Debashis Basu

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Adjunct Faculty, Lecturer II, Department of Mechanical Engineering, University of Texas at San Antonio (UTSA)

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Education

2006	Ph.D., Aerospace Engineering and Engineering Mechanics, University of Cincinnati, Cincinnati, Ohio Dissertation: Multiscale modeling for high Reynolds number separated turbulent flow Simulations
2000	M.S., Mechanical Engineering, Indian Institute of Technology, Kanpur, India Dissertation: Development of a three-dimensional Navier-Stokes solver for turbomachinery applications with transitional models
1997	BS., Mechanical Engineering, Jadavpur University, Calcutta, India

Professional Registration

Registered Professional Engineer, State of Texas
P.E. License Number 107138

Chronology of Professional Experience

Oct. 2011 — Present	Senior Research Engineer (Mechanical Engineering), Southwest Research Institute, Dec. 2016 - Present : Fire Technology Department, Chemistry and Chemical Engineering Division Oct. 2011-Dec. 2016 : Center for Nuclear Waste Regulatory Analyses (CNWRA)
May 2006 — Oct. 2011	Research Engineer(Mechanical Engineering), Southwest Research Institute, Center for Nuclear Waste Regulatory Analyses (CNWRA)

Sept. 2000 — May 2006	Graduate Teaching and Research Assistant, University of Cincinnati
Jan. 2000 — Aug. 2000	Research Scientist, Aeronautical Development Establishment, Bangalore, India
Jan. 1998 — Dec. 2000	Graduate Research and Teaching Assistant, Indian Institute of Technology, Kanpur, India

Professional Experience

Southwest Research Institute

- Computational Modeling of fire propagation and fire suppression in engineering systems.
- Computational Fluid Dynamics Modeling of High Energy Arcing Faults (HEAF) related fire. Developed detail CFD modeling of HEAF fires and assess the effect of fire on structural material.
- Inlet Nozzle Guide Vane Design and Volute Design for the radial inflow turbine in a supercritical CO_2 power cycle.
- Thermal Analysis of Horizontal Storage Casks for Extended Storage Applications: Developed high fidelity computational fluid dynamics model for ventilated horizontal storage systems intended for long term storage of nuclear fuel. Applied latest standard for validation, verification and uncertainty quantification to enhance confidence in modeling results.
- Analysis and technical review of license amendment requests for Nuclear Power Plants transitioning to the National Fire protection Association (NFPA) Standard, (NFPA 805)
- Development of an Integrated Numerical Framework for Tsunami Hazard Assessment at Coastal Installations: Performed numerical simulation of wave propagation for near and far field region using shallow water and depth averaged wave equations and subsequently determine the fragility of costal installations. The intended application was to make probabilistic hazard assessment of near shore oil and gas exploration platforms.
- Development of numerical and analytical tools for analyzing a range of diverse problems in engineered and natural systems that involved, various one- and two-phase problems involving fluid dynamics and heat transfer, geophysical fluid dynamics.
- Development of a smoothed particle hydrodynamics (SPH) code used to compute surface wave height and run up from a landslide generated tsunami and debris flow.
- Enhanced Capability for Conducting Coupled Fluid Flow and Rock Deformation Analyze in Reservoir Simulations: Application to Hydraulic Fracturing: Performed detailed computational simulation of proppant transport used during hydraulic fracturing and assess the effectiveness of the fracking process on proppant properties for application in shale gas exploration and extraction.
- Drying adequacy for extended storage and transportation of spent nuclear fuel: Developed computational and analytical heat and mass transfer model of trapped water accumulated due to inadequate drying to within a storage canister for possibility of stress corrosion cracking.
- Numerical simulation of flow and erosion in flow over an ogee spillway
- Numerical Simulation of Multiphase-Flow-Enhanced Erosion-Corrosion Problems: Performed discrete particle simulation to assess erosion damage and developed a semi

analytical method for calculating corrosion accounting for chemistry in pipelines for oil and gas industry.
- Development of advanced turbulence models for simulating flow through rod bundles and simulation of lower plenum flows that are relevant to high-temperature gas-cooled reactors.
- Numerical simulation of flow and thermal mixing in a T-junction.
- Numerical simulations of subsurface magma flow and cooling of lava lobes on surface using multiphase CFD approach for simulating the magma-waste package interaction at the underground spent nuclear fuel disposal facility at Yucca Mountain, NV.

