

Bibliography

- [1] Andrei Smirnov, Andrew Burt, Hanzhou Zhang, and Ismail Celik. Component-based modeling of multi-physics systems. **International Journal of Modelling and Simulation**, 30:409–415, 2010.
- [2] Andrei Smirnov, Andrew Burt, Hanzhou Zhang, and Ismail Celik. Multi-physics simulations of fuel cells using multi-component modeling. In *Proceedings of the ASME POWER CONFERENCE*, Part B, pages 915–922, Chicago, IL, 2005.
- [3] A.V. Smirnov, H. Zhang, A. Burt, and I. Celik. Multi-physics modeling of composite systems. In H.R.Arabnia, editor, *International Conference on Modeling, Simulation and Visualization Methods*, pages 112–118, LasVegas, Nevada, 2005. CSREA Press.
- [4] A.V. Smirnov, A. Burt, H. Zhang, and I. Celik. Component-based modeling of multi-physics systems. In *IASTED International Conference on Modelling and Simulation (MS 2005)*, number 459-105 in MS-05, pages 295–300, Cancun, Mexico, 2005.
- [5] A.V. Smirnov, H. Zhang, and B. Sowers. Voxel-based volume graphics system for multi-physics modeling. In *The 8th World Multi-Conference on Systemics, Cybernetics and Informatics*, volume 5 of *Computer Science and Engineering*, pages 144–149. International Institute of Informatics and Systemics, 2004.
- [6] A.V. Smirnov. Multi-physics modeling environment for continuum and discrete dynamics. **International Journal of Modelling and Simulation**, 24(3):190–197, 2004.
- [7] A.V. Smirnov. Multi-physics modeling environment for continuum and discrete dynamics. In *IASTED International Conference: Modelling and Simulation*, number 174 in MS-380, Palm Springs, CA, 2003.
- [8] A.V. Smirnov and H. Zhang. Physically-based node distributions for mesh generation. **International Journal of Modelling and Simulation**, 28(205-4582), 2008.
- [9] Andrei V. Smirnov and Hanzhou Zhang. A Geometrical Approach to 3D FEM Discretization of the Poisson Equation. In *IASTED International Conference on Modelling and Simulation (MS 2005)*, number 459-126 in MS-05, pages 398–403, Cancun, Mexico, 2005.
- [10] H. Zhang and A. Smirnov. Node Generation for Meshless Methods by Monte Carlo Simulation. In *8th US National Congress on Computational Mechanics*, number 43.3.3 in USNCCM-05, Austin, TX, 2005.
- [11] H. Zhang and A. V. Smirnov. Node placement for triangular mesh generation by Monte Carlo simulation. **International Journal for Numerical Methods in Engineering**, 64(7):973–989, 2005.
- [12] H. Zhang and A.V. Smirnov. Surface mesh generation for voxel-based objects by energy minimization. In H.R.Arabnia, editor, *International Conference on Imaging Science Systems and Technology: Computer Graphics*, pages 55–61, LasVegas, Nevada, 2005. CSREA Press.
- [13] Hanzhou Zhang and Andrei V. Smirnov. Node Distribution for Numerical Methods with Monte Carlo Simulation. In *IASTED International Conference on Modelling and Simulation (MS 2005)*, number 459-037 in MS-05, pages 363–368, Cancun, Mexico, 2005.
- [14] Andrei V. Smirnov and Hanzhou Zhang. Surface mesh generation on voxel-based objects. In *13th International Meshing Roundtable*, pages 291–298, Williamsburg, Virginia USA, 2004.
- [15] A.V. Smirnov, W. Huebsch, and C. Menchini. A flow-solver with flexible boundaries. In *IASTED International Conference*, volume 380:252 of *Modelling and Simulation*, pages 258–263, Palm Springs, CA, 2003.

- [16] A.V. Smirnov. Tool assisted mesh generation based on a tissue-growth model. **Medical and Biological Engineering and Computing**, 41(4):494–497, 2003.
- [17] Svyatoslav Shlenov, Andrei Smirnov, and Alexei Bezborodov. Parallel algorithm for filamentation of high-power super-short laser pulses. In H.R. Arabnia, editor, *Conference on Parallel and Distributed Processing Techniques and Applications*, number PDP-4003 in PDPTA'06-1, pages 94–98, Las Vegas, NV, 2006.
