

## Thomas M. Evans

### Work:

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<b>Education</b>	GEORGIA INSTITUTE OF TECHNOLOGY Ph.D. in Nuclear Engineering, March 1997. GPA 4.0.	Atlanta, GA
	GEORGIA INSTITUTE OF TECHNOLOGY M.S. in Health Physics, Medical Physics Option, March 1994. GPA 4.0.	Atlanta, GA
	HAVERFORD COLLEGE B.S. in Physics and Astronomy, May 1992. GPA 3.3. Thesis, <i>The Dipole Anisotropy of the Cosmic X-Ray Background</i> .	Haverford, PA

**Research** PH.D. DISSERTATION: *The Calculation and Measurement of Nanodosimetric Energy Distributions for Electrons and Photons*. Advisor: Dr. C.K. Wang.

ANALYTICAL/COMPUTATIONAL: Expert in computational science methods and applications including PDE solvers, Monte Carlo methods, linear algebra, Fourier and error analysis, and parallel algorithms. Designed source specific radiation transport codes using  $S_N$ ,  $P_N$ , and Monte Carlo transport techniques. Extensive work in radiation-hydrodynamics coupling. Experience using radiation transport codes including MCNP, ITS, PARTISN, LAHET, and EGS and the radiation-hydrodynamics code RAGE. Principal developer of the following Oak Ridge National Laboratory codes:

- Denovo: a parallel, 3-D, discrete-ordinates ( $S_N$ ) linear transport code (C++, PYTHON, F95).

Have been a co-developer on the following major Los Alamos National Laboratory physics codes:

- RAGE: a parallel, Adaptive Mesh, Eulerian radiation-hydrodynamics code (F90).
- Milagro: a parallel, Implicit Monte Carlo radiation transport code (C++); principal developer, LA-CC-03-009.
- MCNP: an n-particle Monte Carlo transport code (F77); wrote packages for automated variance reduction, LA-13709-M.

EXPERIMENTAL: Extensive experience measuring single and mixed radiation fields using gas, film, and solid state detectors. Designed and fabricated Superheated Liquid Drop Detectors for neutron and photon dosimetry. Experience with radiation detection techniques involving charged particle, photon, and neutron fields. Utilized and designed systems for radiation spectroscopy and spectrum unfolding, dosimetry, and microdosimetry. Experience using A/D data acquisition systems, cryogenic and vacuum technology, and basic circuit design for data analysis. Designed data acquisition software using VISUAL BASIC and C/C++. Experience designing and building neutron and photon source shields.

OTHER RESEARCH EXPERIENCE: Research experience in computational radiation transport and radiative transfer, fusion Tokamak divertors, radiological risk assessment, neutron capture therapy, ray-tracing algorithms, and Compton camera imaging.

**Employment** OAK RIDGE NATIONAL LABORATORY, 4/2007–PRESENT Oak Ridge, TN  
SENIOR R&D STAFF  
Develop computational methods, algorithms, and parallel application codes in the Nuclear Science and Technology Division for ORNL customers. Develop and submit proposals for scientific funding.

LOS ALAMOS NATIONAL LABORATORY, 4/1997–4/2007 Los Alamos, NM  
PROJECT LEADER, 10/2003–4/2007  
TECHICAL STAFF MEMBER, 11/1997–10/2003  
POSTDOCTORY FELLOW, 4/1997–11/1997  
Project Leader of the Marmot and Jayenne projects. The Marmot project was a multi-physics code development effort within the Computational Sciences Program Element of ASC (Advanced Simulation and Computing) at LANL. Jayenne is a Monte Carlo thermal radiation project that encompasses the Milagro IMC code. As a staff member, contributed to radiation transport and radiative transfer methods development in CCS-4 Transport Methods Group. Mentor to junior staff members and graduate students. As a postDoc, wrote physics, variance reduction, and capabilities packages for MCNP.

