP₃) Equations in a Distributed Memory Environment", Proceedings of PHYSOR 2002, Seoul, Korea, October 2002.
52. Kucukboyaci, V. and A. Haghghat, "Determination of Radiation Fields in Light Water Reactor Internals Using PENTRANTM", Proceedings of PHYSOR 2002, Seoul, Korea, October 2002.
53. Alpan, F. A. and A. Haghghat, "Construction of Fast Neutron Group Structures Using CPXSD for Shielding Problems," Nuclear Mathematical and Computational Sciences: A Century in Review, A Century Anew, Gatlinburg, Tennessee, April 6-11, 2003, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2003)

54. Patchimpattapong, A. and A. Haghghat, "Testing an EXPERT System for Selection of Mesh and Domain Decomposition of Parallel Sn Method," Nuclear Mathematical and Computational Sciences: A Century in Review, A Century Anew, Gatlinburg, Tennessee, April 6-11, 2003, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2003)
55. Longoni, G., G. E. Sjoden, and A. Haghghat, "Development and Applications of the SPL Methodology for a Criticality Eigenvalue Benchmark Problem," Nuclear Mathematical and Computational Sciences: A Century in Review, A Century Anew, Gatlinburg, Tennessee, April 6-11, 2003, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2003)
56. Patchimpattapong, A., A. Haghghat, and D. Shedlock, "An Expert System for Automatic Mesh Generation for Sn Particle Transport Simulation in Parallel Environments," Proceedings of the 2003 Supercomputing in Nuclear Applications (SNA 2003), Sept. 22-24, 2003, Paris, France.
57. Longoni, G. and A. Haghghat, "The Simplified Spherical Harmonics (SPL) Methodology with Space and Moment Decomposition in Parallel Environments," Proceedings of the 2003 Supercomputing in Nuclear Applications (SNA 2003), Sept. 22-24, 2003, Paris, France.
58. Longoni, G. and A. Haghghat, "The Even-Parity Simplified S_N Equations Applied to a MOX Fuel Assembly Benchmark Problem on Distributed Memory Environments," PHYSOR 2004 -The Physics of Fuel Cycles and Advanced Nuclear Systems: Global Developments, Chicago, Illinois, April, 25-29, 2004.
59. Wenner, M., A. Haghghat, J. Adams, A. Carlson, S. Grimes, and T. Massey, "Monte Carlo Modeling of a Time-of-Flight (ToF) Experiment for Determination of Fe Scattering Cross Sections," PHYSOR 2004 -The Physics of Fuel Cycles and Advanced Nuclear Systems: Global Developments, Chicago, Illinois, April 25-29, 2004.
60. Wenner, M., A. Haghghat, J. Adams, A. Carlson, S. Grimes, and T. Massey, "Development of a Methodology for Analysis of the Impact of Modifying Neutron Cross Sections," PHYSOR 2004 -The Physics of Fuel Cycles and Advanced Nuclear Systems: Global Developments Chicago, Illinois, April 25-29, 2004.
61. Wenner, M., A. Haghghat, J. Adams, A. Carlson, S. Grimes, and T. Massey, "Development of a Methodology for Analysis of the Fe-56 ENDF-B/VI Cross Sections with a Time-of-Flight Experiment, Proceedings of the 2004 Nuclear Data (ND 2004), April 2004.
62. Sato, O., S. Mitake, A. Haghghat, and G. E. Sjoden, "Comparison of automatic variance reduction techniques with adjoint solutions of two- and three-dimensional discrete ordinate calculations for Monte Carlo calculations of the spent fuel cask shielding," Proceedings of the ICRS-10 and RPS 2004 Joint Conference, May 9-14, 2004, Madeira, Funchal, Portugal (Invited Talk)
63. Dionne, B. and A. Haghghat, "Development of the ADEIS Variance Reduction Methodology for Coupled Electron-Photon Transport," Proceedings of MC2005 Conference, April 4-7, 2005, Chattanooga, TN
64. Haghghat, A. and G. E. Sjoden, "3-D Particle Transport Methods and Their Applications," Proceedings of the Applied Modeling and Computations in Nuclear Science, 230th ACS Meeting, Washington DC, August 28 – Sept. 1, 2005 (Invited paper).
65. Longoni, G., A. Haghghat, and G. Sjoden, "Evaluation of a New Preconditioning Algorithm Based on the 3-D Even-Parity Simplified Sn Equations for Discrete Ordinates in Parallel Environments," Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear and Biological Applications, Palais des Papes, Avignon, France, September 12-15, 2005, on CD-ROM, American Nuclear Society, LaGrange Park, IL, 2005.
66. Sjoden, G. E., D. Shedlock, A. Haghghat, and Ce Yi, "A Novel Two-Level Dynamic Parallel Data Scheme for Large 3-D Sn Calculations," Mathematics and Computation, Supercomputing, Reactor Physics and Nuclear and Biological Applications, Palais des Papes, Avignon, France, September 12-15, 2005, on CD-ROM, American Nuclear Society, LaGrange Park, IL, 2005.
67. B. Dionne, A. Haghghat, C. Yi, R. Smith, G. Ghita, K. Manalo, G. Sjoden, J. Huh, J. Baciak, T. Mock and M. Wenner, "A Detailed Neutronics Comparison of the University of Florida Training Reactor (UFTR) Current HEU and Proposed LEU Cores," Proceedings of PHYSOR 2006, Sept. 9-13, 2006, Vancouver, BC, Canada.
68. N. Kriangchaiporn, K.N. Ivanov, A. Haghghat, and C. F. Sears, Transport Model based on Three-Dimensional Cross-Section Generation for TRIGA Core Analysis," accepted for publication in the Proceedings of PHYSOR 2006, Sept. 9-13, 2006, Vancouver, BC, Canada.