Apart from the technical work, other related project activities at SwRI included
- Proposal preparation.
- Periodic progress reporting to technical monitors of the funding agency.
- Presentation for monitors and peers.
- Foster collaboration in a multidisciplinary research environment.
- Project management activities such as tracking finances, schedule of deliverables.
- Final report preparation and presentation.

University of Cincinnati

- Turbulence Model development: Developed novel turbulence modeling techniques to simulate high Reynolds number separated unsteady flows. Commonly referred to as Hybrid RANS-LES, these techniques are very important for realistic simulations of high Reynolds number separated flows in engineering applications. Most of the work focussed on Coherent Structure Identification And Flow Control For High Speed Flows in Gas Turbine engines, weapon bay and separated flow in LP turbines.
- Cavity Acoustics Analysis with & without Control: Performed aeroacoustic study of unsteady high speed flows over cavities to capture the self sustaining oscillatory motion. Developed numerical models to study the unsteady fluidic actuation using Hartman-Sprenger resonance device and subsequently use the signal to perform noise attenuation.
- Simulation of Icing in Turbomachinery: Developed detailed model of discrete droplet transport, deposition and icing in rotating aeroengine components that involved code development, validation and analysis of multiphase gas-droplet flows in turbomachinery.

Indian Institute of Technology, Kanpur

- Development of a 3-D Navier-Stokes Solver for Turbomachinery Flow Simulations.
- Numerically simulate film and internal cooling of turbine stator blades.

Teaching Experience

University of Texas at San Antonio

- Lecturer II in the Departmental Engineering: Teaching ME 4183 “Compressible Flow and Propulsion Systems” in Spring 2019.
- Lecturer II in the Departmental Engineering: Teaching ME 4623 “Internal Combustion Engines” in Fall 2017 and Fall 2018.
- Lecturer II in the Departmental Engineering: Teaching ME 2173 “Numerical Methods for Engineers” in Fall 2016, Spring 2017, Summer 2017, Spring 2018 and Summer 2019.
- Guest Lecturer ME 5653 “Computational Fluid Dynamics” [Winter 2010, Winter 2011]

University of Cincinnati

- Instructor: AEEM 360 “Numerical Methods for Engineering Design” (UC) [Summer 2005]
- Instructor: “Co-Op Learning in Mechanics-I” [ENFD-114] (UC) [Spring 2003, 2004, 2005]
- Teaching Assistant for Advanced Propulsion Systems (Graduate Level Course, 20-AEEM-930).
- Teaching Assistant for Mechanics I, II and III (UC)
- Graduate Teaching Assistant 20AEEM930 “Advanced Propulsion Systems” [Fall 2002, 2003, 2004, 2005]
- Participated in “Preparing Future Faculty (PFF)” and “Advanced Teaching Techniques for Engineers” program at University of Cincinnati.

Indian Institute of Technology, Kanpur

Teaching Assistant, ME471 Fluid Dynamics Laboratory [Winter 1998]

TECHNICAL SKILLS & RELATED SOFTWARES

Commercial CFD Modeling	ANSYS-Fluent, ANSYS-CFX, FLOW-3D, COMSOL
Government Codes	FDL3DI, US-WIND, OVERFLOW and ADPAC
Fire Dynamic Models	FDS and CFAST (Developed by NIST)
Tsunami Modeling Analysis	FUNWAVE-TVD
Solid Modeling and CAD	SOLIDWORKS, ANSYS-Design Modeler
Mesh Generation	GAMBIT, ANSYS-TGRID, ANSYS-Meshing, Gridgen and
Post Processing Tools	ANSYS-CFD Post, Tecplot
Icing Analysis	LEWICE
Analytical Tools	MATLAB, and Mathematica
Programming Languages	C , FORTRAN, PYTHON
Parallel Programming Tools	MPICH, and OpenMPI
Smoothed Particle Hydrodynamics	SPHYSICS