**Internships and Research** GEORGIA INSTITUTE OF TECHNOLOGY, 1994–1997 Atlanta, GA  
GRADUATE RESEARCH ASSISTANT  
Investigated topics in microdosimetry, Compton camera imaging, and NCT. System administrator for the Radiological Engineering Computer Network (RECoN) which featured five SUN UNIX workstations and peripheral devices. Webmaster for the RECoN World Wide Web server.

RADIATION ONCOLOGY INC., SUMMER 1993 Atlanta, GA  
MEDICAL PHYSICS INTERN  
Performed instrument calibrations and therapy planning in conjunction with an ACR certified medical physicist at a radiation oncology treatment center.

NEELY NUCLEAR RESEARCH CENTER, 1992–1993 Atlanta, GA  
GRADUATE HEALTH PHYSICS ASSISTANT  
Performed radiation surveys, instrument calibrations, and ALARA enforcement. Managed Georgia Tech campus low-level radioactive waste.

HVERFORD COLLEGE, SUMMER 1991,90 Haverford, PA  
RESEARCH ASSISTANT  
Investigated large scale galactic structure including the cosmic x-ray and microwave backgrounds.

**Consulting** UNIVERSITY OF NEW MEXICO, LOS ALAMOS, SPRING 2002 Los Alamos, NM  
INSTRUCTOR  
Taught CS 351: Design of Large Programs, a 3-credit hour graduate course required by the Computer Science Department at UNM.

MGP INSTRUMENTS, 1994–1996 Smyrna, GA  
R&D CONSULTANT  
Performed MCNP simulations and assisted with primary calibrations to determine detector responses and submitted reports through MGPI to customers. This was a one-third time consulting job.

**Computer Skills**

OPERATING SYSTEMS: Advanced user and developer on POSIX-standard systems (UNIX, LINUX, DARWIN). Expert developer on LINUX and MACOS systems. Developed advanced physics codes on platforms running AIX, SOLARIS, IRIX, Tru64, Darwin and LINUX. Have system administration experience on SPARC clusters running SOLARIS and a 12 box LINUX cluster.

PROGRAMMING LANGUAGES: Expert programming ability in C++, C, and FORTRAN. Advanced user of multiple scripting and extension languages including PYTHON, TCL/TK, Lisp, and BASH. Experienced user of XML and DocBook. Advanced user of L<sup>A</sup>T<sub>E</sub>X and T<sub>E</sub>X typesetting systems.

PARALLEL COMPUTING: Have developed code on large Symmetric Multi-Processing (SMP) computers (ASCI Blue Mountain, ASCI Q, ASCI WHITE, Lightning). Extensive knowledge of parallel programming systems and libraries including MPI, Pthreads, and OpenMP. Parallel programming and analysis experience on multi-core architectures.

TOOLS AND APPLICATIONS: Developed advanced build models utilizing AUTOMAKE, AUTOCONF and GMAKE. Extensive knowledge of pre-processors including CPP and M4. Advanced user of the CVS/RCS version control system. Have designed GUI code with visual tools including Visual Basic and Visual C/C++. Mathematical simulation programming experience with Mathematica. Extensive experience utilizing visualization software including OpenDX and Ensight. Experience utilizing scientific software libraries including BLAS, LAPACK, ATLAS, HDF, and SPRNG. Extensive experience using common desktop applications including MS Office. Extensive experience testing open-source software.

**Certifications**

- DOE Q-clearance

**Teaching**

- CS 351, *Design of Large Programs*, Instructor, University of New Mexico, Los Alamos, Spring 2002.
- IEEE Short Course, *Electron-Photon Transport Modeling with MCNP*, Nuclear Science Symposium and Medical Imaging Conference, Albuquerque, NM, November 10, 1997.
- NE/HP 6750, *Radiation Detection*, Teaching Practicum, Georgia Inst. of Tech., Fall Quarter, 1996.
- HP 8113, *Advanced Radiation Dosimetry*, Teaching Assistant, Georgia Inst. of Tech., Spring Quarter 1995.
- HP 6410, *Radiation Dosimetry*, Teaching Practicum, Georgia Inst. of Tech., Winter Quarter 1995.