69. Kennedy, R., B., Dionne, T., Aldemir, G., Sjoden, and A. Haghghat, "Sensitivity of k^∞ to Homogenization, and Dimension and Composition Uncertainties for Plate Type Research Reactor Fuel," Proceedings of PHYSOR 2006, September 10-14, 2006, Vancouver, BC, Canada.
70. Dionne, B., Haghghat, A. and Dempsey, J., "Impact of Magnetic Fields on Dose Distributions Delivered with a Device for 3D Image-Guided Radiotherapy," Transactions of Am. Nucl. Soc., Vol. 95, November 2006.
71. Yi, C., and A. Haghghat, "A Hybrid Block-Oriented Discrete Ordinates and Characteristics Method Algorithm for Solving Linear Boltzmann Equation," Joint International Topical Meeting on Mathematics & Computation and Supercomputing in Nuclear Applications (M&C + SNA 2007) Monterey, California, April 15-19, 2007, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2007).
72. Dionne, B., and A. Haghghat, "Impact of Importance Quality in Coupled Electron-Photon-Positron Simulation Using Splitting/ Rouletteing VR Techniques," Joint International Topical Meeting on Mathematics & Computation and Supercomputing in Nuclear Applications (M&C + SNA 2007) Monterey, California, April 15-19, 2007, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2007).
73. Haghghat, A., B. Dionne, G. Sjoden, J. Baciak, W. Vernetson, J. Matos, A. Olson, J. Stillman, and E. Feldman, "Methodologies and Related Issues - University of Florida HEU to LEU Fuel Conversion Project," GTRI Reactor Conversions Session, 48th Annual INMM Meeting, July 8-12, 2007, Tucson, Arizona.
74. Haghghat, A., Dionne, B., Sjoden, G., Baciak, J., Vernetson, W., Matos, J., et al., "Methodologies and Related Issues – University of Florida HEU to LEU Fuel Conversion Project," GTRI Reactor Conversions Session, 48th Annual INMM Meeting, Tucson, Arizona, July 8–12, 2007.
75. Wenner, M. and A. Haghghat, "A generalized KPSS test for stationarity detection in Monte Carlo eigenvalue problems," *International Conference on the Physics of Reactors "Nuclear Power: A Sustainable Resource"* Casino-Kursaal Conference Center, Interlaken, Switzerland, September 14-19, 2008.
76. Patel, A., A. Haghghat, and B. Lee, "Detailed Characterization of the Experimental Shield Tank Facility at the University of Florida Training Reactor," *International Conference on the Physics of Reactors "Nuclear Power: A Sustainable Resource"* Casino-Kursaal Conference Center, Interlaken, Switzerland, September, 14-19, 2008.
77. Yi, C., A. Haghghat, D. Gilland, and J. Parker, SPECT Imaging Simulation with Deterministic Method, Proceedings of the 2008 Nuclear Science Symposium (NSS) and Medical Imaging Conference (MIC), 2009.
78. Patel, A., A. Haghghat, and B. Lee, Detailed Characterization of the Experimental Shield Tank Facility at the University of Florida Training Reactor, Proceedings of the PHYSOR 2008 – International Conference on Reactor Physics, Interlaken, Switzerland, September 14-19, 2008.
79. Wenner, M. and A. Haghghat, A Generalized KPSS Test for Stationarity Detector in Monte Carlo Eigenvalue Problems, Proceedings of the PHYSOR 2008 – International Conference on Reactor Physics, Interlaken, Switzerland, September 14-19, 2008.
80. Kirk, B. L., G. Sjoden, and A. Haghghat, Activities of the Computational Medical Physics Working Group, accepted for publication in the Proceedings of the PHYSOR 2008 – International Conference on Reactor Physics, Interlaken, Switzerland, September 14-19, 2008.
81. Keller, K., C. Yi, and A. Haghghat, "Analysis of SPECT Imaging Simulation Using the TITAN Transport Code," Proceedings of the International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009) Saratoga Springs, New York, May 3-7, 2009, on CD-ROM, American Nuclear Society, LaGrange Park, Illinois (2009)
82. Yi, C. and A. Haghghat, "Hybrid Sn and Ray-Tracing with Fictitious Quadrature for Simulation of SPECT," Proceedings of the International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009) Saratoga Springs, New York, May 3-7, 2009, on CD-ROM, American Nuclear Society, LaGrange Park, Illinois (2009)
83. Haghghat, A., " A Perspective on Nuclear Engineering Education in the New Era," Proceedings of the International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009) Saratoga Springs, New York, May 3-7, 2009, on CD-ROM, American Nuclear Society, LaGrange Park, Illinois (2009)
84. Haghghat, A., G. Sjoden and C. Yi, "Analysis and Benchmarking of PENTRAN Code using the OECD-NEA Benchmark Problems," Proceedings of the International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009) Saratoga Springs, New York, May 3-7, 2009, on CD-ROM, American Nuclear Society, LaGrange Park, Illinois (2009)