Awards and Honors

- Best Poster Award from U.S. Society of Dams for the poster titled “Development of Computational Methodology to Assess Erosion Damage in Dam Spillways,” at 2011 Annual USSD Conference.
- Awarded the Rindsberg Fellowship from College of Engineering, University of Cincinnati, January 1, 2005–December 31, 2005.
- Received the 2004 Kalpana Chawla Award (funded by the Ford Motor Company) in recognition of high scholastic achievements in the field of aerospace engineering.
- R.T. Davis Award for demonstrated outstanding aptitude and scholarship in the field of computational mechanics, Department of Aerospace Engineering, University of Cincinnati, 2003.
- University Research Council (URC) Summer Fellowship for Summer 2002, University of Cincinnati.
- University of Cincinnati Graduate Assistantship (fall 2000–Spring 2006).
- Recipient of Ohio Supercomputer Center (OSC) grant of 300,000 units on OSC Titanium Cluster for dissertation research.
- Obtained MHRD Scholarship for 3 years while pursuing Masters degree at IIT, Kanpur, India.

RELEVANT COURSEWORK

Advanced compressible flows, Advanced propulsion system, Computational fluid dynamics, CFD of turbomachinery, Viscous flow theory, Heat transfer in propulsion systems, Numerical Methods, Advanced thermodynamics

Selected Research Support (representative sample)

- *Numerical Simulation of Deployment Techniques for vapor/fire suppression media (Trelleborg beads and ECC balls) for the Trans Alaska Pipeline System (TAPS) crude oil tanks,* 2017, Alyeksa Pipeline Service Company, $60K, Co-PI.
- *Development of Computational Fluid Dynamics Framework for characterization of high energy arcing faults (HEAF) in nuclear power plants*, 2016, Advisory Committee of Research, Southwest Research Institute, $50K, PI.
- *Numerical Simulation of HEAF using ANSYS-FLUENT fire models*, 2016-2017, Leidos Inc. $75K, Project Technical Lead.
- *Development of an Integrated Numerical Framework for Tsunami-Hazard Assessment at Nuclear Installations*. Advisory Committee of Research, Southwest Research Institute, 2011-2013. $171K, PI
- *Development of computational models for effective simulations of active flow control strategies related to aerodynamic drag reduction in automobiles*, 2016-2017, Advisory Committee of Research, Southwest Research Institute, $245K, PI.
- *Analysis and technical review of license amendment requests for Nuclear Power Plants transitioning to the National Fire protection Association (NFPA) Standard, (NFPA 805 : Review of Fire Modeling Performed by Plants Transitioning to NFPA 805 and Related Activities)*, 2012-2017, U.S. Nuclear Regulatory Commission

Publications

Refereed Journal Publications

Rabiei, A., Karimpour, K., **Basu, D.,** and Janssens, M., "***Steel-Steel Composite Metal Foam in Simulated Pool Fire Testing***", International Journal of Thermal Sciences, vol. 153, July 2020.

Basu, D., Das, K., Green, S., Janetzke, R., and Stamatakos, J., "***Numerical Simulation of Surface Waves Generated by a Subaerial Landslide at Lituya Bay, Alaska***," ASME Journal of Offshore Mechanics and Arctic Engineering, 2010, Volume 132, Issue 4.

Hamed, A., **Basu, D.,** and Das, K., "***Assessment of Detached Eddy Simulation (DES) Model for High Speed Separated Turbulent Flow Predictions***," Computers and Fluids, 2007, Vol. 36, pp. 924–934.

Sarkar, S., Das, K., and **Basu, D.,** "***Film Cooling on Turbine Guide Vane: A Numerical Analysis with Multigrid Technique***" Journal of Power and Energy, Proc. Part A, IMechE, United Kingdom, 2001, Vol. 215 (A1), pp. 39–53.

Sarkar, S., Das, K., and **Basu, D.,** "***Two-Dimensional Navier-Stokes Analysis of an Internally Cooled Turbine Blade***," Journal of Power and Energy, Proc. Part A, IMechE, United Kingdom, 2000, Vol. 214 (A6), pp. 585–598.

