



## Daniel Tartakovsky

Professor of Energy Resources Engineering

 Curriculum Vitae available Online

### Bio

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#### ACADEMIC APPOINTMENTS

- Professor, Energy Resources Engineering
- Member, Bio-X

#### ADMINISTRATIVE APPOINTMENTS

- Staff Scientist, Institute of Mathematics and Mechanics, Kazan State University, Kazan, Russia, (1990-1993)
- Technical Staff Member, Computer Research and Applications Group, CCS Division, Los Alamos National Laboratory, (1999-2000)
- Technical Staff Member and Team Leader (Multiscale Analysis Team, since 9/2004), Mathematical Modeling and Analysis Group, Theoretical Division, Los Alamos National Laboratory, (2000-2007)
- Adjunct Associate Professor, Department of Hydrology and Water Resources, The University of Arizona, Tucson, (2001-2004)
- Associate Professor, Department of Mechanical and Aerospace Engineering, University of California, San Diego, (2004-2008)
- Professor, Department of Mechanical and Aerospace Engineering, University of California, San Diego, (2008-2016)
- Professor, Department of Energy Resources Engineering, Stanford University, (2016- present)

#### HONORS AND AWARDS

- Foreign Member, Accademia delle Scienze, Istituto di Bologna (Sezione: Scienze Tecniche), Italy (2015)
- Chutian Scholar Chair Professor, Three Gorges University, People's Republic of China (PRC) (2012)
- Travel award, State Administration of Foreign Expert Affairs, PRC (2010)
- The 1999 Editors' Citation for Excellence in Refereeing for Water Resources Research, EOS, 81(49), p. 598, December 5, 2000 (2000)
- Travel award - The framework of the short-term mobility program, Italy, Italian Centro Nazionale delle Ricerche (CNR), (1999 & 2000)
- Award, Special Fund for the Award of Personal Scholarships and Grants to Gifted Young Academics, Novosibirsk, Russia (1993)
- Award, All-Union Student Research Conference in Mathematics and Mechanics, Moscow, USSR (1991)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate Editor, SIAM Journal on Scientific Computing (SISC) (2012 - present)
- Associate Editor, SIAM/ASA Journal on Uncertainty Quantification (2012 - present)
- Associate Editor, Water Resources Research (2010 - present)
- Member of Editorial Board, International Journal for Uncertainty Quantification (2010 - present)
- Associate Editor, Stochastic Environmental Research and Risk Assessment (2007 - present)
- Guest Editor, Computing in Science and Engineering (2007 - 2007)

- Guest Editor, Computing in Science and Engineering (2005 - 2005)
- Member of Editorial Board, Advances in Water Resources (2004 - present)
- Editor, Reviews of Geophysics (2001 - 2010)

## PROFESSIONAL EDUCATION

- Ph.D., Department of Hydrology and Water Resources, The University of Arizona, Tucson , Hydrology (1996)
- M.Sc., Department of Mathematics and Mechanics, Kazan State University, Russia (Summa Cum Laude) , Applied Mathematics/Fluid Mechanics (1991)

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

Environmental fluid mechanics:

Subsurface flow and contaminant transport, multiphase flow, groundwater hydrology, reservoir simulations, well hydraulics, surface-water/groundwater interactions, inverse modeling, subsurface imaging, decisions under uncertainty, geothermal energy.

Applied and computational mathematics:

Mathematical modeling of complex systems (electrochemistry for energy storage, design of nano-porous materials), uncertainty quantification, probabilistic risk assessment, stochastic partial differential equations, hybrid numerical algorithms, spatial statistics, data assimilation.

Biomedical modeling:

Blood flow, microcirculation, intracellular and intercellular transport, bioinformatics, computational cell biology, hemodynamics, chemotaxis.