85. Yi, C. and A. Haghghat, "Accuracy of TITAN Based on a new OECD-NEA Benchmark over a Range in Parameter Space," Proceedings of the International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009) Saratoga Springs, New York, May 3-7, 2009, on CD-ROM, American Nuclear Society, LaGrange Park, Illinois (2009)
86. Wenner, M. and A. Haghghat, "A Combined Diagnostic Approach for Monte Carlo Source Convergence Identification," Proceedings of the International Conference on Mathematics, Computational Methods & Reactor Physics (M&C 2009) Saratoga Springs, New York, May 3-7, 2009, on CD-ROM, American Nuclear Society, LaGrange Park, Illinois (2009)
87. Walters, W., Michael Wenner, Alireza Haghghat, Shivakumar Sitaraman and Young Ham, "Methodology and Determination of Field of View of Neutron and Gamma Detectors in the Atucha Spent Fuel Storage Pool," Institute of Nuclear Materials Management (INMM) 50th Annual Meeting, Tucson, Arizona, July 2009.
88. Patel, A. and A. Haghghat, "Development of an Efficient PENTRAN Model for Neutron Flux Simulation of the UFTR Shield Tank," Proceedings for PHYSOR 2010, Pittsburgh, PA, May 9-14, 2010.
89. Royston, K., A. Haghghat, and C. Yi, "Verification of a Hybrid Adjoint Methodology in TITAN for Single Photon Emission Computed Tomography," Proceedings of PHYSOR 2010, Pittsburgh, PA, May 9-14, 2010.
90. Walters, W., A. Haghghat, M. Wenner, S. Sitaraman, and Y. Ham, "A Methodology for Determination of Detector Response for Inspection of a Spent Fuel Pool, Proceedings of PHYSOR 2010, Pittsburgh, PA, May 9-14, 2010. (Received Best Student Award; 1st prize)
91. Wenner, M. A., A. Haghghat, "Fission Matrix Based Methodology for Achieving Unbiased Solutions for Eigenvalue MC Simulation, Proceedings of Joint International Conference on Supercomputing in Nuclear Applications and Monte Carlo 2010 (SNA + MC2010), Hitotsubashi Memorial Hall, Tokyo, Japan, October 17-20, 2010.
92. Royston, K., A. Haghghat, C. Yi, "Comparison of TITAN Hybrid Deterministic Transport Code and MCNP5 for Simulation of SPECT," Proceedings of Joint International Conference on Supercomputing in Nuclear Applications and Monte Carlo 2010 (SNA + MC2010), Hitotsubashi Memorial Hall, Tokyo, Japan, October 17-20, 2010.
93. Royston, K., A. Haghghat, C. Yi, A. Cebula, and D. Gilland, "Validation of a New Deterministic Transport Code for SPECT Simulation," Proceedings of 2010 IEEE NSS-MIC, Nov 2010.
94. Royston, K., A. Haghghat, and C. Yi, "Sensitivity Analysis of the TITAN Hybrid Deterministic Transport Code for SPECT Simulation," *International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering (M&C 2011)*, Rio de Janeiro, RJ, Brazil, May 8-12, 2011, on CD-ROM, Latin American Section (LAS) / American Nuclear Society (ANS), ISBN 978-85-63688-00-2.
95. Wenner, M. and A. Haghghat, "The Impact of Source Initialization on Performance of the FMBMC-ICEU Algorithm," *International Conference on Mathematics and Computational Methods Applied to Nuclear Science and Engineering (M&C 2011)*, Rio de Janeiro, RJ, Brazil, May 8-12, 2011, on CD-ROM, Latin American Section (LAS) / American Nuclear Society (ANS), ISBN 978-85-63688-00-2.
96. Sitaraman, S., Y. Ham, W. Walters, A. Haghghat, O. Peixoto, "In-Situ Verification of Spent Fuel at Atucha-I Nuclear Power Plant," *Proceedings of the INMM 52nd Annual Meeting*, Palm Desert, CA, July 17-21, 2011.
97. Royston, K. and A. Haghghat, "Development of a Collimator Representation in the TITAN Transport Code for SPECT Simulation, Proceedings of 2012 IEEE-MIC, Oct. 29, 2012.
98. Walters, W. and A. Haghghat, "Development of the Adaptive Collision Source (ACS) Method for Discrete Ordinates, 'International Conference on Mathematics and Computational Methods Applied to Nuclear Science & Engineering (M&C 2013), Sun Valley, Idaho, USA, May 5-9, 2013.
99. Royston, K., W. Walters*, A. Haghghat, C. Yi, and G. Sjoden, "Development and Application of a Hybrid Transport Methodology for Active Interrogation Systems," International Conference on Mathematics and Computational Methods Applied to Nuclear Science & Engineering (M&C 2013), Sun Valley, Idaho, USA, May 5-9, 2013.
100. Haghghat, A., K. Royston*, W. Walters*, C. Yi, G. Sjoden, "Development of AIMS Hybrid Tool for Active Interrogation, INMM 54th Annual Meeting, July 14-18, 2013.
101. Royston, K. and A. Haghghat, "Performance of the New WCOS Technique for the TITAN SPECT Formulation," *Proc. SNA+MC 2013*, Paris, France, Oct. 27-31, 2013.
102. Walters, W. and A. Haghghat, "Performance of the Adaptive Collision Source (ACS) Method for Discrete Ordinates in Parallel Environments," *Proc. Joint Int. Conf. on Supercomputing in Nuclear Applications and Monte Carlo 2013 (SNA + MC 2013)*, Paris, France, October 27-31, 2013.