**Professional Courses Taken**

- Construx Software, *Software Project Survival*. Los Alamos, NM, October, 2003.
- Construx Software, *Real World Requirements*. Los Alamos, NM, October, 2003.
- Construx Software, *Success through Risk Management*. Los Alamos, NM, October, 2003.
- Construx Software, *Configuration Management*. Los Alamos, NM, October, 2003.
- Los Alamos National Lab, *Python for Scientists and Engineers*. Los Alamos, NM, October 21–22, 1999.
- True North pgs, Inc. *Mastering Projects Workshop*. Los Alamos, NM, August 18–21, 1998.
- Los Alamos National Lab, *Introduction to DANTSYS*. Los Alamos, NM, June 17–20, 1997.

- Los Alamos National Lab, *Advanced MCNP Topics*. Los Alamos, NM, May 13–16, 1997.
- Health Physics Society Summer School, *Internal Radiation Dosimetry*. UC-Davis, CA, June 20–24, 1994.

## Awards

- NNSA Defense Programs Award of Excellence, 2005.
- Los Alamos LAAP Achievement Award, (2×) July 2006, August 2005, (2×) August 2004, June 2002.
- Los Alamos National Laboratory Distinguished Performance Award, *Jayenne Implicit Monte Carlo Project*, 2002.
- Best Paper Award, ANS Radiation Protection and Shielding Division Topical Meeting, Nashville, TN, 1998.
- Sigma Xi award for Best Ph.D. Thesis, Georgia Institute of Technology, 1997.
- Best Paper Award, Radiation Protection and Shielding Division, ANS Winter Meeting, Washington D.C., 1996.
- *Who's Who in America's Colleges and Universities*, 1996-1997.
- Best Paper Award, 3rd Place in Conference, ANS/HPS Eastern Regional Student Conference, Gainesville, FA, 1996.
- Best Paper Award, Risk and Safety Session, ANS/HPS Eastern Regional Student Conference, Gainesville, FA, 1996.
- Health Physics Society Graduate Student Fellowship, 1994-1995.
- ANΣ Nuclear Engineering Honor Society, 1994–1997.
- Health Physics Society Summer School Scholarship, 1994.
- Health Physics Society, Atlanta Chapter, Travel Grant, 1994.
- Ph.D Qualifier Award (highest test score), School of M.E., Georgia Tech, 1993.
- ΒΓΦ National Honor Society Member, 1993.

## Organizations

- American Nuclear Society, Secretary of Math and Computational Division, 2000-2001.
- Society for Industrial and Applied Mathematics
- American Association of Physicists in Medicine

## Refereed Publications

1. J.D. Densmore, T.M. Evans, and M.W. Buksas. A Hybrid Transport-Diffusion Algorithm for Monte Carlo Radiation-Transport Simulations on Adaptive-Refinement Meshes in  $XY$  Geometry. *Nuc. Sci. Eng.*, **159**, 1–22, 2008.
2. Ryan G. McClarren, Thomas M. Evans, Robert B. Lowrie, and Jefferey D. Densmore. Semi-Implicit Time Integration for  $P_N$  Thermal Radiative Transfer. *J. Comp. Phys.*, submitted 2007.
3. T.M. Evans and J.D. Densmore. Methods for Coupling Radiation, Ion, and Electron Energies In Grey Implicit Monte Carlo. *J. Comp. Phys.*, **225**, 1695–1720, 2007.
4. J.D. Densmore, T.J. Urbatsch, T.M. Evans, and M.W. Buksas. A Hybrid Transport-Diffusion Method for Monte Carlo Radiative-Transfer Simulations. *J. Comp. Phys.*, **222**, 495–503, 2007.
5. Jeffery D. Densmore, Thomas M. Evans, and Michael W. Buksas. A Monte Carlo-Diffusion Method for Radiation Transport on Adaptive Mesh Refinement-Type Meshes. *Mathematics and Computations and Supercomputing in Nuclear Applications*, Monterey, CA, ISBN: 0-89448-059-6, American Nuclear Society, LaGrange Park, IL, 2007.