## Teaching

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### COURSES

#### 2019-20

- Applied Mathematics in Reservoir Engineering: ENERGY 281 (Spr)
- ERE Master's Graduate Seminar: ENERGY 351 (Win)
- ERE PhD Graduate Seminar: ENERGY 352 (Win)
- Uncertainty Quantification in Data-Centric Simulations: ENERGY 160, ENERGY 260 (Win)

#### 2018-19

- Applied Mathematics in Reservoir Engineering: ENERGY 281 (Spr)
- ERE Master's Graduate Seminar: ENERGY 351 (Spr)
- ERE PhD Graduate Seminar: ENERGY 352 (Spr)
- Uncertainty Quantification in Data-Centric Simulations: ENERGY 160, ENERGY 260 (Win)

#### 2017-18

- Applied Mathematics in Reservoir Engineering: ENERGY 281 (Spr)
- Modeling Uncertainty in the Earth Sciences: ENERGY 160 (Win)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Abdullah Alakeely, Xuhua Gao, FILIPPOS KOSTAKIS, Rita Okoroafor, Jie Yang

**Doctoral Dissertation Advisor (AC)**

Hannah Lu, Zitong Zhou

**Master's Program Advisor**

Lama El Halabi

**Doctoral Dissertation Co-Advisor (AC)**

HYUNG JUN YANG

**Doctoral (Program)**

Dimitrios Ioannis Belivanis, Livia Fulchignoni, weiyu li

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**Publications**

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**PUBLICATIONS**

- **Hybrid models of chemotaxis with application to leukocyte migration.** *Journal of mathematical biology*  
Lu, H., Um, K., Tartakovsky, D. M.  
2021; 82 (4): 23
- **METHOD OF DISTRIBUTIONS FOR SYSTEMS WITH STOCHASTIC FORCING** *INTERNATIONAL JOURNAL FOR UNCERTAINTY QUANTIFICATION*  
Rutjens, R. L., Jacobs, G. B., Tartakovsky, D. M.  
2021; 11 (2): 83–104
- **Tensor methods for the Boltzmann-BGK equation** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Boelens, A. P., Venturi, D., Tartakovsky, D. M.  
2020; 421
- **Solute dispersion in bifurcating networks** *JOURNAL OF FLUID MECHANICS*  
Zimmerman, R. A., Tartakovsky, D. M.  
2020; 901
- **Markov chain Monte Carlo with neural network surrogates: application to contaminant source identification** *STOCHASTIC ENVIRONMENTAL RESEARCH AND RISK ASSESSMENT*  
Zhou, Z., Tartakovsky, D. M.  
2020
- **Estimation of distributions via multilevel Monte Carlo with stratified sampling** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Taverniers, S., Tartakovsky, D. M.  
2020; 419
- **Accelerated Multilevel Monte Carlo With Kernel-Based Smoothing and Latinized Stratification** *WATER RESOURCES RESEARCH*  
Taverniers, S., Bosma, S. M., Tartakovsky, D. M.  
2020; 56 (9)
- **Lagrangian dynamic mode decomposition for construction of reduced-order models of advection-dominated phenomena** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Lu, H., Tartakovsky, D. M.  
2020; 407
- **Analytical model for gravity segregation of horizontal multiphase flow in porous media** *PHYSICS OF FLUIDS*  
Rabinovich, A., Bedrikovetsky, P., Tartakovsky, D. M.  
2020; 32 (4)
- **Modified immersed boundary method for flows over randomly rough surfaces** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Kwon, C., Tartakovsky, D. M.  
2020; 406