103. Haghghat, A., K. Royston, and W. Walters, J. Bergman and D. Raine, "Development of methodologies for Ex-core Detector Modeling for SMR's," Proceedings of the ASME 2014 Small Modular Reactors Symposium SMR14, April 15-17, 2014, Washington, DC, USA.
104. Royston, K. and A. Haghghat, "Preliminary Results of a New Deterministic Iterative Image Reconstruction Algorithm," *Proc. ANS RPSD 2014*, Knoxville, TN, September 14-18, 2014.
105. Haghghat, A., K. Royston, C. Yi, "Application of the TITAN Hybrid Deterministic Transport Code to Medical Physics," *Proc. ANS RPSD 2014*, Knoxville, TN, September 14-18, 2014, *invited*
106. Walters, W., N. Roskoff and A. Haghghat, "Use of the Fission Matrix Method for Solution of the Eigenvalue Problem in a Spent Fuel Pool" *Proc. PHYSOR 2014*, Kyoto, Japan, Sep. 28-Oct 3, 2014.
107. Roskoff, N., W. Walters, and A. Haghghat, "Implementation and Verification of the SDM in the TITAN 3-D Sn Transport Code," *Proc. PHYSOR 2014*, Kyoto, Japan, Sep. 28-Oct 3, 2014.
108. Walters, W., N. Roskoff, and A. Haghghat, 'A Fission Matrix Approach to Calculate Pin-Wise 3-D Fission Density Distribution Joint International.' ANS MC2015 – Conference on Mathematics and Computation (M&C), Supercomputing in Nuclear Applications (SNA) and the Monte Carlo (MC) Method, Nashville, Tennessee, April 19–23, 2015, on CD-ROM, American Nuclear Society, LaGrange Park, IL (2015)

Posters (based on refereed abstract)

1. Walters, W., A. Haghghat, S. Sitaraman, and Y. Ham, "Development of INSPCT-S for Inspection of Spent Fuel Pool," accepted for publication in the proceedings of the 14th International Symposium of Reactor Dosimetry (ISR-14), Mt. Washington Resort, Bretton Woods, NH, May, 22-27, 2011.
2. Haghghat, A., C. Yi, and K. Royston, A Hybrid Methodology Based on Ray-Tracing and Sn Algorithms with Fictitious Quadrature for Calculation of Dose Due to Radiation Streaming, accepted for publication in the proceedings of the 14th International Symposium of Reactor Dosimetry (ISR-14), Mt. Washington Resort, Bretton Woods, NH, May 22-27, 2011.

Refereed Summaries

1. Haghghat, A. and G. Kosaly, "The Importance of Transport Theory Effects on the Determination of the Field-of-View of a BWR Incore Detector," Transactions of the American Nuclear Society, 54:357-358 (June 1987).
2. Haghghat, A. and A.J. Baratta, "Theoretical Analysis of the Gamma Detector Data from the TMI-2 Reactor Lower Head," Transactions of the American Nuclear Society, 56:548-550 (June 1988).
3. Haghghat, A., "Investigation of the Control Rod Material Presence in the TMI-2 Lower Head," Transactions of the American Nuclear Society, 59:348-350 (June 1989).
4. Haghghat, A., "Parallelization of a Spherical S_N Transport Theory Algorithm," Transactions of the American Nuclear Society, 59:155-156 (June 1989).
5. Mattis, R. and A. Haghghat, "A New Vectorized Rebalancing Algorithm for Neutronics Codes," Transactions of the American Nuclear Society, 59:153-154 (June 1989).
6. Haghghat, A. and R. Lawrence, "Implementation of a Parallel Algorithm for Spherical S_N-Calculations on the IBM 3090," Transactions of the American Nuclear Society, 60:367-369 (November 1989).
7. Macafee, W. and A. Haghghat, "Simulation of a Steam Turbine Using TRAC-BF1," Transactions of American Nuclear Society, 61:447-448 (June 1990).
8. Mattis, R. and A. Haghghat, "New Vectorized Algorithms for the Spherical S_N Method," Transactions of the American Nuclear Society, 62:303-304 (November 1990).
9. Haghghat, A., B. Nanayakkara, J. Livingston, M. Mahgerefteh, and J. Luoma, "Application of the Adjoint-function Methodology for Neutron Fluence Determination," Transactions of the American Nuclear Society, 63:419- 420 (June 1991).
10. Mattis, R. and A. Haghghat, "Spatial Domain Decomposition for a Two-Dimensional S_N Transport Method," Transactions of the American Nuclear Society, 63:181-183 (June 1991).

