Dmitry J. Nicolsky

Geophysical Institute,
University of Alaska Fairbanks,
900 Yukon Drive, Fairbanks, AK 99775
USA

ftdjn@uaf.edu
http://pf2.net.gi.alaska.edu
Phone: (907) 474-7397
Fax: (907) 474-5163

Occupation

Numerical Modeler,
University of Alaska Fairbanks, Fairbanks, AK, USA.

Education

Ph.D., Interdisciplinary in Geophysics, December 2007,
University of Alaska Fairbanks, Fairbanks, AK, USA.

M.S., Mathematics, Summa Cum Laude, August 2003,
University of Alaska Fairbanks, Fairbanks, AK, USA.

B.S., Physics, Summa Cum Laude, May 2000,
St. Petersburg State University, St. Petersburg, Russia.

Professional Experience

Research Professional — **University of Alaska Fairbanks**
Geophysical Institute — **Fairbanks, AK, USA**
2008-present

Development and numerical implementation of geophysical models.

Research Assistant — **University of Alaska Fairbanks**
Geophysical Institute — **Fairbanks, AK, USA**
2002-2007

Development and numerical implementation of a thermo-mechanical model of freezing soil. Under supervision of Professor V. Romanovsky.

Research Assistant — **St. Petersburg State University**
Department of Physics — **St. Petersburg, Russia**
1999–2000

Calculation of elementary collision process characteristics and possibilities of radiation transitions between terms in atoms. Under supervisor of Professor: A. Chirtsov.

Research Interests

- Understanding and modeling of coupled ground-atmosphere-ocean processes.
- Thermodynamics of irreversible processes and evolution of ecosystems.
- Numerical solution of partial differential equations appearing in geoscience.

Awards

- Scholarship, Physics Department, St.Petersburg State University, 1997-2000.
- Scholarship, Military Science Department, St Petersburg State University, 2000.
- Scholarship, Open Society Institute & the Soros foundations network, 1998-2000.
- Individual grant, Government of St Petersburg and Russian Ministry of Education, 2000.
- Global Change Student Grant, University of Alaska Fairbanks, 2006.

Peer-review Publications

Books

Abutin, M.B., A.S. Chirtsov, I.M. Grigoriev, K.P. Kolinko, D.J. Nicolsky, *Physics: model experiment reality. V.1: Gravity, development of views from Newton to Einstain*, St. Petersburg State University Press, 2001, F50, BBK 22.3 721, ISBN 5-288-02895-8, 450p. (in Russian).

Articles in referred journals

Grigoriev I.M., A.S. Chirtsov, K.P. Kolinko and D.J. Nicolsky, *Information technologies in physics education. Usage of network technologies*, Computer instruments in education, Saint-Petersburg, (6), 23-27, November-December, 1999 (in Russian).

Nicolsky, D.J. and A.S. Chirtsov, *Virtual physical reality: computer simulations in the high school course of mechanics.*, Computer instruments in education, St-Petersburg, (6), 42-47, November-December, 2000 (in Russian).

Nicolsky, D.J., V.E. Romanovsky, V.A. Alexeev, and D.M. Lawrence*Improved modeling of permafrost dynamics in a GCM land-surface scheme*, Geophysical Research Letters, 34(8): L08501, 2007

Alexeev, V.A., D.J. Nicolsky, V.E. Romanovsky, D.M. Lawrence *An evaluation of deep soil configurations in the CLM3 for improved representation of permafrost*, Geophysical Research Letters, 34(9): L09502, 2007

Nicolsky, D.J., V.E. Romanovsky and G.S. Tipenko *Using in-situ temperature measurements to estimate saturated soil thermal properties by solving a sequence of optimization problems*, The Cryosphere, 1(1): 41-58, 2007

D.M. Lawrence, A.G. Slater, V.E. Romanovsky and D.J. Nicolsky *The sensitivity of a model projection of near-surface permafrost degradation to soil column depth and representation of soil organic matter*, Journal of Geophysical Research - Earth Surface, 113, F02011, doi:10.1029/2007JF000883, 2008

Nicolsky, D.J., V.E. Romanovsky, G.S. Tipenko and D.A. Walker, *Modeling biogeophysical interactions in non-sorted circles in the Low Arctic*, Journal of Geophysical Research - Biogeoscience, 113, G03S05, doi:10.1029/2007JG000565, 2008

D.A. Walker, H.E. Epstein, V. E. Romanovsky, C.L. Ping, G.J. Michaelson, R.P. Daanen, Y. Shur, R.A. Peterson, W.B. Krantz, M.K. Raynolds, W.A. Gould, G. Gonzalez, D.J. Nicolsky, C.M. Vonlanthen, A.N. Kade, P. Kuss, A.M. Kelley, C.A. Munger, C.T. Tarnocai, N.V. Matveyeva and F. J. A. Daniels, Arctic patterned-ground ecosystems: A synthesis of field studies and models along a North American Arctic Transect, J. Geophys. Res., 113, G03S01, doi:10.1029/2007JG000504, 2008

Nicolsky, D.J., V.E. Romanovsky and G.G. Panteleev *Estimation of soil thermal properties using in-situ temperature measurements in the active layer and permafrost*, Cold Regions Science and Technology Journal, 55, pp. 120-129, doi:10.1016/j.coldregions.2008.03.003, 2009

Accepted papers

S.A. Avdonin, A.S. Bulanova and D.J. Nicolsky *Boundary Control approach to the spectral estimation problem. The case of simple poles*, Journal of Sampling Theory in Signal and Image Processing.

Recent Collaborators

D.M. Lawrence, M. Rawlins, S.M. Marchenko, G.S. Tipenko, G. Panteleev.