6. T.M. Evans and J.D. Densmore. Implicit Monte Carlo Methods for Coupled Three-Temperature Transport. *Mathematics and Computations and Supercomputing in Nuclear Applications*, Monterey, CA, ISBN: 0-89448-059-6, American Nuclear Society, LaGrange Park, IL, 2007.
7. T.M. Evans and J.D. Densmore. Implicit Monte Carlo Methods for Three-Temperature Transport, invited. *Trans. Am. Nucl. Soc.*, **95**, 2006.
8. Jeffery D. Densmore, Thomas M. Evans, and Michael W. Buksas. Discrete Diffusion Monte Carlo for XY Adaptive Mesh Refinement-Style Meshes. *Trans. Am. Nucl. Soc.*, **95**, 2006.
9. J.M. Morel, B.T. Adams, T. Noh, J.M. McGhee, T.M. Evans, and T.J. Urbatsch. Spatial Discretizations for Self-Adjoint Forms of the Radiative Transfer Equations. *J. Comp. Phys.*, **214**, 12–40, 2006.
10. T.A. Brunner, T.J. Urbatsch, T.M. Evans, and N.A. Gentile. Comparison of Four Parallel Algorithms for Domain Decomposed Implicit Monte Carlo. *J. Comp. Phys.*, **212**, 527–539, 2006.
11. T.A. Brunner, T.J. Urbatsch, T.M. Evans, and N.A. Gentile. Comparison of Four Parallel Algorithms for Domain Decomposed Implicit Monte Carlo. *Mathematics and Computation, Supercomputing, Reactor Physics, and Nuclear and Biological Applications*, Avignon, France, American Nuclear Society, LaGrange Park, IL, 2005.
12. J.D. Densmore, T.J. Urbatsch, T.M. Evans, and M.W. Buksas. Discrete Diffusion Monte Carlo for Grey Implicit Monte Carlo Calculations. *Mathematics and Computation, Supercomputing, Reactor Physics, and Nuclear and Biological Applications*, Avignon, France, American Nuclear Society, LaGrange Park, IL, 2005.
13. P.A. Milne, A.L. Hungerford, C.L. Fryer, T.M. Evans, and T.J. Urbatsch. Unified One-Dimensional Simulations of Gamma-Ray Line Emission from Type 1a Supernovae. *ApJ.*, **613**, 1101–1119, 2004.
14. T.M. Evans, T.J. Urbatsch, H.Lichtenstein, and J.E. Morel. A residual Monte Carlo Method for Discrete Thermal Radiative Diffusion. *J. Comp. Phys.*, **189**(2), 539–556, 2003.
15. T.M. Evans, T.J. Urbatsch, H. Lichtenstein, and J.E. Morel. A residual Monte Carlo Method for thermal radiation diffusion. *Nuclear Mathematical and Computational Sciences: A Century in Review; A Century Anew*, Gatlinburg, Tennessee, American Nuclear Society, LaGrange Park, IL, 2003.
16. Todd J. Urbatsch, Thomas M. Evans, and H. Grady Hughes. Sampling a Position Uniformly in a Trilinear Hexahedral Volume. *Trans. Am. Nucl. Soc.*, **84**, 2001.
17. T.M. Evans, T.J. Urbatsch, and H. Lichtenstein. 1-D Equilibrium Discrete Diffusion Monte Carlo. *Proceedings of the International Conference on Advanced Monte Carlo for Radiation Physics, Particle Transport Simulation, and Applications*. Lisbon, Portugal, October 2000.
18. T.M. Evans and T.A. Wareing. The solution of well-logging problems using hybrid transport methods on unstructured meshes (invited). In J.M. Aragonés et al., editors, *Mathematics and Computation, Reactor Physics and Environmental Analysis in Nuclear Applications*, volume 2. Senda Editorial, S.A., Spain, 1999.
19. M.G. Gray, R.M. Roberts and T.M. Evans. Shadow-object interface between F 95 and C++. *Computing in Science and Engineering*, **1**(2), 1999.
20. T.M. Evans and C-K. C. Wang. The measurement of distributions of small-scale energy depositions from low-Linear Energy Transfer particles using the Superheated Drop Detector. *Radiation Research*, **151**, 1999.
21. T.M. Evans and J.S. Hendricks. An enhanced geometry-independent mesh weight window generator for MCNP. In *Technologies for the New Century*, volume 1. American Nuclear Society, 1998.