11. Haghghat, A. and R. Veerasingam, "Comparison of the Different Cross-Section Libraries used for Reactor Pressure Vessel Fluence Calculations," Transactions of the American Nuclear Society, 64, p. 539 (November 1991).
12. Haghghat, A. and B. Nanayakkara, "Comparison of the Different Neutron Spectra Used for the Reactor Pressure Vessel Fluence Estimation," Trans. of Am. Nucl. Soc., 65:435-437 (June 1992).
13. Haghghat, A. "Different Spatial Parallel Sn Algorithms for the 1-D Spherical Geometry," Trans. of Am. Nucl. Soc., 65:206-207 (June 1992).
14. Petrovic, B. and A. Haghghat, "Effect of Quadrature Order on the Accuracy of Fluence Calculations," Trans. of Am. Nucl. Soc., Vol. 68, Part A, 477-480, 1993.
15. Wagner, J. and A. Haghghat, "Investigation of Pressure Vessel Neutron Fluence Calculation with Monte Carlo," Trans. of Am. Nucl. Soc., Vol. 68, Part A, 446-448, 1993.
16. Asam Khan and A. Haghghat, "One and Three-Dimensional Particle Transport Studies of the ANS Hot Source," Trans. of Am. Nucl. Soc., Vol. 69, 459, 1993.
17. Haghghat, A., B. Petrovic and M. Mahgerefteh, "Estimation of Neutron Source Uncertainties in Pressure Vessel Fluence Calculations," Trans. of Am. Nucl. Soc., Vol. 69, 467, 1993.
18. Wagner, J., A. Haghghat, and B. Petrovic, "Multigroup versus Continuous Energy MCNP for PWR Fluence Calculations," Trans. of Am. Nucl. Soc., Vol. 70, 1994.
19. Petrovic B. and A. Haghghat, "Analysis of Oscillations in the 1-weighted Differencing Scheme," Trans. Am. Nucl. Soc., Vol. 71, 1994.
20. Petrovic B., H. Hanshaw and A. Haghghat, "Evaluation of Anisotropy Effects in Pressure Vessel Fluence Calculations Using BUGLE-93 Library," Trans. Am. Nucl. Soc., Vol. 71, 1994.
21. Balachov I. and A. Haghghat, "Analysis of Database of LEPRICON Adjustment Code," Trans. Am. Nucl. Soc., Vol. 71, 1994.
22. Hanshaw H. and A. Haghghat, "Estimation of the Effects of Self-Shielding on Multigroup Reactor Vessel Fluence Calculations," Trans. Am. Nucl. Soc., Vol. 71, 1994.
23. Petrovic B. G. and A. Haghghat, "Oscillations Caused by Spatial Differencing in Multidimensional Sn Neutron Transport Calculations," Trans. Am. Nucl. Soc., Vol. 72, 1995.
24. Petrovic, B. and A. Haghghat, "A New Directional 1-Weighted S_N Differencing Scheme," Trans. Am. Nucl. Soc., Vol. 73, 195-197, 1995.
25. Petrovic, B. and A. Haghghat, "Application of the Directional 1-Weighted S_N Differencing Scheme to Pressure Vessel Fluence Calculations," Trans. Am. Nucl. Soc., Vol. 73, 346-347, 1995.
26. Hanshaw, H. L., A. Haghghat, and J. C. Wagner "Multigroup Cross Section Generation with Spatial and Angular Weighting," Trans. Am. Nucl. Soc., Vol. 73, 175-177, 1995.
27. Wagner, J. C. and A. Haghghat, "Deterministic Adjoint Functions for Biasing Monte Carlo Reactor Cavity Dosimetry Calculations," Trans. Am. Nucl. Soc., Vol. 73, 432-434, 1995.
28. Klevans, E. H. and A. Haghghat, "Remote Site Graduate Instruction Using Interactive Compressed Video," Trans. Am. Nucl. Soc., Vol. 73, 70-71, 1995.
29. Haghghat, A. et al, "Uncertainties in Transport Theory Pressure Vessel Neutron Fluence Calculations," Trans. Am. Nucl. Soc., Vol. 74, 1996.
30. Sjoden, G. and A. Haghghat, "PENTRAN: A 3-D Scalable Transport Code with Complete Phase Space Decomposition," Trans. Am. Nucl. Soc., Vol. 74, 1996.
31. Sjoden, G. and A. Haghghat, "Taylor Projection Mesh Coupling Between 3-D Discontinuous Grids for S_N," Trans. Am. Nucl. Soc., Vol. 74, 1996.
32. Hunter, M. A. and A. Haghghat, "Comparison of Acceleration Schemes for Parallel S_N Algorithm Solution of Shielding Problems," Trans. Am. Nucl. Soc., Vol. 74, 1996.