- **Bayesian Update and Method of Distributions: Application to Leak Detection in Transmission Mains** *WATER RESOURCES RESEARCH*  
Alawadhi, A., Tartakovsky, D. M.  
2020; 56 (2)
- **Method of distributions for quantification of geologic uncertainty in flow simulations** *Method of distributions for quantification of geologic uncertainty in flow simulations*  
Yang, H. J., Boso, F., Tchelepi, H. A., Tartakovsky, D. M.  
2020
- **PREDICTION ACCURACY OF DYNAMIC MODE DECOMPOSITION** *SIAM JOURNAL ON SCIENTIFIC COMPUTING*  
Lu, H., Tartakovsky, D. M.  
2020; 42 (3): A1639–A1662
- **Data-Informed Method of Distributions for Hyperbolic Conservation Laws** *SIAM Journal on Scientific Computing*  
Boso, F., Tartakovsky, D. M.  
2020; 42 (1): 25
- **Resource-Constrained Model Selection for Uncertainty Propagation and Data Assimilation** *SIAM-ASA JOURNAL ON UNCERTAINTY QUANTIFICATION*  
Yang, L., Wang, P., Tartakovsky, D. M.  
2020; 8 (3): 1118–38
- **Distribution-Based Global Sensitivity Analysis in Hydrology** *WATER RESOURCES RESEARCH*  
Ciriello, V., Lauriola, I., Tartakovsky, D. M.  
2019
- **Probabilistic Forecast of Single-Phase Flow in Porous Media With Uncertain Properties** *WATER RESOURCES RESEARCH*  
Yang, H., Boso, F., Tchelepi, H. A., Tartakovsky, D. M.  
2019
- **Efficient gHMC Reconstruction of Contaminant Release History** *FRONTIERS IN ENVIRONMENTAL SCIENCE*  
Barajas-Solano, D. A., Alexander, F. J., Anghel, M., Tartakovsky, D. M.  
2019; 7
- **Diffusion in Porous Media: Phenomena and Mechanisms** *TRANSPORT IN POROUS MEDIA*  
Tartakovsky, D. M., Dentz, M.  
2019; 130 (1): 105–27
- **Causality and Bayesian Network PDEs for multiscale representations of porous media** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Um, K., Hall, E. J., Katsoulakis, M. A., Tartakovsky, D. M.  
2019; 394: 658–78
- **Microstructural heterogeneity drives reaction initiation in granular materials** *APPLIED PHYSICS LETTERS*  
Bakarji, J., Tartakovsky, D. M.  
2019; 114 (25)
- **A Mechanistic Analysis of Possible Blood Transfusion Failure to Increase Circulatory Oxygen Delivery in Anemic Patients** *ANNALS OF BIOMEDICAL ENGINEERING*  
Zimmerman, R. A., Tsai, A. G., Intaglietta, M., Tartakovsky, D. M.  
2019; 47 (4): 1094–1105
- **A Mechanistic Analysis of Possible Blood Transfusion Failure to Increase Circulatory Oxygen Delivery in Anemic Patients.** *Annals of biomedical engineering*  
Zimmerman, R. A., Tsai, A. G., Intaglietta, M., Tartakovsky, D. M.  
2019
- **Quantification of Predictive Uncertainty in Models of FtsZ ring assembly in Escherichia coli.** *Journal of theoretical biology*  
Ye, Y. n., Ruiz-Martinez, A. n., Wang, P. n., Tartakovsky, D. M.  
2019: 110006
- **Method of Distributions for Water Hammer Equations With Uncertain Parameters** *WATER RESOURCES RESEARCH*