Topical Reports (Publically Available)

Basu, D., Adams, N., Stamatakos, J., Sparks, S., and Woods, A. "***Review of Two Electric Power Research Institute Technical Reports on the Potential Igneous Processes Relevant to the Yucca Mountain Repository***", Technical Report, U.S. NRC Contract NRC-02-02-012, CNWRA, San Antonio, TX, January 2007.

Basu, D., Das, K., and Adams, N., "***Simulations of magma-waste package interactions using computational fluid dynamics***", Technical Report, U.S. NRC Contract NRC-02-07-006, CNWRA, San Antonio, TX, May 2008.

Das, K., **Basu, D**., and Axler, K., "***Modeling of TS125 Transportation Cask and W21 Canister for Application in Transportation, Aging, and Disposal Canister Thermal Designs***", Technical Report, U.S. NRC Contract NRC-02-07-006, CNWRA, San Antonio, TX, August 2008.

Das, K., **Basu, D**., and Axler, K., "***Validation of Modeling Approach to Evaluate Transportation, Aging, and Disposal Canister Thermal Designs***", Technical Report, U.S. NRC Contract NRC-02-07-006, CNWRA, San Antonio, TX, January 2008.

Axler, K., **Basu, D**., Das, K., Mintz, T., et al., "***Review of Coating Destruction Reports Related to Debris Source Term for Coatings Subjected to an Adverse Environment From a Pressurized Water Reactor Loss-Of-Coolant Accident***", Technical Report, CNWRA, San Antonio, TX, August 2007.

Basu, D., Das, K. and Self, S., "***Review of Numerical Analyses for Magma Dynamics at the Proposed Yucca Mountain Repository***," Technical Report, U.S. NRC Contract NRC-02-07-006, CNWRA, San Antonio, Texas, July 2011.

Basu, D., Das, K. and Self, S., "***Numerical Simulations and Analysis of Lava Flow Cooling***," Technical Report, U.S. NRC Contract NRC-02-07-006, CNWRA, San Antonio, Texas, June 2011.

Basu, D., Das, K. and Self, S., "***Numerical Analysis of Lava Cooling with different geometric configurations***," Technical Report, U.S. NRC Contract NRC-02-07-006, CNWRA, San Antonio, Texas, August 2012.

Pensado, O, Tipton, E, Mohanty, S., Wilt T, Brient, R., Chell G., Adams G., Das, K, and **Basu, D**., "***Assessment of Capabilities of Extremely Low Probability of Rupture (xLPR) Software—GoldSim and SIAM Version 1.0***," Technical Report, NRC–04–10–144, CNWRA, San Antonio, Texas, May 2011.

Das, K., **Basu, D**., and Pensado, O., "***Steady State Thermal Analysis of a Rectangular Slab with Surface Heat Flux***," Prepared for Universidad Autónoma de Santo Domingo, CNWRA, San Antonio, Texas, May 2011.

Das K, Basu D, and Walter G "***Thermal Analysis of Horizontal Storage Casks for Extended Storage Applications***," NUREG/CR–7191, NRC Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission December 2014.

Conference Publications

Shah, B., and **Basu, D.,** ***"Numerical Analysis of Steady Blowing Based Active Flow Control for Flow over Ahmed Body",*** AJKFLUIDS2019-5239, Proceedings of the ASME-JSME-KSME 2019 Joint Fluids Engineering Conference, July 28th-August 1st, San Francisco, CA.

Rabiei, A., Karimpour, K., Janssens, M., and **Basu, D.,** ***"Simulated Pool Fire Testing and Modeling of a Composite Metal Foam"***, Proceedings of Interflam 219, 15th International Fire Science and Engineering Conference, July 1-3, 2019, London, UK.

Dasgupta, B., Janssens, M., and **Basu, D., "*Development of a simulation approach for fire and structure interaction of concrete highway bridges",*** Workshop on Advancements in Evaluating the fire resistance of structures, ASTM SYMPOSIUM on Fire Standards, December 6-7, 2018, Washington DC.