22. N.E. Hertel, T.M. Evans, H.-H. Hsu, L. Waters, R.E. Prael, and W.V. Gregory. Benchmarking the LAHET elastic scattering model. In *Proceedings of the Topical Meeting on Nuclear Applications of Accelerator Technology*. American Nuclear Society, 1997.
23. N.E. Hertel and T.M. Evans. *Benchmarking the LAHET Elastic Scattering Model for APT Design Applications*. ERDA Task Order 96-081, 1997.
24. T.M. Evans and C-K. C. Wang. A SLDD based nanodosimeter for electrons and photons. In D.T. Goodhead et al., editors, *Microdosimetry: An Interdisciplinary Approach*. Royal Society of Chemistry, London, 1997.
25. J.E. McKisson, P.S. Haskins, D.P. Henderson, K.C. Neelands, C-K. C. Wang and T.M. Evans. 3-D imaging of complex source fields with a Compton Camera imager. *IEEE Transactions on Nuclear Science*, **44**(3), pt. 1, June 1997.
26. J.E. McKisson, P.S. Haskins, D.P. Henderson, K.C. Neelands, C-K. C. Wang, T.M. Evans, and A. Del Guerra. 3-D imaging of complex source fields with a Compton Camera imager. *1996 IEEE Nuclear Science Symposium. Conference Record*, **2**, 825-829, 1996.
27. N.E. Hertel, T.M. Evans, J.A. Mulholland, H.M. Coward, and D.A. Burge. Radiological assessment of a mixed-waste incinerator. *Trans. Am. Nucl. Soc.*, **73**, 1996.
28. C-K. C. Wang, M. Sutton, T.M. Evans and B.H. Laster. A microdosimetric study of  $^{10}\text{B}(n,\alpha)^7\text{Li}$  and  $^{157}\text{Gd}(n,\gamma)$  reactions for neutron capture therapy. *Proceedings of the 6th International Conference of Radiopharmaceutical Dosimetry*, 1996.
29. W.M. Stacey, E.W. Thomas, J. Mandrekas, T.M. Evans, and R. Rubilar. Neutral atom transport. *Contr. Plasma Phys.*, **36**(2-3), 1996.
30. W.M. Stacey, E.W. Thomas, and T.M. Evans. Neutral particle cross section sensitivity studies in the divertor region. *Bull. Am. Phys. Soc.*, **40**, 1995.
31. W.M. Stacey, E.W. Thomas, and T.M. Evans. Data and extended diffusion theories for neutral particle transport in Tokamak divertors. *Phys. Plasmas*, **2**(10), 1995.
32. N.E. Hertel, T.M. Evans, H.M. Coward, J.A. Mulholland, M.G. Robinson, S. Pederson, S. Ur-Rehman, and C. Baker. *Health Risk Assessment for the Savannah River Site Consolidated Incineration Facility, Part 1: Radionuclide Emissions*. GT/ERDA-94041-005, 1995.
33. N.E. Hertel, T.M. Evans, J.A. Mulholland, M.G. Robinson, S. Pederson, S. Ur-Rehman, and C. Baker. *Health Risk Assessment for the Savannah River Site Consolidated Incineration Facility, Part 2: Chemical Emissions*. GT/ERDA-94041-007, 1995.
34. N.E. Hertel, T.M. Evans, H.M. Coward, J.A. Mulholland, M.G. Robinson, and D.A. Burge. Health risk assessment for the Savannah River Site Consolidated Incineration Facility. *Incineration Conference*, Seattle, WA, 1995.
35. N.E. Hertel, T.M. Evans, and D.A. Burge. *CIF Health Risk Assessment Work Plan*. GT/ERDA-94041-006, 1995.
36. T.M. Evans and R.D. Ice. BNCT Rodent Phantom Dosimetry at GTRR. *Health Physics*, **66**(6), 1994.