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- Alawadhi, A., Boso, F., Tartakovsky, D. M.  
2018; 54 (11): 9398–9411
- **Nonlocal PDF methods for Langevin equations with colored noise** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Maltba, T., Gremaud, P. A., Tartakovsky, D. M.  
2018; 367: 87–101
  - **Information-Theoretic Approach to Bidirectional Scaling** *WATER RESOURCES RESEARCH*  
Boso, F., Tartakovsky, D. M.  
2018; 54 (7): 4916–28
  - **Probabilistic Forecasting of Nitrogen Dynamics in Hyporheic Zone** *WATER RESOURCES RESEARCH*  
Boso, F., Marzadri, A., Tartakovsky, D. M.  
2018; 54 (7): 4417–31
  - **Interpretation of Heat-Pulse Tracer Tests for Characterization of Three-Dimensional Velocity Fields in Hyporheic Zone** *WATER RESOURCES RESEARCH*  
Zlotnik, V., Tartakovsky, D. M.  
2018; 54 (6): 4028–39
  - **Efficient models of polymerization applied to FtsZ ring assembly in Escherichia coli** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Ruiz-Martinez, A., Bartol, T. M., Sejnowski, T. J., Tartakovsky, D. M.  
2018; 115 (19): 4933–38
  - **The frequency domain approach to analyse field-scale miscible flow transport experiments in the soils** *BIOSYSTEMS ENGINEERING*  
Severino, G., Toraldo, G., Tartakovsky, D. M.  
2018; 168: 96–104
  - **Global sensitivity analysis of multiscale properties of porous materials** *JOURNAL OF APPLIED PHYSICS*  
Um, K., Zhang, X., Katsoulakis, M., Plechac, P., Tartakovsky, D. M.  
2018; 123 (7)
  - **A Hybrid Multiscale Model of Miscible Reactive Fronts** *WATER RESOURCES RESEARCH*  
Siuliukina, N., Tartakovsky, D. M.  
2018; 54 (1): 61–71
  - **Parallel tensor methods for high-dimensional linear PDEs** *Journal of Computational Physics*  
Boelens, A. M., Venturi, D., Tartakovsky, D. M.  
2018; 375: 519 - 539
  - **Effects of Hydraulic Soil Properties on Vegetation Pattern Formation in Sloping Landscapes** *BULLETIN OF MATHEMATICAL BIOLOGY*  
Severino, G., Giannino, F., Carteni, F., Mazzoleni, S., Tartakovsky, D. M.  
2017; 79 (12): 2773–84
  - **Impact of Hydrogeological Uncertainty on Estimation of Environmental Risks Posed by Hydrocarbon Transportation Networks** *WATER RESOURCES RESEARCH*  
Ciriello, V., Lauriola, I., Bonvicini, S., Cozzani, V., Di Federico, V., Tartakovsky, D. M.  
2017; 53 (11): 8686–97
  - **Estimation of Intrinsic Length Scales of Flow in Unsaturated Porous Media** *WATER RESOURCES RESEARCH*  
Assouline, S., Ciriello, V., Tartakovsky, D. M.  
2017; 53 (11): 9980–87
  - **Posttransfusion Increase of Hematocrit per se Does Not Improve Circulatory Oxygen Delivery due to Increased Blood Viscosity** *ANESTHESIA AND ANALGESIA*  
Zimmerman, R., Tsai, A. G., Vazquez, B. Y., Cabrales, P., Hofmann, A., Meier, J., Shander, A., Spahn, D. R., Friedman, J. M., Tartakovsky, D. M., Intaglietta, M.  
2017; 124 (5): 1547-1554
  - **Optimal design of nanoporous materials for electrochemical devices** *APPLIED PHYSICS LETTERS*  
Zhang, X., Tartakovsky, D. M.  
2017; 110 (14)

- **An analytical model for carrier-facilitated solute transport in weakly heterogeneous porous media** *APPLIED MATHEMATICAL MODELLING*  
Severino, G., Campagna, R., Tartakovsky, D. M.  
2017; 44: 261-273
- **On the use of reverse Brownian motion to accelerate hybrid simulations** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Bakarji, J., Tartakovsky, D. M.  
2017; 334: 68-80
- **A tightly-coupled domain-decomposition approach for highly nonlinear stochastic multiphysics systems** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Taverniers, S., Tartakovsky, D. M.  
2017; 330: 884-901
- **Doubly Penalized LASSO for Reconstruction of Biological Networks** *PROCEEDINGS OF THE IEEE*  
Asadi, B., Maurya, M. R., Tartakovsky, D. M., Subramaniam, S.  
2017; 105 (2): 319-329
- **Effective Ion Diffusion in Charged Nanoporous Materials** *JOURNAL OF THE ELECTROCHEMICAL SOCIETY*  
Zhang, X., Tartakovsky, D. M.  
2017; 164 (4): E53-E61
- **Effects of Hydraulic Soil Properties on Vegetation Pattern Formation in Sloping Landscapes.** *Bulletin of mathematical biology*  
Severino, G. n., Giannino, F. n., Cartení, F. n., Mazzoleni, S. n., Tartakovsky, D. M.  
2017; 79 (12): 2773–84
- **Role of glycocalyx in attenuation of shear stress on endothelial cells: from in vivo experiments to microfluidic circuits**  
Battiato, I., Tartakovsky, D., Cabrales, P., Intaglietta, M., IEEE  
IEEE.2017
- **Noise-driven interfaces and their macroscopic representation** *PHYSICAL REVIEW E*  
Dentz, M., Neuweiler, I., Meheust, Y., Tartakovsky, D. M.  
2016; 94 (5)
- **Particle Methods for Heat Transfer in Fractured Media** *TRANSPORT IN POROUS MEDIA*  
Gisladottir, V. R., Roubinet, D., Tartakovsky, D. M.  
2016; 115 (2): 311-326
- **Noise-driven interfaces and their macroscopic representation.** *Physical review. E*  
Dentz, M., Neuweiler, I., Méheust, Y., Tartakovsky, D. M.  
2016; 94 (5-1): 052802-?
- **Analytical models of axisymmetric reaction-diffusion phenomena in composite media** *INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER*  
Zimmerman, R. A., Jankowski, T. A., Tartakovsky, D. M.  
2016; 99: 425-431
- **Efficient Multiscale Models of Polymer Assembly** *BIOPHYSICAL JOURNAL*  
Ruiz-Martinez, A., Bartol, T. M., Sejnowski, T. J., Tartakovsky, D. M.  
2016; 111 (1): 185-196
- **Shear-Induced Nitric Oxide Production by Endothelial Cells** *BIOPHYSICAL JOURNAL*  
Sriram, K., Laughlin, J. G., Rangamani, P., Tartakovsky, D. M.  
2016; 111 (1): 208-221
- **The method of distributions for dispersive transport in porous media with uncertain hydraulic properties** *WATER RESOURCES RESEARCH*  
Boso, F., Tartakovsky, D. M.  
2016; 52 (6): 4700-4712
- **Conservative tightly-coupled simulations of stochastic multiscale systems** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Taverniers, S., Pigarov, A. Y., Tartakovsky, D. M.  
2016; 313: 400-414