- [18] A.V. Smirnov, G. Hu, and I. Celik. Embarrassingly parallel computations of bubbly wakes. In A. Deane et al., editor, **Parallel Computational Fluid Dynamics. Theory and Applications**, pages 349–356. Elsevier B.V., 2006.
- [19] A.V. Smirnov, G. Hu, and I. Celik. Embarrassingly parallel computations of bubbly wakes. In *International Conference on Parallel Computational Fluid Dynamics*, College Park, Maryland, 2005.
- [20] A.V. Smirnov, H. Zhang, A. Burt, and I. Celik. Remote interface for geometric design and simulation control. In H.R. Arabnia, editor, *The 2004 International Conference on Imaging Science, Systems, and Technology: CISS'04*, pages 241–247, Las Vegas, NV, 2004. CSREA Press.
- [21] A.V. Smirnov. Domain coupling with the DOVE scheme. In B. Chetverushkin, editor, *Parallel Computational Fluid Dynamics: Advanced numerical methods, software and applications*, pages 119–127. Elsevier, North-Holland, Amsterdam, 2004.
- [22] A.V. Smirnov. Domain coupling with the DOVE scheme. In *Parallel CFD 2003*, Moscow, Russia, 2003. Russian Academy of Sciences.
- [23] A.V. Smirnov, I. Yavuz, C. Ersahin, and I. Celik. Parallel computations of turbulent wakes. In *Parallel CFD 2003*, Moscow, Russia, 2003. Russian Academy of Sciences.
- [24] A.V. Smirnov and R.A. Carreno-Chavez. Reactive molecular dynamics program ReMoDy. Technical report, National Institute for Fuel Cell Technology, NIFT, 2007.
- [25] S.I. Chernyshenko, G. M. Di Cicca, A. Iollo, A.V. Smirnov, N.D. Sandham, and Z.W. Hu. Analysis of data on the relation between eddies and streaky structures in turbulent flows using the placebo method. **Journal of Fluid Dynamics**, 41(5):772–783, 2007.
- [26] I. Celik, A. Smirnov, and S. Shi. Les of bubble dynamics in wake flows. In *Twenty-Fourth Symposium on Naval Hydrodynamics*, volume 2, pages 219–233, Val de Reuil, Japan, 2002.
- [27] A. Smirnov, I. Celik, and S. Shi. Large eddy simulations of a bubbly mixing layer. In *ASME Fluids Engineering Division Summer Meeting 2002*, volume FEDSM2002-31213, Montreal, Canada, 2002.
- [28] S. Shi, I. Celik, A. Smirnov, and I. Yavuz. Les of spatially developing turbulent wake flows. **Journal of Ship Research**, 50(3):208–221, 2006.
- [29] A.V. Smirnov, I. Celik, and S. Shaoping. Les of bubble dynamics in wake flows. **Journal of Computers and Fluids**, 34(3):351–373, 2005.
- [30] A.V. Smirnov. Flame propagation simulations with random flow generation model. In *Micro-Mixing in Turbulent Reactive Flows*, pages 100–104. Torus Press, Moscow, Russia, 2004.
- [31] A.V. Smirnov and A.C. Rolando. Reactive molecular dynamics model. In *Coal Based Fuel Cell Technology: Status, Needs and Future Applications*, number P10 in NMS-07, pages 63–68. National Institute for Fuel Cell Technology, 2007.
- [32] Andrei Smirnov, Andrew Burt, and Ismail Celik. Multi-physics simulations of fuel cells using multi-component modeling. **Journal of Power Sources**, 158:295–302, 2006.

- [33] A.V. Smirnov, H. Zhang, A. Burt, and I. Celik. Fuel-cell simulator interface. **Journal of Power Sources**, 138/1-2:187–193, 2004.
- [34] A.C. Burt, I.B. Celik, R.S. Gemmen, and A.V. Smirnov. A numerical study of cell to cell variations in a SOFC stack. **Journal of Power Sources**, 126/1-2:76–87, 2004.
- [35] A.C. Burt, I.B. Celik, R.S. Gemmen, and A.V. Smirnov. Cell to cell performance variations within a stack. In *Eighth International Symposium on Solid Oxide Fuel Cells (SOFC VIII)*, pages 217–223, Paris, France, 2003.