33. Sjoden, G. and A. Haghghat, "New Adaptive Differencing Strategy in the PENTRAN 3-D Parallel Sn Code," Trans. Am. Nucl. Soc., Vol. 75, 1996.
34. Sjoden, G. and A. Haghghat, "Simplified Multigrid Acceleration in the PENTRAN 3-D Parallel Code," Trans. Am. Nucl. Soc., Vol. 75, 1996.
35. Wagner, J. C. and A. Haghghat, "Parallel MCNP Monte Carlo Transport Calculations with MPI," Trans. Am. Nucl. Soc., Vol. 75, 1996.
36. Petrovic, B., Young-Su Kim, and A. Haghghat, "Characterization of Neutron and Gamma Radiation Fields at Penn State Breazeale Reactor," Trans. Am. Nucl. Soc., Vol. 75, 1996.
37. Haghghat, A. and B. Petrovic, "Particle Transport Methods for LWR Dosimetry Developed by the PSTTG Group," Trans. Am. Nucl. Soc., Vol. 77, 1997.
38. Hiruta, H., A. Haghghat, and B. Petrovic, "Neutron Fluence Calculations at a BWR Core Shroud Using A³MCNP," Trans. Am. Nucl. Soc., Vol. 79, 1998.
39. Sjoden, G.E., A. Haghghat, "EDW Sn Differencing Compared to Monte Carlo for Zero-C Problems," Trans. Am. Nucl. Soc., Vol. 80, 1999.
40. Petrovic, B., A. Haghghat, A. Dulloo, and T. Congedo, "Study of Kinetics of a PGNA System for Nondestructive Characterization of Mixed Waste," Trans. Am. Nucl. Soc., Vol. 80, 1999.
41. Kucukboyaci, V., A. Haghghat, H. Hiruta, and B. Petrovic, "Determination and Analysis of Neutron and Gamma Fields at BWR Core Shroud Using the Discrete Ordinates (Sn) Method," Trans. Am. Nucl. Soc., Vol. 80, 1999.
42. V. Kucukboyaci, A. Haghghat, H. Hiruta, and B. Petrovic, "Determination and Analysis of Neutron and Gamma Fields at BWR Core Shroud Using Discrete Ordinates (Sn) Method," Trans. Am. Nucl. Soc., Vol. 80, P. 129, 1999 ANS Annual Meeting, June 6-10, 1999, Boston, MA.
43. G. Sjoden, A. Haghghat, A. Patchimpattapong, "EDW Sn Differencing Compared to Monte Carlo for Zero-C Problems," Trans. Am. Nucl. Soc., Vol. 80, P. 147, 1999 ANS Annual Meeting, June 6-10, 1999, Boston, MA.
44. B. Petrovic, A. Haghghat, A. Dulloo, and T. V. Congedo, "Study of Kinetics of a PGNA System for Nondestructive Characterization of Mixed Waste," Trans. Am. Nucl. Soc., Vol. 80, P. 62, 1999 ANS Annual Meeting, June 6-10, 1999, Boston, MA.
45. V. Kucukboyaci and A. Haghghat, "A Simplified Angular Multigrid Method to Accelerate Sn Calculations," Trans. Am. Nucl. Soc., Vol. 81, P. 140, 1999 ANS Winter Meeting, Nov. 14-18, 1999, Long Beach, CA.
46. A. Patchimpattapong and A. Haghghat, "Effectiveness of A³MCNP for a Purely Absorbing Medium with Void Region," Trans. Am. Nucl. Soc., Vol. 81, P. 257, 1999 ANS Winter Meeting, Nov. 14-18, 1999, Long Beach, CA.
47. A. Alpan and A. Haghghat, "MPI Version of NJOY and Its Application to Multigroup Cross-Section Generation," Trans. Am. Nucl. Soc., Vol. 81, P. 260, 1999 ANS Winter Meeting, Nov. 14-18, 1999, Long Beach, CA.
48. B. Petrovic, A. Haghghat, T. Congedo, and A. Dulloo, "Application of Forward Monte-Carlo-Adjoint Sn Methodology for Simulations of PGNA System for Assaying of Mixed Waste in 55-gal Drums," Trans. Am. Nucl. Soc., Vol. 82, P. 125, 2000 Annual Meeting, June 4-8, 2000, San Diego, CA.
49. A. Haghghat, G.E. Sjoden, and J. C. Wagner, "Advanced Three-Dimensional Deterministic and Monte Carlo Codes for Simulation of Real-Life Complex Nuclear Systems," Trans. Am. Nucl. Soc., Vol. 82, P. 125, 2000 Annual Meeting, June 4-8, 2000, San Diego, CA.
50. G. Longoni, A. Haghghat, J. Brown, and V. Kucukboyaci, "Investigation of New Quadrature Sets for Discrete Ordinates Method with Application to Non-Conventional Problems," ANS 2001 Annual Meeting, June 2001.
51. Michael T. Wenner, Alireza Haghghat, and Shane Gardner, "Acceleration of the Monte Carlo Criticality Calculation via Discrete Ordinates (Sn) Methods," ANS 2001 Annual Meeting, June 2001. (Invited)
52. S. Gardner, A. Haghghat, A. Patchimpattapong, J. Adams, A. Carlson, S. Grimes, T. Massey, "A New Monte Carlo Tallying Methodology for Optimizing the NERI Spherical-Shell Transmission Experiment," ANS 2001 Annual Meeting, June 2001. (Invited)