- **Simulating social-ecological systems: the Island Digital Ecosystem Avatars (IDEA) consortium** *GIGASCIENCE*  
Davies, N., Field, D., Gavaghan, D., Holbrook, S. J., Planes, S., Troyer, M., Bonsall, M., Claudet, J., Roderick, G., Schmitt, R. J., Zettler, L. A., Berteaux, V., Bossin, et al  
2016; 5
- **Stochastic Collocation Methods for Nonlinear Parabolic Equations with Random Coefficients** *SIAM-ASA JOURNAL ON UNCERTAINTY QUANTIFICATION*  
Barajas-Solano, D. A., Tartakovsky, D. M.  
2016; 4 (1): 475–94
- **Temperature fields induced by geothermal devices** *ENERGY*  
Ciriello, V., Bottarelli, M., Di Federico, V., Tartakovsky, D. M.  
2015; 93: 1896-1903
- **Data-driven models of groundwater salinization in coastal plains** *JOURNAL OF HYDROLOGY*  
Felisa, G., Ciriello, V., Antonellini, M., Di Federico, V., Tartakovsky, D. M.  
2015; 531: 187-197
- **Coexistence of short- and long-range ferromagnetic order in nanocrystalline Fe<sub>2</sub>Mn<sub>1-x</sub>Cu<sub>x</sub>Al (x=0.0, 0.1 and 0.3) synthesized by high-energy ball milling** *JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS*  
Tran Dang Thanh, T. D., Nanto, D., Ngo Thi Uyen Tuyen, N. T., Nan, W., Yu, Y., Tartakovsky, D. M., Yu, S. C.  
2015; 394: 37-43
- **Critical Behavior in Double-Exchange Ferromagnets of Pr<sub>0.6</sub>Sr<sub>0.4</sub>MnO<sub>3</sub> Nanoparticles** *IEEE TRANSACTIONS ON MAGNETICS*  
Tran Dang Thanh, T. D., YiKyung, Y., Ho, T. A., Manh, T. V., The Long Phan, T. L., Tartakovsky, D. M., Yu, S. C.  
2015; 51 (11)
- **Impact of stochastic fluctuations in the cell free layer on nitric oxide bioavailability** *FRONTIERS IN COMPUTATIONAL NEUROSCIENCE*  
Park, S., Intaglietta, M., Tartakovsky, D. M.  
2015; 9
- **Design of nanoporous materials with optimal sorption capacity** *JOURNAL OF APPLIED PHYSICS*  
Zhang, X., Urita, K., Moriguchi, I., Tartakovsky, D. M.  
2015; 117 (24)
- **A boundary-layer solution for flow at the soil-root interface** *JOURNAL OF MATHEMATICAL BIOLOGY*  
Severino, G., Tartakovsky, D. M.  
2015; 70 (7): 1645-1668
- **Linear functional minimization for inverse modeling** *WATER RESOURCES RESEARCH*  
Barajas-Solano, D. A., WOHLBERG, B. E., Vesselinov, V. V., Tartakovsky, D. M.  
2015; 51 (6): 4516-4531
- **Critical behavior and magnetocaloric effect of Pr<sub>1-x</sub>Ca<sub>x</sub>MnO<sub>3</sub>** *JOURNAL OF APPLIED PHYSICS*  
Ho, T. A., Thanh, T. D., Yu, Y., Tartakovsky, D. M., Ho, T. O., Thang, P. D., Anh-Tuan Le, A. T., The-Long Phan, T. L., Yu, S. C.  
2015; 117 (17)
- **Impact of Data Assimilation on Cost-Accuracy Tradeoff in Multifidelity Models** *SIAM-ASA JOURNAL ON UNCERTAINTY QUANTIFICATION*  
Sinsbeck, M., Tartakovsky, D. M.  
2015; 3 (1): 954–68
- **Hematocrit dispersion in asymmetrically bifurcating vascular networks** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*  
Sriram, K., Intaglietta, M., Tartakovsky, D. M.  
2014; 307 (11): H1576-H1586
- **Identifying Transport Behavior of Single-Molecule Trajectories** *BIOPHYSICAL JOURNAL*  
Regner, B. M., Tartakovsky, D. M., Sejnowski, T. J.  
2014; 107 (10): 2345-2351
- **Vegetation Pattern Formation Due to Interactions Between Water Availability and Toxicity in Plant-Soil Feedback** *BULLETIN OF MATHEMATICAL BIOLOGY*