**LANL  
Publications**

1. Thomas M. Evans. *Modified Equation Analysis for 3T IMC Methods*, Research Note CCS-4:06-24(U), Los Alamos National Lab., June, 2006.
2. Thomas Evans. *Spatially-Independent, Nonlinear Benchmark Problems for Radiation, Electron, and Ion Temporal Evolution*, Research Note CCS-4:06-18(U), Los Alamos National Lab., May, 2006.

3. Thomas Evans and Jeffery Densmore. *Methods for Coupling Radiation, Ion, and Electron Temperatures in Implicit Monte Carlo*, Research Note CCS-4:06-09(U), Los Alamos National Lab., April, 2006.
4. Thomas Evans and Aimee Hungerford. *Diagnostics Components for the Jayenne Project Application Codes*, Research Note CCS-4:06-05(U), Los Alamos National Lab., February, 2006.
5. Jeffery Densmore and Thomas Evans. *Discrete Diffusion Monte Carlo for XY AMR Meshes*, Research Note CCS-4:06-04(U), Los Alamos National Lab., February 2006.
6. Todd J. Urbatsch and Thomas M. Evans. *Milagro Version 2, An Implicit Monte Carlo Code for Thermal Radiative Transfer: Capabilities, Development, and Usage*, LA Report LA-14195-MS, Los Alamos National Lab., February, 2006.
7. Thomas Evans. *An Interface for Domain Decomposition in Wedgehog*, Research Note CCS-4:05-74(U), Los Alamos National Lab., December 2005.
8. Thomas Evans, Jeffery Densmore, Michael Buksas, Aimee Hungerford, Scott Mosher, Paul Henning, and Todd Urbatsch. *Release of ClubIMC-3.0.0*, Research Note CCS-4:05-72(U), Los Alamos National Lab., November 2005.
9. Thomas Evans, Todd Urbatsch, Mike Buksas, Jeff Densmore, Scott Mosher, and Aimee Hungerford. *Release of Wedgehog-5.0.0*, Research Note CCS-4:05-73(U), Los Alamos National Lab., November 2005.
10. Jeffery D. Densmore, Thomas M. Evans, and Aimee L. Hungerford. *A Semi-Implicit Treatment of Compton Scattering in Implicit Monte Carlo Simulations*, Research Note CCS-4:05-57(U), Los Alamos National Lab., October 2005.
11. Thomas M. Evans, Jeffery D. Densmore, and Todd J. Urbatsch. *Equilibrium-Diffusion Material Motion for Wedgehog*, CCS-4:05-05(U), Los Alamos National Lab., January 2005.
12. Jeffery Densmore, Michael Buksas, Thomas Evans, and Todd Urbatsch. *Release of ClubIMC-2.0.0*, Research Note CCS-4:05-07(U), Los Alamos National Lab., January 2005.
13. Todd Urbatsch and Tom Evans. *IMC Verification Problems*, Technical Memo. CCS-4:05-02S, Los Alamos National Lab., January 2005.
14. Tom Evans, Todd Urbatsch, Mike Buksas, Jeff Densmore, and Jon Dahl. *A Re-Factored Interface for Implicit Monte Carlo and an Eulerian Hydro Code*, Research Note CCS-4:05-06S, Los Alamos National Lab., March 2005.
15. Jeffery Densmore, Todd J. Urbatsch, Thomas M. Evans, and Michael W. Buksas. *Discrete Diffusion Monte Carlo for Grey Implicit Monte Carlo Simulations*, Research Note CCS-4:04-77(U), Los Alamos National Lab., December 2004.
16. Tom Evans, Mike Buksas, and Kelly Thompson. *Release of Draco-5.0.0*, Research Note CCS-4:04-36(U), Los Alamos National Lab., April 2004.
17. Robert Lowrie, Thomas M. Evans, et al. *Code Design for the Advection-Diffusion-Reaction (ADR) Project*, Research Note CCS-4:04-31(U), Rev. 2, Los Alamos National Lab., May 2004.
18. Thomas M. Evans, Mike Buksas, Jeff Densmore, and Todd Urbatsch. *Release of ClubIMC-1.0.0*, Research Note CCS-4:04-37(U), Los Alamos National Lab., May 2004.
19. Thomas M. Evans, Todd J. Urbatsch, Mike W. Buksas, and Jeff Densmore. *Release of Wedgehog-4.0.0*, Research Note CCS-4:04-42(U), Los Alamos National Lab., May 2004.
20. Jeffery Densmore, Thomas Evans, and Todd Urbatsch. *Spherical Geometry Interface for Wedgehog*, Tech. Memo. CCS-4:04-15(U), Los Alamos National Lab., March, 2004.

