

PIMS 2012 Publications

Below we list publications for PIMS CRG activities, PDFs and CNRS Researchers. Only publications dated 2012 are listed.

1. Abdallah, N.B., Mellet A. and Puel, M. Anomalous diffusion limit for kinetic equations with degenerate collision frequency. *Mathematical Models and Methods in Applied Sciences* Vol. 21, No. 11, pp. 2249-2262 (2012)
2. Adams, M. A flexible Incremental/decremental Delaunay mesh-generation framework for image representation, To appear in *Signal Processing*, (2012)
3. Adams, M. and Tu, X. Improved mesh models of images through the explicit representation of discontinuities, submitted to *IEEE Canadian Journal of Electrical and Computer Engineering* (2012)
4. Adams, M. and Li, P. An effective mesh-generation strategy for image representation using data-dependent triangulation. Submitted to *IEEE Transactions on Image Processing* (2012)
5. Adcock, B. and Hansen, A.C. A generalized sampling theorem for stable reconstructions in arbitrary bases. *J. Fourier Anal. Appl.* 18(4), pp 685-716 (2012)
6. Adcock, B. and Hansen, A.C. Stable reconstructions in Hilbert spaces and the resolution of the Gibbs phenomenon. *Appl. Comput. Harm. Anal.* Vol. 32 357-388
7. Adcock, B. and Huybrechs, D. On the resolution power of Fourier extensions for oscillatory functions. Submitted to *J. Comput. Phys.* (2012)
8. Adem, A. and Gómez, J. Equivariant K-theory for Lie Group Actions with Maximal Rank Isotropy. *Journal of Topology*, Vol. 5, No. 2, pp. 431-457 (2012)
9. Adem, A. and Gómez, J. On the Structure of Spaces of Commuting Elements in Compact Lie Groups. To appear in *Proceedings Configuration Spaces 2010, Centro De Girogi* (Birkhauser). *arXiv*: 1203.5439v1 (2012)
10. Agarwal, R., Berezansky, L., Braverman, E. and Domoshnitsky, A. *Nonoscillation Theory of Functional Differential Equations with Applications*, Springer, New York, (2012)
11. Agueh, M., Khouider, B. and Saumier, L. Optimal transport for particle image velocimetry, submitted (2012)
12. Agueh M. and Bowles, M. One dimensional numerical algorithms for gradient flows in the p-Wasserstein space. *Acta Appl. Math.* (2012)
13. Agueh, M., Illner, R. and Sospedra-Alfonso, R. Global classical solutions of the relativistic Vlasov-Darwin system with small Cauchy data: the generalized variables approach, *Arch. Ration. Mech. Anal* 205, pp. 827-869 (2012)
14. Agueh, M. and Sospedra-Alfonso, R. Uniqueness of the compactly supported weak solutions of the relativistic Vlasov-Darwin system. *Acta Appl. Math.* (2012)
15. Ahmadi, B., Alinaghypour, F., Fallat, S., Fan, Y., Meagher, K. and Nasserassr, S. The minimum rank of universal adjacency matrices. *S. Linear Algebra and Its Applications*, vol. 437 issue 8, pp. 2064-2076, (2012).
16. Aholt, C., Sturmfels, B. and Thomas, R. A Hilbert scheme in computer vision. *Canadian Journal of Mathematics*, in press (2012)
17. Akbary-Majdabadno, A. and Ghioca, D. A geometric variant of Titchmarsh divisor problem. *International Journal of Number Theory*, 8 (1), pp. 53-69 (2012)
18. Akbary-Majdabadno, A. and Fodden, B. Lower bounds for power moments of L-functions. *Acta Arithmetica*, 151, pp 11-38 (2012)
19. Akhunov, T. Local well posedness of quasi-linear systems generalizing KdV. *Communications on Pure and Applied Anal.* 12, no. 2, pp. 899-921 (2012)
20. Akhunov, T. A sharp condition for the well-posedness of the linear KdV-type equation. Submitted to *Proceedings of the AMS*, *arXiv*: 1209.1658. (2012)
21. Akhunov, T. Local well posedness of higher order dispersive systems in one dimension. In preparation, (2012).
22. Akin, V., Johnson, C. and Nasserassr, S. TPK completion of patterns with one