Basu, D. and Das, K., "***Uncertainty Estimation for the Spatial and Temporal Resolution in Detached Eddy Simulations (DES) of transonic flow over and open cavity***", TFEC-IWHT2017-18838, Proceedings of the 2nd Thermal and Fluid Engineering Conference (TFEC2017) and 4th International Workshop on Heat Transfer (IWHT2017), American Society of Fluids and Thermal Engineers (ASTFE), April 2-5, 2017, Las Vegas, NV, USA.

Basu, D., Hasan, M., and Das, K., "***Turbulence Induced Thermal Mixing Effects and Thermal Fatigue analysis in T-Junction Configurations in Pressurized Water Reactors (PWR)***", TFEC-IWHT2017-18839, Proceedings of the 2nd Thermal and Fluid Engineering Conference (TFEC2017) and 4th International Workshop on Heat Transfer (IWHT2017), American Society of Fluids and Thermal Engineers (ASTFE), April 2-5, 2017, Las Vegas, NV, USA.

Das, K., Hasan, M., and **Basu, D.,** "***Spectral Analysis of Unsteady Turbulent Flow and Thermal Mixings in T-Junctions in the Coolant Loop of Pressurized Water Reactors***", TFEC-IWHT2017-18840, Proceedings of the 2nd Thermal and Fluid Engineering Conference (TFEC2017) and 4th International Workshop on Heat Transfer (IWHT2017), American Society of Fluids and Thermal Engineers (ASTFE), April 2-5, 2017, Las Vegas, NV, USA.

Hasan, M., Das, K., and **Basu, D.,** "***Numerical Simulation of Flow and Turbulent Mixing in a T-Junction using LES and WALE models***", Extended Abstract 14571, Proceedings of the American Nuclear Society (ANS) Summer Annual Meeting, June 7-11, 2015, San Antonio, TX, USA.

Hasan, M., **Basu, D.,** and Das, K., "***Analysis of Turbulence Induced Thermal Mixing Effects on T-Junction Fluid-Structure Degradation***", IMECE2015-51655, Proceedings of IMECE2015ASME 2015 International Mechanical Engineering Congress & Exposition November 13–19, 2015, Houston, Texas, USA.

Das, K., **Basu, D.,** He, X., Stothoff, S., Supak, K., and Owston, R., "***Analysis Of Two-Phase Stratified Flow And Liquid Hold Up At Dead Ends Of T-Sectioned Natural Gas Pipelines***", IMECE2015-50049, Proceedings of IMECE 2015, ASME 2015 International Mechanical Engineering Congress & Exposition November 13–19, 2015, Houston, Texas, USA.

Basu, D., Das, K., Smart, K., and Ofoegbu, G., "***Comparison Of Eulerian-Granular And Discrete Element Models For Simulation Of Proppant Flows In Fractured Reservoirs***", IMECE2015-50050, Proceedings of IMECE 2015, ASME 2015 International Mechanical Engineering Congress & Exposition November 13–19, 2015, Houston, Texas, USA.

Das, K., **Basu, D.,** Smart, K., and Ofoegbu, G., "***Numerical Modeling And Parametric Assessment Of Proppant Flow In Fractured Reservoirs***", IMECE2015-50051, Proceedings of IMECE 2015, ASME 2015 International Mechanical Engineering Congress & Exposition November 13–19, 2015, Houston, Texas, USA.

Basu, D., Sewell, R. T., Das, K., Janetzke, R., Dasgupta, B., Stamatakos, J. A., and Waiting, D. J., "***An integrated approach for numerical simulation of earthquake generated tsunamis: Modeling Tsunami Generation, Propagation, Inundation and Fragility Analysis of Coastal Structures***", OTC 25204-MS, Offshore Technology Conference, Houston, May 2014.

Basu, D., Sewell, R. T., Das, K., Janetzke, R., Dasgupta, B., Stamatakos, J. A., and Waiting, D. J., "***Numerical Simulation of Tsunami Run-Up and Inundation for the 2011 Tohuku-Oki Tsunami: A Parametric Analysis for Tsunami Run-up and Wave Height***", OMAE 2014-23138, Proceedings of OMAE 2014, 33rd International Conference on Ocean, Offshore and Arctic Engineering, June 8-13, 2014, San Francisco, California.