21. Todd J. Urbatsch, Thomas M. Evans, and Michael W. Buksas. *Integral Tests for the Tally Sphere Capability in Milagro*, Research Note CCS-4:04-03(U), Los Alamos National Lab., Jan. 9, 2004.
22. Thomas Evans, Todd Urbatsch, and Mike Buksas. *Spherical Surface Tally Interface for Wedgehog*, Research Note CCS-4:04-02(U), Los Alamos National Lab., March 12, 2004.
23. J.D. Densmore, T.J. Urbatsch, and T.M. Evans. *Implementation of a Sphyramid Mesh into an Implicit Monte Carlo Simulation*, Research Note CCS-4:03-69(U), Los Alamos National Lab., 2003.
24. Thomas Evans, Rob Lowrie, et al. *Requirements Specification for the ADR Sub-project*, Research Note CCS-4:03-65(U), Los Alamos National Lab., 2003.
25. Robert B. Lowrie, Thomas M. Evans, et al. *Numerical Methods for the Advection-Diffusion-Reaction (ADR) Project*, Research Note CCS-4:03-62(U), Los Alamos National Lab., 2003.
26. Robert B. Lowrie, Thomas M. Evans, and Gary Dilts. *Vision and Scope for the Advection-Diffusion-Reaction (ADR) Project*, Research Note CCS-4:03-60(U), Los Alamos National Lab., 2003.
27. Thomas M. Evans and Rob B. Lowrie. *Review Process for the Marmot Project*, Research Note CCS-4:03-59(U), Los Alamos National Lab., 2003.
28. J.D. Densmore, T.J. Urbatsch, and T.M. Evans. *A comparison of methods for representing an R mesh with an XYZ pyramid mesh*, Research Note CCS-4:03-56(U), Los Alamos National Lab., 2003.
29. Tom Evans, Todd Urbatsch, et al. *Software Process for the Marmot and Jayenne Projects*, Research Note CCS-4:03-55(U), Los Alamos National Lab., 2003.
30. Thomas M. Evans and Rob Lowrie. *Marmot Training Simulation*, Research Note CCS-4:03-54(U), Los Alamos National Lab., 2003.
31. R. Lowrie, T. Evans, et al. *C++ Coding Standards for the Marmot Project*, Research Note CCS-4:03-52(U), Los Alamos National Lab., 2003.
32. T.M. Evans, T.J. Urbatsch, C.W. Nakhleh. *Satisfaction of Hybrid IMC/Diffusion LANL Level 2 Milestone*, Tech. Memo. CCS-4:03-44(U), Los Alamos National Lab., 2003.
33. J.D. Densmore, T.M. Evans, and T.J. Urbatsch. *Non-Equilibrium Discrete Diffusion Monte Carlo*, Tech. Memo. CCS-4:03-43(U), Los Alamos National Lab., 2003.
34. T.M. Evans, T.J. Urbatsch, and M.W. Buksas. *Release of Wedgehog-3.0.0*. Tech. Memo. CCS-4:03-42(U), Los Alamos National Lab., 2003.
35. Thomas M. Evans and Robert B. Lowrie. *Vision and Scope Statements for the Marmot Project*, Research Note CCS-4:03-37(U), Los Alamos National Lab., 2003.
36. T.M. Evans. *Release of Draco-4.0.0*. Tech. Memo. CCS-4:03-34(U), Los Alamos National Lab., 2003.
37. T.J. Urbatsch and T.M. Evans. *Jayenne IMC Analysis: Minimum Random Walk Sphere Radius*, Tech. Memo. CCS-4:03-33(U), Los Alamos National Lab., Sept. 3, 2003.
38. T.M. Evans and T.J. Urbatsch. *Migration of Crestone/Wedgehog to Q machine(U)*. Tech. Memo. CCS-4:03-29(U), Los Alamos National Lab., 2003.
39. Todd J. Urbatsch and Thomas M. Evans. *Vision and Scope Statements for the Hybrid Diffusion/IMC Project for an ASC FY03 Level 2 Milestone*. Tech. Memo. CCS-4:03-28(U), Los Alamos National Lab., July 24, 2003.
40. T.M. Evans. *Release of Draco-3.2.0*. Tech. Memo. CCS-4:03-24(U), Los Alamos National Lab., 2003.



