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AGM LABORATORY RESEARCH INSTITUTE IN ANALYSIS, GEOMETRY AND MODELIZATION

Currently he is Professor of Mathematics at the Pennsylvania State University. He is currently developing methods for non-linear elliptic and for evolution equations. He is especially interested in applications to Physics, Quantum Mechanics, Fluid dynamics, Finance, Quantum Chemistry, and other areas outside Mathematics. He is also interested and has worked on Pseudodifferential operators, Operator Algebras, Analysis on singular spaces, and Non-commutative Geometry. His current research builds in part on his earlier work.

CURRENT RESEARCH INTERESTS

- His current research interests are Numerical methods for Partial Differential Equations, Analysis and Partial Differential Equations (PDEs) on singular and non-compact spaces, Operator Algebras and Noncommutative Geometry, Mathematical Physics, Mathematical Finance, and Geometric Analysis. His recent work is devoted Numerical methods for Partial Differential Equations, more specifically to “Finite element methods for elliptic differential equations on polyhedral domains,” to the “Generalized Finite Element method,” to “Numerical methods for differential operators with singular coefficients” (especially Schrödinger type operators), and to “Numerical methods for degenerate parabolic equations” (which usually arise in Stochastic calculus).

EDUCATION

- Ph. D., University of California, Berkeley, 1990-91.
- M. A., University of Bucharest, Romania, 1985-86.
- B. A., University of Bucharest, Romania, 1981-85.
- High School: Mathematical-Physics #1, specializing in Computer Science, 1976-80.

LAST PUBLICATIONS (March 2013 – 83 publications)

- B. Monthubert and V. Nistor, The K-Groups and the Index Theory of certain comparison C^* -algebras, *Noncommutative geometry and global analysis*, 213–224, Contemp. Math., 546, Amer. Math. Soc., Providence, RI, 2011.
- W. Cheng, N. Costanzion, J. Liechty, A. Mazzucato, V. Nistor, *Closed-form asymptotics and numerical approximations of 1D parabolic equations with applications to option pricing*, SIAM J. Fin. Math. 2011
- B. Monthubert and V. Nistor, *A topological index theorem for manifolds with corners*, Compositio Math. 2011.
- Q. Yu and V. Nistor, *Single and double layer potentials on domains with conical points I: Straight cones*, Integral Equations and Operator Theory, 2012.
- B. Ammann, C. Carvalho, and V. Nistor, *Regularity for eigenfunctions of Schrödinger operators*, Letters in Mathematical Physics 101, 49-98 (2012).
- Hengguang Li, E. Hunsicker, V. Nistor, and V. Uski, *Analysis of Schrödinger operators with inverse square potentials I: regularity results in 3D*, Bull. Math. Soc. Sci. Math. Roumanie (N.S.) 55, 157–178 (2012).