- [36] A.C. Burt, I.B. Celik, R.S. Gemmen, and A.V. Smirnov. Influence of radiative heat transfer on variation of cell voltage within a stack. In *First International Conference on Fuel Cell Science, Engineering, and Technology*, pages 1487–1500, Rochester, NY, 2003.
- [37] A. Burt, I. Celik, R.S. Gemmen, A.V. Smirnov, and E. Tatly. Variations in cell performance within a fuel cell stack. In *SOFC-VIII 203rd meeting of the Electrochemical Society*, Paris, France, April 27 - May 2, 2003.
- [38] Guoxiang Liu and Andrei Smirnov. Carbon sequestration in coal-beds with structural deformation effects. **Energy Conversion and Management**, 50(6):1586–1594, 2009.
- [39] Guoxiang Liu and Andrei Smirnov. Variable saturation model and application of carbon sequestration in coal-beds. **Carbon Capture Journal**, (2):23–25, 2008.
- [40] Guoxiang Liu and Andrei Smirnov. Modeling of carbon sequestration in coal-beds: A variable saturated simulation. **Energy Conversion and Management**, 49:2849–2858, 2008.
- [41] Guoxiang Liu and Andrei Smirnov. Structural deformation modeling of carbon sequestration in coal-beds. In *7th Annual Conference on Carbon Capture & Sequestration*, Pittsburgh, 2008.
- [42] G. Liu and A. Smirnov. Numerical modeling of CO₂ sequestration in coal-beds with a variable saturation model. In *Proceedings of the COMSOL Conference 2007*, number 0702 in COMSOL07, pages 247–256, Boston, MA, 2007.
- [43] Guoxiang Liu and Andrei Smirnov. Simultaion of carbon sequestration in a coalbed with variable saturation model. In *Sixth Annual Conference on Carbon Capture & Sequestration*, pages 1412–1429, Pittsburgh, PA, 2007.
- [44] G. Liu and A. Smirnov. Numerical modeling of CO₂ sequestration in unmineable coal seams. In *Twenty-Third Annual International Pittsburgh Coal Conference*, PCC-2006, pages 801–817, Pittsburgh, PA, 2006.
- [45] A. Smirnov and G. Liu. Modeling of long term carbon sequestration in different coal seams. In *Fifth Annual Conference on Carbon Capture & Sequestration*, CCS’06, pages 2812–2823, Alexandria, Virginia, 2006.
- [46] A.V. Smirnov, S. Rowan, and J. McCormick. Aerosols dispersion modeling using probabilistic particle tracking. **International Journal for Numerical Methods in Fluids**, 54(3):295–311, 2007.
- [47] Andrei Smirnov, Steven Rowan, and James McCormick. Probabilistic physical modeling on distributed computing systems. In H.R.Arabnia, editor, *Conference on Parallel and Distributed Processing Techniques and Applications*, number PDP-4004 in PDP’06-1, pages 286–291, Las Vegas, NV, 2006.
- [48] Andrei Smirnov and Steven Rowan. A fast response system for aerosol dispersion forecasting. In *17th IASTED International Conference: Modeling and Simulation*, number 530-050 in MS, pages 37–42, 2006.

- [49] Andrei Smirnov and Steven Rowan. Express risk assessment through web access to simulation data. In *Third International Conference on Information Technology: New Generations*, number 114 in ITNG-06, pages 584–585, Las Vegas, NV, 2006. IEEE Computer Society.
- [50] Andrei Smirnov, Steven Rowan, and James McCormick. Aerosol dispersion modeling with probabilistic implicit particle tracking algorithm. In *7th International Aerosol Conference*, volume 1 of *IAC-2006: 9G25*, pages 745–746, St. Paul, Minnesota, 2006. American Association for Aerosol Research (AAAR).
- [51] J. Smith, A. Smirnov, I. Yavuz, and I. Celik. Simulation of swirling flows related to an intake stroke of a Diesel engine. In *New Developments in Engine Flows Lubrication and Friction*, number 98-ICE-138 in ASME:31-2, Clymer, N.Y., 1998.
- [52] I. Celik, A. Smirnov, and J. Smith. Appropriate initial and boundary conditions for LES of a ship wake. In *3rd ASME/JSME Joint Fluids Engineering Conference*, volume FEDSM99-7851, San Francisco, California, 1999.