53. Vefa Kucukboyaci , Alireza Haghghat, James M. Adams , Allan D. Carlson , Steven M. Grimes , Thomas N. Massey, "PENTRAN™ Modeling for Design and Optimization of the Spherical-Shell Transmission Experiments," Trans. Am. Nucl. Soc., June 2001. (Invited)
54. V. Kucukboyaci and A. Haghghat, "Analysis of Angular V-Cycle Multigrid Formulation for 3-D Discrete Ordinates Method," Trans. Am. Nucl. Soc., June 2001. (Invited)
55. A. Haghghat, "Monte Carlo Methods in Reactor Physics," Trans. Am. Nucl. Soc., June 2001. (Invited)
56. G. Longoni and A. Haghghat, "Development of the Regional Angular Refinement and its Application to the CT-Scan device", Trans. Am. Nucl. Soc., June 2002. (Winner of the best paper award).
57. Kucukboyaci, V. and A. Haghghat, "Computing Radiation Fields in Light Water Reactor Internals Using Discrete Ordinates (Sn) Method, Trans. Am. Nucl. Soc., June 2002.
58. Patchimpattapong, A. and A. Haghghat, "Development of an Expert System for Generation an Effective Mesh Distribution for the Sn Methods in Parallel Environment," Trans. Am. Nucl. Soc., June 2002.
59. Alpan, F. A. and A. Haghghat, "Advanced Multigroup Libraries for Pressure Vessel Dosimetry," Trans. Am. Nucl. Soc., Vol., June 11-17, 2003.
60. Patchimpattapong A. and A. Haghghat, "Effectiveness an EXPERT SYSTEM for Selection of Parallel Sn Domain Decomposition Strategy (DDS)," Trans. Am. Nucl. Soc., Vol., June 11-17, 2003.
61. Haghghat, A. Ce Yi, and Glenn Sjoden "Accuracy of PENTRAN Criticality Calculations based on the C5G7 MOX Benchmark," Trans. Am. Nucl. Soc., Nov. 9-14, 2003, New Orleans, LA.
62. Kriangchaiporn, N., Kostadin Ivanov, Alireza Haghghat, and Frederick Sears, "Multi-group Cross-Section Generation for TRIGA Core Analysis," Trans. Am. Nucl. Soc., Nov. 9-14, 2003, New Orleans, LA
63. Shedlock, D. and A. Haghghat, "Use of Advanced Sn Methods for Determination of Neutron Doses Throughout a Spent Fuel Storage Cask," Trans. Am. Nucl. Soc., Nov. 9-14, 2003, New Orleans, LA
64. Haghghat, A., D. Smith, K. Folk, A. Horner, P. Burneson, and J. G. Austin, III, "The impact of the DOE/Industry Matching Program on the University of Florida Nuclear & Radiological Engineering Department," Trans. Am. Nucl. Soc., Nov. 9-14, 2003, New Orleans, LA
65. Dionne, B., and A. Haghghat, "Variance Reduction of Electron Transport Calculations Using 1-D Importance Functions," Trans. Am. Nucl. Soc., Nov. 14-19, 2004, New Orleans, LA
66. Wenner, M. T., and A. Haghghat, "Study of Methods of Stationarity Detection for Monte Carlo Criticality Analysis with KENO V.a," Transaction of ANS, Nov. 2007.
67. Yi, C., A. Haghghat, and G. Sjoden, Parallel Performance of a Hybrid Discrete Ordinate and Characteristics Algorithm, Trans. Am. Nucl. Soc., June 2008.
68. Huh, J., A. Haghghat, and J. Baciak, Constructing the Response Function for a BGO Detector Using MCNP5 and a Deconvolution Algorithm in the Low Gamma Energy, Trans. Am. Nucl. Soc., June 2008.
69. Feng, Y., J. Baciak, and A. Haghghat, "Design of a Compton Camera for Imaging Gamma Emission in Proton therapy," Proceedings of the AAPM annual meeting, July 2008.
70. Walters, W. A. Haghghat, M. Wenner, S. Sitaraman, and Y. Ham, "Calculation of Sub-Critical Multiplication Using a Simplified Fission Matrix Method," Trans. Am. Nucl. Soc., Nov. 2009.
71. A. Haghghat, K. Royston, W. Walters, C. Yi and G. Sjoden, "Development of a Hybrid Transport Methodology for Evaluation of Angular Flux at a Detector Window of an Active Interrogation System," SORMA 2012, Oakland, CA, May 14-17, 2012.
72. Royston*, K., W. Walters*, A. Haghghat, C. Yi, and G. Sjoden, 'Development of Active Interrogation for Monitoring Special-nuclear-materials (AIMS) Hybrid Tool,' ANS Annual Meeting, June 16-20, 2013, Atlanta, GA.
73. B. Upadhyaya, A. Haghghat, C. Atchley, N. Roskoff, "Curriculum Development on Nuclear Reactor Instrumentation and Controls (I&C)" *Proc. ANS 2014*, Washington, DC, Nov. 10-14, 2013.