41. T.M. Evans. *Release of Draco-3.0.0*. Tech. Memo. CCS-4:03-18(U), Los Alamos National Lab., 2003.
42. Todd Urbatsch, Tom Evans, Henry Lichtenstein, and Jim Morel. *Linear Error Analysis for the Residual Equilibrium Discrete Diffusion Monte Carlo (REqDDMC) Method*, LA-UR-03-2300, Tech. Memo. CCS-4:03-08(U), Los Alamos National Lab., April 8, 2003.
43. Todd J. Urbatsch, Thomas M. Evans, and Michael W. Buksas. *Sexy Curves and Lots of Cake: A New Multigroup Capability in the MILAGRO Implicit Monte Carlo Code (U)*. *Proceedings of the Nuclear Explosives Code Development Conference*, October, 2002.
44. T. Evans and T. Urbatsch. *Post-Mortem Review of the Jayenne Code Project*. LA-UR-02-2445, Tech. Memo. CCS-4:02-12(U), Los Alamos National Lab., 2002.
45. Todd J. Urbatsch and Thomas M. Evans. *Users' Guide: Milagro Version 2, An Implicit Monte Carlo Code for Thermal Radiative Transfer*. Los Alamos Tech. Report, LA-UR-03-4580, Los Alamos National Lab, December 19, 2001.
46. T.M. Evans and T.J. Urbatsch. *The Wedgehog Implicit Monte Carlo Package*. Submitted to LANL report office, July 2001.
47. T.J. Urbatsch and T.M. Evans. *Analytic Temperature Updates in Milagro for  $T^3$  Specific Heats*. LA-UR-01-1427, Tech. Memo. CCS-4:01-12(U), Los Alamos National Lab., 2001.
48. T.M. Evans and T.J. Urbatsch. *IMC Interface Requirements for an RZ Hydrodynamics Code (U)*. Tech. Memo. CCS-4:01-01S, Los Alamos National Lab., 2001.
49. T.J. Urbatsch and T.M. Evans. *Researching Improved Low-Weight IMC Particle Termination*. Tech. Memo. CCS-4:01-15(U), Los Alamos National Lab., 2001.
50. M. Buksas, T.J. Urbatsch, and T.M. Evans. *Release 1.0.0 of UncleMcFlux, the Uncollided Monte Carlo Flux Package(U)*. Tech. Memo. CCS-4:00-17, Los Alamos National Lab., 2001.
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