- Marasco, A., Iuorio, A., Carteni, F., Bonanomi, G., Tartakovsky, D. M., Mazzoleni, S., Giannino, F.  
2014; 76 (11): 2866-2883
- **Replacing the Transfusion of 1-2 Units of Blood with Plasma Expanders that Increase Oxygen Delivery Capacity: Evidence from Experimental Studies.** *Journal of functional biomaterials*  
Tsai, A. G., Salazar Vázquez, B. Y., Cabrales, P., Kistler, E. B., Tartakovsky, D. M., Subramaniam, S., Acharya, S. A., Intaglietta, M.  
2014; 5 (4): 232-245
  - **Non-Newtonian Flow of Blood in Arterioles: Consequences for Wall Shear Stress Measurements** *MICROCIRCULATION*  
Sriram, K., Intaglietta, M., Tartakovsky, D. M.  
2014; 21 (7): 628-639
  - **Information theoretic approach to complex biological network reconstruction: application to cytokine release in RAW 264.7 macrophages** *BMC SYSTEMS BIOLOGY*  
Farhangmehr, F., Maurya, M. R., Tartakovsky, D. M., Subramaniam, S.  
2014; 8
  - **Cumulative distribution function solutions of advection-reaction equations with uncertain parameters** *PROCEEDINGS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES*  
Boso, F., Broyda, S. V., Tartakovsky, D. M.  
2014; 470 (2166)
  - **Noise propagation in hybrid models of nonlinear systems: The Ginzburg-Landau equation** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Taverniers, S., Alexander, F. J., Tartakovsky, D. M.  
2014; 262: 313-324
  - **Analytical models of heat conduction in fractured rocks** *JOURNAL OF GEOPHYSICAL RESEARCH-SOLID EARTH*  
Martinez, A. R., Roubinet, D., Tartakovsky, D. M.  
2014; 119 (1): 83-98
  - **Hybrid modeling of heterogeneous geochemical reactions in fractured porous media** *WATER RESOURCES RESEARCH*  
Roubinet, D., Tartakovsky, D. M.  
2013; 49 (12): 7945-7956
  - **Stochastic smoothed profile method for modeling random roughness in flow problems** *COMPUTER METHODS IN APPLIED MECHANICS AND ENGINEERING*  
Zayernouri, M., Park, S., Tartakovsky, D. M., Karniadakis, G. E.  
2013; 263: 99-112
  - **Exact PDF equations and closure approximations for advective-reactive transport** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Venturi, D., Tartakovsky, D. M., Tartakovsky, A. M., Karniadakis, G. E.  
2013; 243: 323-343
  - **Anomalous Diffusion of Single Particles in Cytoplasm** *BIOPHYSICAL JOURNAL*  
Regner, B. M., Vucinic, D., Domnisoru, C., Bartol, T. M., Hetzer, M. W., Tartakovsky, D. M., Sejnowski, T. J.  
2013; 104 (8): 1652-1660
  - **Probability Density Function Method for Langevin Equations with Colored Noise** *PHYSICAL REVIEW LETTERS*  
Wang, P., Tartakovsky, A. M., Tartakovsky, D. M.  
2013; 110 (14)
  - **Assessment and management of risk in subsurface hydrology: A review and perspective** *ADVANCES IN WATER RESOURCES*  
Tartakovsky, D. M.  
2013; 51: 247-260
  - **CDF SOLUTIONS OF BUCKLEY-LEVERETT EQUATION WITH UNCERTAIN PARAMETERS** *MULTISCALE MODELING & SIMULATION*  
Wang, P., Tartakovsky, D. M., Jarman, K. D., Tartakovsky, A. M.  
2013; 11 (1): 118-133
  - **COMPUTING GREEN'S FUNCTIONS FOR FLOW IN HETEROGENEOUS COMPOSITE MEDIA** *INTERNATIONAL JOURNAL FOR UNCERTAINTY QUANTIFICATION*