Das, K., Ghosh, A., **Basu, D.**, and Miller, L., "***Soil structure and fluid interaction assessment of new modular reactor: Part-1-Numerical Simulation of Fluid Motion due to seismic waves***", SMR2014-3319, Proceedings of the ASME 2014 Small Modular Reactors Symposium, SMR 2014, April 15-17, 2014, Washington DC, USA.

Ghosh, A., Das, K., **Basu, D.**, and Miller, L., "***Soil structure and fluid interaction assessment of new modular reactor: Part-2-Numerical Study of Soil Reactor Structure Interaction***", SMR2014-3318, Proceedings of the ASME 2014 Small Modular Reactors Symposium, SMR 2014, April 15-17, 2014, Washington DC, USA.

Shukla, P, Das, K., Pensado, O., **Basu, D.** and Mintz, T., "***Model for Estimating of Flow-Accelerated Corrosion Rates through Pipe Bend in Nuclear Power Plants***", Corrosion 2013, Orlando, FL, USA, March 17-21, 2013.

Dasgupta, B., Das, K., **Basu, D.**, Green, R., and McGinnis, R., "***Computational Approach to predict rock erosion in unlined spillways***", International Symposium on Dams for a Changing World, Kyoto, Japan, June 5, 2012.

Smart, K.J., Ofoegbu, G. I., Das, K., and **Basu, D**. "***Geomechanical Modeling of Hydraulic Fracture Initiation and Propagation in a Mechanically Stratified Geologic System***", Paper No. ARMA 12-275, Proc. Of the 46th US Rock Mechanics / Geomechanics Symposium held in Chicago, IL, USA, 24-27 June, 2012.

Basu, D., Das, K., and Self, S., "***Two-Dimensional Simulations of Magma Interaction with Subsurface Tunnels***", Proceedings of the International High-Level Radioactive Waste Management Conference, Albuquerque, New Mexico, April 10-14, 2011.

Basu, D., Das, K., Janetzke, R., and Green, S. T., "***Numerical Simulations of Non-Newtonian Geophysical Flows Using Smoothed Particle Hydrodynamics (SPH) Method: A Rheological Analysis***", Paper No. IMECE2011-62501, Proceedings of ASME 2011 International Mechanical Engineering Congress and Exposition (IMECE 2011), Denver, Colorado, USA, November 11-17, 2011.

Das, K., Fedors, R., Manepally, C., **Basu, D.**, "***Experimental and Numerical Modeling of Natural Convection with Condensation***", Proceedings of the International High-Level Radioactive Waste Management Conference, Albuquerque, New Mexico, April 10-14, 2011.

Das, K., **Basu, D.,** Mintz, T., ***"Comparative Assessment of Turbulence Models for prediction of flow-induced corrosion damages",*** Paper No. PVP2011-57817, Proceedings of ASME 2011 Pressure Vessels & Piping Conference (PVP 2011), Baltimore, Maryland, USA, July 17-21, 2011.

Das, K., Mintz, T., and **Basu, D.,** "***Numerical Evaluation of Corrosion Condition for pressurized water reactor secondary cooling system***", Paper No. PVP2011-57819, Proceedings of ASME 2011 Pressure Vessels & Piping Conference (PVP 2011), Baltimore, Maryland, USA, July 17-21, 2011.

Dasgupta, B., **Basu, D.,** Das, K., and Green, R., "***Development of Computational Methodology to Assess Erosion Damage in Dam Spillways***", U.S. Society of Dams, Annual Meeting and Conference, San Diego, CA, April 11-15, 2011.

Dasgupta, B., Das, K., **Basu, D.**, and Green, R., "***Computational Methodology to predict rock block erosion in plunge pools***", ASDSO (Association of Dam Safety Officials) Dam Safety 2011, Washington, DC, September 25–29, 2011.

Basu, D., S. Green, K. Das, R. Janetzke, and J. Stamatakos. *"**Numerical Simulation of Surface Waves Generated by a Subaerial Landslide at Lituya Bay, Alaska**.", ASME* Journal of Offshore Mechanics and Arctic Engineering, Vol. 132, No. 3, 2010.

