Departmental List of Publications for the Year 2007

[1] Areeg Abdalla and James Buckley. Monte Carlo methods in fuzzy game theory. *New Math. Nat. Comput.*, 3(2):259–269, 2007.

[2] Gerardo Acosta, Peyman Eslami, and Lex G. Oversteegen. On open maps between dendrites. *Houston J. Math.*, 33(3):753–770, 2007.

[3] Felipe Barra, Nikolai Chernov, and Thomas Gilbert. Log-periodic drift oscillations in self-similar billiards. *Nonlinearity*, 20(11):2539–2549, 2007.

[4] Jean V. Bellissard, Peter D. Hislop, and Günter Stolz. Correlation estimates in the Anderson model. *J. Stat. Phys.*, 129(4):649–662, 2007.

[5] Alexander Blokh, Michał Misiurewicz, and Lex Oversteegen. Planar finitely Suslinian compacta. *Proc. Amer. Math. Soc.*, 135(11):3755–3764 (electronic), 2007.

[6] Hakim Boumaza and Günter Stolz. Positivity of Lyapunov exponents for Anderson-type models on two coupled strings. *Electron. J. Differential Equations*, pages No. 47, 18 pp. (electronic), 2007.

[7] James J. Buckley and Esfandiar Eslami. Pricing forwards/futures and swaps using fuzzy sets. *Adv. Fuzzy Sets Syst.*, 2(2):143–163, 2007.

[8] N. Chernov. On the convergence of fitting algorithms in computer vision. *J. Math. Imaging Vision*, 27(3):231–239, 2007.

[9] N. Chernov. A stretched exponential bound on time correlations for billiard flows. *J. Stat. Phys.*, 127(1):21–50, 2007.

[10] N. Chernov and D. Dolgopyat. Diffusive motion and recurrence on an idealized galton board. *Physics Review Letters*, 99(030601), 2007.

[11] N. Chernov and R. Markarian. Dispersing billiards with cusps: slow decay of correlations. *Comm. Math. Phys.*, 270(3):727–758, 2007.

[12] N. Chernov and H.-K. Zhang. Regularity of Bunimovich's stadia. *Regul. Chaotic Dyn.*, 12(3):335–356, 2007.

[13] Nikolai Chernov and Nandor Simányi. Flow-invariant hypersurfaces in semi-dispersing billiards. *Ann. Henri Poincaré*, 8(3):475–483, 2007.

[14] Douglas K. Childers. Wandering polygons and recurrent critical leaves. *Ergodic Theory Dynam. Systems*, 27(1):87–107, 2007.

[15] R. Cochran, J. Mayer, and B. Mullins. The impact of inquiry-based mathematics courses on content knowledge and classroom practice. In *Electronic proceedings of the 2007 SIGMAA conference on Research in Undergraduate Mathematics Education*, 2007.

[16] David Damanik and Serguei Naboko. Unbounded Jacobi matrices at critical coupling. *J. Approx. Theory*, 145(2):221–236, 2007.

[17] Rupert L. Frank, Christian Hainzl, Serguei Naboko, and Robert Seiringer. The critical temperature for the BCS equation at weak coupling. *J. Geom. Anal.*, 17(4):559–567, 2007.

[18] Rupert L. Frank and Roman G. Shterenberg. On the spectrum of partially periodic operators. In *Operator theory, analysis and mathematical physics*, volume 174 of *Oper. Theory Adv. Appl.*, pages 35–50. Birkhäuser, Basel, 2007.

[19] Marta García-Huidobro, Raul Manásevich, and James R. Ward. Vector p-Laplacian like operators, pseudo-eigenvalues, and bifurcation. *Discrete Contin. Dyn. Syst.*, 19(2):299–321, 2007.

[20] C. Hainzl, M. Lewin, E. Sere, and J. P. Solovej. A minimization method for relativistic electrons in a mean-field approximation of quantum electrodynamics. *Phys. Rev. A*, 76(052104), 2007.

[21] Christian Hainzl, Mathieu Lewin, and Jan Philip Solovej. The mean-field approximation in quantum electrodynamics: the no-photon case. *Comm. Pure Appl. Math.*, 60(4):546–596, 2007.

[22] Eman Hamza and Günter Stolz. Lyapunov exponents for unitary Anderson models. *J. Math. Phys.*, 48(4):043301, 16, 2007.

[23] Leonard J. Jowers, James J. Buckley, and Kevin D. Reilly. Simulating continuous fuzzy systems. *Inform. Sci.*, 177(2):436–448, 2007.

[24] Yulia Karpeshina and Young-Ran Lee. Spectral properties of polyharmonic operators with limit-periodic potential in dimension two. *J. Anal. Math.*, 102:225–310, 2007.

[25] Ian Knowles, Michael Teubner, Aimin Yan, Paul Rasser, and Jong Wook Lee. Inverse groundwater modelling in the willunga basin, south australia. *Hydrogeology Journal*, 15(6):1107–1118, 2007.

[26] Ian Knowles and Aimin Yan. The reconstruction of groundwater parameters from head data in an unconfined aquifer. *J. Comput. Appl. Math.*, 208(1):72–81, 2007.

[27] Pavel Kurasov and Serguei Naboko. Wigner-von Neumann perturbations of a periodic potential: spectral singularities in bands. *Math. Proc. Cambridge Philos. Soc.*, 142(1):161–183, 2007.

[28] A. Laptev, R. Shterenberg, and V. Sukhanov. Inverse spectral problems for Schrödinger operators with energy depending potentials. In *Probability and mathematical physics*, volume 42 of *CRM Proc. Lecture Notes*, pages 341–351. Amer. Math. Soc., Providence, RI, 2007.

[29] Yan Yan Li and Lei Zhang. Compactness of solutions to the Yamabe problem. III. *J. Funct. Anal.*, 245(2):438–474, 2007.

[30] Marco Marletta and Rudi Weikard. Stability for the inverse resonance problem for a Jacobi operator with complex potential. *Inverse Problems*, 23(4):1677–1688, 2007.

[31] Oleg Safronov and Gunter Stolz. Absolutely continuous spectrum of Schrödinger operators with potentials slowly decaying inside a cone. *J. Math. Anal. Appl.*, 326(1):192–208, 2007.

[32] James R. Ward, Jr. Existence, multiplicity, and bifurcation in systems of ordinary differential equations. In *Proceedings of the Sixth Mississippi State–UBA Conference on Differential Equations and Computational Simulations*, volume 15 of *Electron. J. Differ. Equ. Conf.*, pages 399–415, San Marcos, TX, 2007. Southwest Texas State Univ.

[33] Lei Zhang. Harnack type inequalities for conformal scalar curvature equation. *Math. Ann.*, 339(1):195–220, 2007.

[34] Henghui Zou. Existence and non-existence for strongly coupled quasi-linear cooperative elliptic systems. *J. Math. Soc. Japan*, 59(2):393–421, 2007.