

PUBLICATION LIST

by Denis S. GREBENKOV

- *INVITED PAPERS*

1. D. S. Grebenkov, *Partially Reflected Brownian Motion: A Stochastic Approach to Transport Phenomena*, in “Focus on Probability Theory”, Ed. L. R. Velle, pp. 135-169 (Nova Science Publishers, 2006).

[Electronic version is available on <http://arxiv.org/abs/math/0610080>]

- *PEER REVIEWED JOURNAL PUBLICATIONS*

1. D. S. Grebenkov, *NMR survey of reflected Brownian motion*, Rev. Mod. Phys. **79** (2007, in print)
2. D. S. Grebenkov, G. Guillot, B. Sapoval, *Restricted Diffusion in a Model Acinar Labyrinth by NMR. Theoretical and Numerical Results*, J. Magn. Reson. **184**, 143-156 (2007).
3. D. S. Grebenkov, *Nuclear Magnetic Resonance Restricted Diffusion between Parallel Planes in a Cosine Magnetic Field: An Exactly Solvable Model*, J. Chem. Phys. **126**, 104706 (2007).
4. D. S. Grebenkov, M. Filoche, B. Sapoval, *A Simplified Analytical Model for Laplacian Transfer Across Deterministic Prefractal Interfaces*, Fractals **15**, 27-39 (2007).
5. P. Levitz, D. S. Grebenkov, M. Zinsmeister, K. Kolwankar, B. Sapoval, *Brownian flights over a fractal nest and first passage statistics on irregular surfaces*, Phys. Rev. Lett. **96**, 180601 (2006).
6. D. S. Grebenkov, *Multieponential attenuation of the CPMG spin echoes due to a geometrical confinement*, J. Magn. Reson. **180**, 118-126 (2006).
7. D. S. Grebenkov, M. Filoche, B. Sapoval, *Mathematical Basis for a General Theory of Laplacian Transport towards Irregular Interfaces*, Phys. Rev. E **73**, 021103 (2006).
8. D. S. Grebenkov, *Scaling Properties of the Spread Harmonic Measures*, Fractals **14** (3), 231-243 (2006).
9. D. S. Grebenkov, *What Makes a Boundary Less Accessible*, Phys. Rev. Lett. **95**, 200602 (2005).
10. D. S. Grebenkov, M. Filoche, B. Sapoval, M. Felici, *Diffusion-Reaction in Branched Structures: Theory and Application to the Lung Acinus*, Phys. Rev. Lett. **94**, 050602 (2005).
11. D. S. Grebenkov, A. A. Lebedev, M. Filoche, B. Sapoval, *Multifractal Properties of the Harmonic Measure on Koch Boundaries in Two and Three Dimensions*, Phys. Rev. E **71**, 056121 (2005).
12. B. Sapoval, J. S. Andrade Jr, A. Baldassari, A. Desolneux, F. Devreux, M. Filoche, D. S. Grebenkov, S. Russ, *New Simple Properties of a Few Irregular Systems*, Physica A **357** (1), 1-17 (2005).
13. D. S. Grebenkov, M. Filoche, B. Sapoval, *Spectral Properties of the Brownian Self-Transport Operator*, Eur. Phys. J. B **36** (2), 221-231 (2003).
14. A. P. Grinin, D. S. Grebenkov, *Study of Relaxation in Micellar Solution by the Numerical Experiment*, Colloid Journal **65** (5), 552-561 (2003).

15. D. S. Grebenkov, *Parametric Equations of the Theory of Formation of Spherical Micelles*, J. Coll. Int. Sci. **249**, 162-171 (2002).
16. D. S. Grebenkov, A. P. Grinin, *Numerical Simulation of Transitive Processes of Micellization*, Vestnik Sankt-Peterburgskogo Universiteta, Series 4, **4** (28), 3-12 (2001).
17. D. S. Grebenkov, A. P. Grinin, F. M. Kuni, *Numerical Verification of the Accuracy of Some Analytical Results in the Nucleation Theory*, Vestnik Sankt-Peterburgskogo Universiteta, Series 4, **2** (11), 3-10 (1999).