- [53] A. Smirnov, I. Yavuz, and I. Celik. Diesel combustion and LES of in-cylinder turbulence for IC-engines. In *In-Cylinder Flows and Combustion Processes*, number 33-3 in 99-ICE-247, pages 119–127. ASME Fall Technical Conference, Ann Arbor, Michigan, 1999.
- [54] I. Celik, I. Yavuz, A. Smirnov, J. Smith, E. Amin, and Gel. A. Prediction of in-cylinder turbulence for IC engines. In *Mediterranean Combustion Symposium*, Antalya, Turkey, 1999.
- [55] A. Smirnov, I. Celik, I. Yavuz, and J. Smith. Preliminary results from LES of in-cylinder turbulence for IC-engines. In *SAE International Congress and Exposition*, Detroit, Michigan, 1999.
- [56] I. Celik, I. Yavuz, A. Smirnov, J. Smith, E. Amin, and A. Gel. Prediction of in-cylinder turbulence for IC engines. *Combustion Science and Technology*, 150:339–372, 2000.
- [57] I. Celik, I. Yavuz, and A. Smirnov. Large eddy simulations of in-cylinder turbulence in internal combustion engines: a review. *International Journal of Engine Research*, 2(2):119–148, 2001.
- [58] A. Osman, H. Ammar, A. Smirnov, S. Shi, and I. Celik. Parallel analysis and implementation of large eddy simulations of ship wakes. In *IEEE International Conference on Cluster Computing CLUSTER 2000 Chemnitz Technical University*, Saxony, Germany, 2000.
- [59] S. Shi, A. Smirnov, and I. Celik. A new approach for generating time-dependent inflow boundary with application to large-eddy simulation of flat plate wake. In *International Mechanical Engineering Congress and Exposition*, Orlando, FL, 2000.
- [60] S. Shi, A. Smirnov, and I. Celik. Large-Eddy simulations of turbulent wake flows. In *Twenty-Third Symposium on Naval Hydrodynamics*, pages 203–209, Val de Reuil, France, 2000.
- [61] S. Shi, A. Smirnov, and I. Celik. Large eddy simulations of particle-laden turbulent wakes using a random flow generation technique. In *ONR 2000 Free Surface Turbulence and Bubbly Flows Workshop*, pages 13.1–13.7, California Institute of Technology, Pasadena, CA, 2000.
- [62] A. Smirnov and I. Celik. A Lagrangian particle dynamics model with an implicit four-way coupling scheme. In *The 2000 ASME International Mechanical Engineering Congress and Exposition. Fluids Engineering Division*, volume FED-253, pages 93–100, Orlando, FL, 2000.
- [63] A. Osman, H. Ammar, A. Smirnov, S. Shi, and I. Celik. Decomposition analysis of large eddy simulations of ship wakes. In *IASTED International Conference on Modeling and Simulation (MS-2001)*, 2001.

- [64] A. Osman, H. Ammar, A. Smirnov, S. Shi, and I. Celik. Scalability analysis and domain decomposition of large eddy simulations of ship wakes. In *ACS/IEEE International Conference on Computer Systems & Applications (CAICCSA)*, 2001.
- [65] A. Smirnov, S. Shi, and I. Celik. Les of a bubbly shipwake flow. In *Symposium on CFD Applications in Aerospace, 2001 ASME Fluids Engineering Division Summer Meeting*, number 18013 in FEDSM-2001, New Orleans, 2001.
- [66] S. Shi, A. Smirnov, and I. Celik. Large-eddy simulation in the near-wake of a flat plate. In *Symposium on CFD Applications in Aerospace, 2001 ASME Fluids Engineering Division Summer Meeting*, number 18027 in FEDSM-2001, New Orleans, 2001.
- [67] A. Smirnov, S. Shi, and I. Celik. Random Flow Simulations with a Bubble Dynamics Model. In *ASME Fluids Engineering Division Summer Meeting*, number 11215 in FEDSM2000, Boston, MA, 2000.
- [68] S. Shi, I. Celik, and A. Smirnov. Comparison of different numerical schemes and sub-grid scale models in large-eddy simulations. In *ASME Fluids Engineering Division Summer Meeting*, number 11232 in FEDSM2000, Boston, MA, 2000.
- [69] A. Smirnov, S. Shi, and I. Celik. Random flow generation technique for large eddy simulations and particle-dynamics modeling. *Trans. ASME. Journal of Fluids Engineering*, 123:359–371, 2001.