Das, K., **Basu, D.**, Solis, J., Zigh, G., "***Computational Fluid Dynamics Modeling Approach to Evaluate VSC-17 Dry Storage Cask Thermal Designs***", In Benchmarking of CFD Codes for Application to Nuclear Reactor Safety" (CFD4NRS-3) Workshop, Washington DC, 14-16 September, 2010.

Donald M. Hooper, Ronald N. McGinnis, Marius Necsoiu, Cynthia L. Dinwiddie, and **Basu, D.**, "***Volcaniclastic Aeolian Deposits at Sunset Crater Volcano, Arizona: Applications for Martian Analogs***," The Second International Planetary Dunes Workshop: Planetary Analogs — Integrating Models, Remote Sensing, and Field *Data* May 18–21, 2010, Alamosa, Colorado.

Basu, D., S. Green, K. Das, R. Janetzke, and J. Stamatakos. "***Navier-Stokes Simulations of Surface Waves Generated by Submarine Landslides: Effect of Slide Geometry and Turbulence***.", Paper No. SPE-121097-PP, 2009 Society of Petroleum Engineering Americas E&P Environmental & Safety Conference, March 23–25, 2009, San Antonio, Texas.

Basu, D., S. Green, K. Das, R. Janetzke, and J. Stamatakos. "***Numerical Simulation of Surface Waves Generated by a Subaerial Landslide at Lituya Bay, Alaska***." OMAE2009-79595, 28th International Conference on Ocean, Offshore and Arctic Engineering, May 31–June 5, 2009, Honolulu, Hawaii.

Das, K., R. Janetzke**, D. Basu,** S. Green, and J. Stamatakos. "***Numerical Simulations of Tsunami Wave Generation by Submarine and Aerial Landslides Using RANS and SPH Models***." OMAE2009-79596, 28th International Conference on Ocean, Offshore and Arctic Engineering, May 31–June 5, 2009, Honolulu, Hawaii.

Das, K., S. Green, **D. Basu,** R. Janetzke, and J. Stamatakos. "***Effect of Slide Deformation and Geometry on Waves Generated by Submarine Landslides: A Numerical Investigation***", OTC 20293-PP, 2009 Offshore Technology Conference, May 4–7, 2009, Houston, Texas.

Basu, D., R. Janetzke, K. Das, S. Green, and J. Stamatakos. "***Smoothed Particle Hydrodynamics (SPH) Simulations of Landslide-Generated Tsunamis***." 2009 Annual Meeting, Seismological Society of America, Seismological Society of America, April 8–10, 2009. Monterey, California.

Basu, D., Das, K., Painter, S., Howard, L., and Green, S., "***Assessment of DES Multiscale Turbulence Models for Prediction of Flow and Heat Transfer in an axial-channel rod configuration***", ICONE16-48515, Proceedings of the 16th International Conference on Nuclear Engineering, 2008, Orlando, Florida.

Das, K., **Basu, D.**, Painter, S., Howard, L., and Green, S., "***Detached Eddy Simulations and Transient RANS simulations of turbulent flow in the lower plenum of a gas-cooled reactor***", ICONE16-48514, Proceedings of the 16th International Conference on Nuclear Engineering, 2008, Orlando, Florida.

Basu, D., K. Das, and S. Painter. "***DES and Transient RANS Computations of Flow through Rod Bundle***." Proceedings of the 2008 American Nuclear Society Annual Meeting, June 12–18, 2008, Anaheim, California.

Das, K., Basu, D., Painter, S., Howard, L., and Green, S., "***Comparative Assessment of Turbulence Models for Unsteady Turbulent Flow Predictions in Single Rod Channel Configuration***", FEDSM-2007-37457, 5th ASME-JSME Fluids Engineering Conference, San Diego, CA, 2007.

Hooper, D., Franklin, N., Adams, N., **Basu, D.**, "***Modeling Potential Tephra Dispersal at Yucca Mountain, Nevada"***, American Geophysical Union (AGU) Meeting, San Francisco, 2006.