- 
- Barajas-Solano, D. A., Tartakovsky, D. M.  
2013; 3 (1): 39-46
- **Particle-tracking simulations of anomalous transport in hierarchically fractured rocks** *COMPUTERS & GEOSCIENCES*  
Roubinet, D., de Dreuzy, J., Tartakovsky, D. M.  
2013; 50: 52-58
  - **An Information-theoretic Algorithm to Data-driven Genetic Pathway Interaction Network Reconstruction of Dynamic Systems** *2013 IEEE INTERNATIONAL CONFERENCE ON BIOINFORMATICS AND BIOMEDICINE (BIBM)*  
Farhangmehr, F., Tartakovsky, D. M., Sadatmousavi, P., Maurya, M. R., Subramaniam, S.  
2013
  - **A NEW PHYSIOLOGICAL BOUNDARY CONDITION FOR HEMODYNAMICS** *SIAM JOURNAL ON APPLIED MATHEMATICS*  
Cousins, W., Gremaud, P. A., Tartakovsky, D. M.  
2013; 73 (3): 1203-1223
  - **Stochastic operator-splitting method for reaction-diffusion systems** *JOURNAL OF CHEMICAL PHYSICS*  
Choi, T., Maurya, M. R., Tartakovsky, D. M., Subramaniam, S.  
2012; 137 (18)
  - **Autoregulation and mechanotransduction control the arteriolar response to small changes in hematocrit** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*  
Sriram, K., Vazquez, B. Y., Tsai, A. G., Cabrales, P., Intaglietta, M., Tartakovsky, D. M.  
2012; 303 (9): H1096-H1106
  - **Uncertainty quantification in kinematic-wave models** *JOURNAL OF COMPUTATIONAL PHYSICS*  
Wang, P., Tartakovsky, D. M.  
2012; 231 (23): 7868-7880
  - **Comparison of statistical and optimisation-based methods for data-driven network reconstruction of biochemical systems** *IET SYSTEMS BIOLOGY*  
Asadi, B., Maurya, M. R., Tartakovsky, D. M., Subramaniam, S.  
2012; 6 (5): 155-U53
  - **PEG-albumin supraplasma expansion is due to increased vessel wall shear stress induced by blood viscosity shear thinning** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*  
Sriram, K., Tsai, A. G., Cabrales, P., Meng, F., Acharya, S. A., Tartakovsky, D. M., Intaglietta, M.  
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