- [70] A.V. Smirnov. *Turbulent Swirl Flow Modeling for Combustor Applications*. PhD thesis, Chalmers University of Technology, 1998.
- [71] A. Smirnov, A. Lipatnikov, and J. Chomiak. Some aspects of turbulence and combustion modeling of swirl-stabilized LPP combustion. In *ASME ICE Fall Technical Conference*, number 98-ICE-132 in 31-2, pages 37–46, Clymer, New York, 1998.
- [72] A. Smirnov, A. Lipatnikov, and J. Chomiak. Simulations of swirl-stabilized premixed combustion. In *International Symposium on Computational Technologies for Fluid/Thermal/Chemical systems with Industrial Applications*, pages 153–160, San Diego, July 26-30, 1998.
- [73] A. Smirnov, A. Lipatnikov, and J. Chomiak. Modeling of turbulent swirling flame stabilization in LPP combustors. In *ASME TURBO EXPO Gas Turbine Symposium*, pages 83–91, Stockholm, Sweden, June 2-5, 1998.
- [74] A. Smirnov, A. Lipatnikov, and J. Chomiak. Simulations of LPP combustor with a turbulent-flame-speed closure model. In *22nd CIMAC International Congress on Combustion in Engines*, pages 203–211, Copenhagen, May 18-21, 1998.
- [75] A.V. Smirnov and J. Chomiak. Computations of swirling flow using different turbulence models. In *Numerical Methods in Laminar and Turbulent Flow*, volume 9, pages 263–273, Atlanta, GA, 1995.
- [76] A.V. Smirnov. Turbulent swirl flow modeling in axe-symmetric confined geometries. Technical report, Licentiate Thesis of Eng. Charlmers Univ. of Tech., Dept. Thermo and Fluid Dynamics, Gothenburg, SWEDEN, 1995.
- [77] A.V. Smirnov and J. Chomiak. Predictions of recirculation zones in turbulent swirl flows. In *3rd International Symposium on Engineering Turbulence Modeling and Experiments*, pages 309–318, Crete, Greece, 1996.
- [78] A. Smirnov, V. Golovitchev, and J. Chomiak. A numerical study of heat transfer in swirl flows. In *International Symposium on Advances in Computational Heat Transfer*, pages 156–168, Cesme, Turkey, 1997.

- [79] I.A. Bolshakov and A.V. Smirnov. Methods of text compression. In *Itogi nauki i tehniki: teoriya veroyatnostei, matematicheskaya statistika, teoreticheskaya kibernetika*, volume 28, pages 85–109. VINITI, Moscow, 1988. In Russian.
- [80] A. V. Smirnov. Adaptive affix-based text compression algorithm. *Automatic Documentation and Mathematical Linguistics*, 23(3):34–38, 1989.
- [81] A. V. Smirnov. Flexible control of data formats. *Automatic Documentation and Mathematical Linguistics*, 23(5):37–39, 1989.
- [82] A. V. Smirnov. Computations of a back-scattered lidar beam from sea water using the Monte-Carlo technique. In *The 4-th All-Union Conference on Photometry and its Metrological Support*, 1982. In Russian.
- [83] B.A. Gureev, A.K. Zakharov, and A. V. Smirnov. Computer simulation of the influence of lidar parameters and experimental conditions on the detected signal during the lidar sounding of sea bottom. In *The 5-th All-Union Conference on Photometry and its Metrological Support*, 1984. In Russian.
- [84] A.V. Smirnov. On the approximation of sea-water light-scattering functions. Dep. 20.03.85 2025-85, VINITI, Moscow, 1984. In Russian.
- [85] Yu. A. Goldin, B.A. Gureev, and A.V. Smirnov. A device for underwater measurements of light radiation. Patent 128 6972: 01.10.86, Central Patent Bureau, USSR, October 1986. In Russian.
- [86] A.V. Smirnov. Implementation of the Monte-Carlo method for the MVT ensemble. Dep. 17.11.87 8462-87, VINITI, Moscow, 1987. In Russian.
- [87] B.A. Gureev, Y.A. Goldin, and A.V. Smirnov. Apparatus for measurements of energy characteristics of radiation in water medium. SU Patent 1286972-A1: 3866080/24-25, 1985.
- [88] Andrei Smirnov. Music machine. US Patent 8,541,677, 2013.