Das, K., Hamed, A. & **Basu, D.**, "***Effect of Droplet Ingestion Conditions on Ice Accretion in Turbofan Engines***," ISABE-2007-1350, Proceedings of the 18th International Symposium on Air Breathing Engines (ISABE), Sep. 2-Sep. 7, 2007, Beijing, China.

Basu, D., Hamed, A., & Das, K., "***Assessment of Partially Averaged Navier Stokes (PANS) Model in Transonic Turbulent Separated Flows***", FEDSM-2007-37630, 5th ASME-JSME Fluids Engineering Conference, San Diego, CA, 2007.

Li, Z., Hamed, A., and **Basu, D., "*Numerical Simulation of Sidewall Effects on the Acoustic Field in Transonic Cavity*",** AIAA-2007-1456, 45th AIAA Aerospace Sciences Meeting and Exhibit Reno, NV, January 5-8, 2007.

Basu, D., Hamed, A., & Das, K., "***Multiscale Resolution Requirements for Numerical Predictions of Unsteady High-Speed Cavity Flows and Acoustics",*** ICDFP8–EG–181, Proceedings of the 8th International Congress of Fluid Dynamics and Propulsion, December 14 – 17, 2006, Sharm El-Shiekh, Egypt.

Basu, D., Hamed, A., Das, K., "***Grid Requirements for Multiscale Resolution in Separated Unsteady High Speed Turbulent Flows***", FEDSM06-98570, Proceedings of FEDSM '06, 2006 2nd US-European Fluids Engineering Summer Meeting, Miami, Florida, USA, July 17–21, 2006.

Basu, D., Hamed, A., Das, K., Tomko, K. & Liu, Q., "***Comparative Analysis of Hybrid Turbulence Closure Models in Unsteady Transonic Separated Flow Simulations***," AIAA-2006-0117, 44th AIAA Aerospace Sciences Meeting and Exhibit Reno, NV, January 9-12, 2006.

Das, K., Hamed, A. & **Basu, D., "*Steady and Pulsed Fluidic Actuation for Cavity Acoustics Control"*,** ICDFP8–EG–178, Proceedings of the 8th International Congress of Fluid Dynamics and Propulsion, December 14 –17, 2006, Sharm El-Shiekh, Egypt.

Das, K., Hamed, A. & **Basu, D., "*Icing Analysis of Fan Rotor at Part Load Conditions***", FEDSM06-98421, Proceedings of FEDSM '06, 2006 2nd US-European Fluids Engineering Summer Meeting, Miami, Florida, USA, July 17–21, 2006.

Das, K., Hamed, A. & **Basu, D.,** "***Droplet Trajectories and Collection on Fan Rotor at Off-Design Conditions***," GT 2006-91214, ASME Turbo Expo, Barcelona, Spain, May 8-11, 2006.

Das, K., Hamed, A. & **Basu, D.,** "***Ice Shape Prediction For Turbofan Rotating Blades***," AIAA-2006-0209, Reno, NV, January 9-12, 2006.

Basu, D., Hamed, A., and Das, K., 2005, "***DES, Hybrid RANS/LES and PANS models for unsteady separated turbulent flow simulations***", FEDSM2005-77421, Proceedings of FEDSM '05, 2005 ASME Fluids Engineering Division Summer Meeting and Exhibition, Houston, Texas, USA, June 19–23, 2005.

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Professional Membership

Member, American Society of Mechanical Engineers (ASME)
Member, The International Association for Fire Safety Science (IAFSS)

Other Synergistic Activities

Reviewer:
Journals: ASME Journal of Fluids Engineering, ASME Journal of Turbomachinery, Nuclear Engineering and Design, Computers and Fluids, International Journal of Computational Fluid Dynamics, Heat Transfer Research, European Journal of Fluid Mechanics, Journal of Fire Sciences.

Conferences: ASME Fluid Engineering Summer Meetings, ASME IGTI Turbo Expo, AIAA Aerospace Sciences Conference, Gas Turbine India Conference

Conference Organization: Co-organizer of 15th Forum on Industrial and Environmental Applications of Fluid Mechanics at 5th ASME/JSME Fluids Engineering Conference, July 30–August 2, 2007, San Diego, California.

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Available upon request