Reports

1. Haghghat, A. and A. Khan, "Modeling a Hot Source for the Advanced Neutron Source Project," ORNL/ANS/INT-47, Oak Ridge National Laboratory, 1993.
2. J. Bell, N. Roskoff, A. Haghghat, and C. Leidig, 'Investigation into the Unintended Consequences of Converting the U.S. Nuclear Naval Fleet from High Enriched Uranium (HEU) to Low Enriched Uranium (LEU),' posted at <https://fas.org/pub-reports/naval-nuclear-propulsion-assessing-benefits-risks/>, March 2015

Standards

1. Haghghat, A. et al. "Transport Theory Calculations for Pressure Vessel Cavity Dosimetry," American Nuclear Society (ANS) 19.10 Standard, Draft, June 1996.

Benchmarks

1. Contributed to the OECD report on "3D Radiation Transport benchmarks for Simple Geometries with Void Region," OECD/NEA Paris, NEA/NSC/DOC(2000)4, Spring 2000. [A. Haghghat and G. Sjoden, "Solutions to the Kobayashi Benchmark Shielding Problems Using PENTRAN,"]
2. Contributed to the OECD report on "Prediction of Neutron Embrittlement in the Reactor Pressure Vessel: VENUS-1 and VENUS-3 Benchmarks," OECD/NEA Paris, NEA/NSC/DOC(2000)5, Spring 2000.[Haghghat, A. G.E. Sjoden, and H. Ait Abderrahim, "Simulation of the VENUS-3 Experimental Benchmark Facility Using PENTRAN]

Non-Refereed Articles

1. Haghghat, A., "The Concept of LPRMS for BWR Stability Monitoring," Proceedings of the 1989 Stability Symposium, INEL, EG&G Idaho, Inc. (August 10-11, 1989).
2. Macafee, W. and A. Haghghat, "Simulation of High and Low Pressure Turbines Using TRAC-BF1," Proceedings of the First Joint RELAP-5/TRAC-BF1 Workshop, Commonwealth Edison Co., Chicago, IL (September 1990).
3. Haghghat, A., "Sn Transport Theory Codes for the Parallel Architectures," Proceedings of the Specialists' Meeting on Adapting Computer Codes in Nuclear Applications to Parallel Architectures, October 14-15, 1993, Madrid, Spain.
4. Baker, R., Y. Y. Azmy, and A. Haghghat, "Parallel Computing in Nuclear Applications," Section 4.1B, OECD report, 1996.
5. Haghghat A. and G. Sjoden "PENTRAN - A 3-D Discrete Ordinates Transport Code with Complete Phase Space Decomposition for Parallel Computers," Proceedings of the 3-D Deterministic Radiation Transport Computer Programs- Features, Applications, and Perspectives, OECD Chateau de la Muette, Paris XVI, France, Dec. 2-3, 1996.
6. Sjoden, G. and A. Haghghat, "Implementation of PENTRAN on Distributed Memory Architectures," Proceedings of the 3-D Deterministic Radiation Transport Computer Programs- Features, Applications, and Perspectives, OECD Chateau de la Muette, Paris XVI, France, Dec. 2-3, 1996.
7. Sjoden, G. and A. Haghghat, "An Adaptive Differencing Strategy and A Simplified Multigrid Acceleration Method with TPMC in PENTRAN," Proceedings of the 3-D Deterministic Radiation Transport Computer Programs- Features, Applications, and Perspectives, OECD Chateau de la Muette, Paris XVI, France, Dec. 2-3, 1996.
8. Haghghat, A., G. Sjoden, V. Kucukboyaci, and B. Petrovic, "Determination of Neutron Flux at the BWR Core Shroud Using PENTRAN" Proceedings of the 3-D Deterministic Radiation Transport Computer Programs-Features, Applications, and Perspectives, OECD Chateau de la Muette, Paris XVI, France, Dec. 2-3, 1996.
9. Haghghat, A., "Recent Applications and Advancements in the PENTRAN and A³MCNP Code Systems," International Joint Meeting Cancun 2004 LAS/ANS-SNM-SMSR XV SNM Annual Meeting and XXII SMSR Annual Meeting, Cancún, Q.R., Mexico, July 11-14, 2004.
10. Haghghat, A., "Recent Advances in Hybrid Methods Applied to Neutral Particle Transport Problems," 2005 International Nuclear Atlantic Conference - INAC 2005 Santos, SP, Brazil, ASSOCIAÇÃO BRASILEIRA DE ENERGIA NUCLEAR – ABEN, ISBN: 85-99141-01-5, (2005).