- *PEER REVIEWED CONFERENCE PUBLICATIONS*

1. D. S. Grebenkov, *Multiple correlation function approach to study the restricted diffusion under arbitrary magnetic field*, Proceedings of the 8th International Bologna Conference on Magnetic Resonance in Porous Media, p. 54 (Bologna, Italy, 2006); published in Magn. Reson. Imag. **25**, 559 (2007).
2. D. S. Grebenkov, G. Guillot, *NMR of diffusion in porous media: branched or disordered structure?*, Proceedings of the 8th International Bologna Conference on Magnetic Resonance in Porous Media, p. 55 (Bologna, Italy, 2006); published in Magn. Reson. Imag. **25**, 560 (2007).
3. D. Habib, D. S. Grebenkov, G. Guillot, *Probing a model pulmonary acinus by NMR gas diffusion*, Proceedings of the 8th International Bologna Conference on Magnetic Resonance in Porous Media, p. 55 (Bologna, Italy, 2006); published in Magn. Reson. Imag. **25**, 560 (2007).
4. D. S. Grebenkov, G. Guillot, *Localization regime of restricted diffusion in a model pulmonary acinus*, Proceedings of the Fourteenth ISMRM Meeting, # 1624 (Seattle, USA, 2006).
5. D. Habib, D. S. Grebenkov, X. Maître, L. De Rochefort, E. Durand, G. Guillot, *Experimental study of gas diffusion in a pulmonary acinus model*, Proceedings of the Fourteenth ISMRM Meeting, # 1323 (Seattle, USA, 2006).
6. D. S. Grebenkov, G. Guillot, *Numerical MRI of the translational diffusion in branching three-dimensional labyrinths of a model pulmonary acinus*, Proceedings of the 22th Annual Meeting of ESMRMB, # 219 (Basle, Switzerland, 2005); published in MAGMA **18**, S128 (2005).
7. D. S. Grebenkov, E. Chassaing, M. Filoche, B. Sapoval, *Rôle de l'irrégularité géométrique d'une électrode : approche théorique et vérification expérimentale*, Proceedings of the 17th Forum of Electrochemical Impedances, pp. 183-192 (Paris, France, 2005).
8. D. S. Grebenkov, *Numerical Study of the Multifractal Properties of the Harmonic Measure on a Cubic Koch Surface*, in Proceedings of Europhysics Conference on Computational Physics (ed. by G. Ciccotti), p. 121 (Genoa, Italy, 2004).
9. D. S. Grebenkov, *Approximate Distribution of Hitting Probabilities for a Regular Surface with Compact Support in 2D*, Proceedings of the European Summer School 2001 "Asymptotic Combinatorics with Application to Mathematical Physics", 221-242 (Saint Petersburg, Russia, 2002).

- *SUBMITTED PAPERS*

1. M. Filoche, D. S. Grebenkov, J. S. Andrade Jr., B. Sapoval, *The Role of Geometry in the Passivation of Irregular Surfaces Accessed by Diffusion*, Proc. Natl. Acad. Sci. (submitted)
2. D. S. Grebenkov, *Residence times and other functionals of the reflected Brownian motion*, Phys. Rev. E (submitted)
3. D. Habib, D. S. Grebenkov, G. Guillot, *Gas diffusion in a pulmonary acinus model: experiments with hyperpolarized helium-3*, J. Magn. Reson. (submitted)
4. D. S. Grebenkov, *Multiple Correlation Function Approach: Rigorous Results for Simple Geometries*, Diff. Fundam. (submitted)
5. M. Filoche, D. S. Grebenkov, *The toposcropy: how to characterize the transfer properties of an irregular interface by its geometrical harmonic spectrum*, Eur. Phys. J. B (submitted)

- *INTERNATIONAL CONFERENCES*

1. D. S. Grebenkov, *Diffusion-Reaction in Branched Structures: Theory and Application to the Lung Acinus*, Conference on Practical Applications of Fractals, Trieste, Italy, 2004.
2. D. S. Grebenkov, *Diffusive Transport towards Irregular Interfaces: from Numerical Simulations to Experimental Studies*, Conference on Physics Survey of Irregular Systems, Fortaleza, Brazil, 2004.
3. A. P. Grinin, D. S. Grebenkov, *Time Evolution of Ensembles of Molecular Aggregates in a Micellar Solution after an Instantaneous Change of the Thermodynamic Parameters*, VII Research Workshop “Nucleation Theory and Applications”, Dubna, Russia, 2003.
4. D. S. Grebenkov, *Study of the Brownian Self-Transport Operator*, TMR Network Meeting “Fractal Structures and Self-Organization”, Anacapri, Italy, 2002.

- *LOCAL CONFERENCES*

1. D. S. Grebenkov, *Modélisation de la diffusion restreinte dans un labyrinthe tridimensionnel de l'acinus pulmonaire*, 11ème Journées Simulation Numérique, Paris, France, 2005.
2. D. S. Grebenkov, *Diffusion-réaction sur des structures arborescentes : théorie et applications*, 25ème Rencontre de Physique Statistique, Paris, France, 2005.
3. D. S. Grebenkov, *Etude numérique des propriétés multifractales de la mesure harmonique sur une surface de Koch*, 10ème Journées simulation numérique, matière condensée et désordre, interface simulation-expérience, Paris, France, 2004.
4. D. S. Grebenkov, *Phénomènes de transport laplacien : approches théoriques et numériques*, 24ème Rencontre de Physique Statistique, Paris, France, 2004.