- unspecified entry. Submitted to the *Electronic Journal of Linear Algebra*, (2012).
23. Alimadad, A., Matteson, C., Hare, W., Karanfil, O. and Finegood, D. A novel algorithm for describing population level trends in body weight. *Health*, in press (2012)
 24. Allali, J. et al. BRASERO: A resource for benchmarking RNA secondary structure comparison algorithms. *Advances in Bioinformatics* (2012)
 25. Angel, O., Benjamini, I., Gurel-Gurevich, O., Meyerovitch, T. and Peled, R. Stationary map coloring. *Annales de l'Institut Henri Poincaré Probab. Statist.* Volume 48, pp. 327-342, (2012)
 26. Angot, P., Keating, J. and Mineev, P. A Direction Splitting Algorithm for Incompressible Flow in Complex Geometries. *Comp. Meth. Appl. Mech. Engng.* Vol. 217, pp. 111-120, (2012)
 27. Anton, C. Deng, J. and Wong, Y. Hopf bifurcation analysis of an aeroelastic model using stochastic normal form, *Journal of Sound and Vibration*, Vol. 331, pp. 3866-3886, (2012)
 28. Anton, C. Deng, J. and Wong, Y. Symplectic numerical schemes for stochastic Hamiltonian equations. *Proceedings of the Fifth Conference on Numerical Analysis and Applications*, Bulgaria. (2012).
 29. Aravkin, A., Friedlander, M. and van Leeuwen, T. Robust inversion via semistochastic dimensionality reduction. *Proc. IEEE Trans. Acoustics, Speech, and Signal Processing* (2012)
 30. Aravkin, A., Friedlander, M., Herrmann, F, and van Leeuwen, T. Robust inversion, dimensionality reduction, and randomized sampling. *Mathematical Programming*, 134, pp. 101-125, (2012)
 31. Aravkin, A., Burke, J., Chiuso, A. and Pillonetto, G. On the MSE properties of empirical Bayes methods for sparse estimation, *IFAC Systems Identification*, 16(1), (2012)
 32. Aravkin, A., Burke, J. and Pillonetto, G. Robust and trend following Kalman smoothers using Student's t, *IFAC Systems Identification*, 16(1), (2012)
 33. Aravkin, A., Burke, J. and Pillonetto, G. A statistical and computational theory for robust and sparse Kalman smoothing, *IFAC Systems Identification*, 16(1), (2012)
 34. Aravkin, A., Burke, J., Pillonetto, G. Optimization viewpoint on Kalman smoothing, with applications to robust and sparse estimation, submitted (2012)
 35. Aravkin, A., Burke, J. and Pillonetto, G. Sparse/Robust Estimation and Kalman Smoothing with Nonsmooth Log-Concave Densities: Modeling, Computation, and Theory, submitted to *J. Machine Learning Res.*, (2012)
 36. Aravkin, A., Burke, J., Chiuso, A. and Pillonetto, G. Convex vs nonconvex approaches for sparse estimation: GLasso, Multiple Kernel Learning and Hyperparameter Glasso, submitted (2012)
 37. Aravkin, A. and Burke, J. Smoothing Dynamic Systems with State-Dependent Covariance Matrices, submitted to *NIPS 2012*, Lake Tahoe, December 2012.
 38. Aravkin, A., Burke, J., Chiuso, A. and Pillonetto, G. On the estimation of hyper parameters for empirical Bayes estimators: maximum marginal likelihood vs. minimum MSE, *IFAC Systems Identification*, 16(1), (2012)
 39. Aravkin, A., Burke, J. and Pillonetto, G. Nonsmooth regression and state estimation using piecewise quadratic log-concave densities. To appear in the *Proceedings of the 51st IEEE Conference on Decision and Control*, Maui, December 2012.
 40. Argerami, M., Farenick, D. and Massey, P. Injective envelopes and local multiplier algebras of some spatial continuous trace C^* -algebras. *Quarterly Journal of Mathematics (Oxford)*, 63, pp. 1-20, (2012)
 41. Ashander, J., Krkosek, M. and Lewis, M. Aquaculture-induced changes to dynamics of migratory hosts and specialist parasite: A case study of pink salmon and sea lice. *Theoretical Ecology*, 5, pp. 231-252, (2012)
 42. Asimit, A., Badescu, A., Siu, T. and Zinchenko, Y. Capital requirements and optimal investment with solvency probability constraints, submitted (2012)
 43. Bauschke, H. New demiclosedness principles for (firmly) nonexpansive operators. *Computational and Analytical Mathematics*, in press (2012)

44. Bauschke, H., Borwein, J., Wang, X. and Yao, L. Construction of pathological maximally monotone operators on non-reflexive Banach spaces, *Set-Valued and Variational Analysis* 20, pp. 387–415 (2012)
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48. Bauschke, H., Martin-Marquez, V., Moffat, S. and Wang, X. Compositions and convex combinations of asymptotically regular firmly non expansive mappings are also asymptotically regular, *Fixed Point Theory and Applications* (2012)
49. Bauschke, H., Borwein, J., Wang, X. and Yao, L. Monotone operators and “bigger conjugate” functions. *Journal of Convex Analysis*, in press (2012)
50. Bauschke, H., Sarada, J. and Wang, X. On moving averages. Submitted to *Journal of Convex Analysis*, *arXiv*: 1206.3610 (2012)
51. Bauschke, H., Moffat, S. and Wang, X. Firmly non expansive mappings and maximally monotone operators: correspondence and duality, *Set-Valued and Variational Analysis* 20, pp. 131–153, (2012)
52. Bauschke, H., Borwein, J., Wang, X. and Yao, L. Every maximally monotone operator of Fitzpatrick-Phelps type is actually of dense type. *Optimization Letters*, in press (2012)
53. Bauschke, H., Moffat, S. and Wang, X. Near convexity, near equality, sums of maximally monotone operators, and averages of firmly nonexpansive mappings. *Mathematical Programming*, in press (2012)
54. Bauschke, H., Wang, X. and Yao, L. Rectangularity and paramonotonicity of maximally monotone operators. *Optimization*, in press (2012)
55. Bauschke, H., Wang, X. and Wylie C.J. Fixed points of averages of resolvents: geometry and algorithms, *SIAM Journal on Optimization* 22, pp. 24–40, (2012)
56. Bauschke, H., Chen, J. and Wang, X. A projection method for approximating fixed points of quasi nonexpansive mappings without the usual demiclosedness condition. Submitted to *Journal of Nonlinear and Convex Analysis*. *arXiv*: 1211.1639 (2012)
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58. Bell, J., Bruin, N and Coons, M. Transcendence of generating functions whose coefficients are multiplicative. *Trans. Amer. Math. Soc.* 364, pp. 933-959 (2012)
59. Benedetto, R., Ghioca, D., Hutz, B., Kurlberg, P., Scanlon, T. and Tucker, T. Periods of rational maps modulo primes. To appear in *Mathematische Annalen*. (2012)
60. Benedetto, R., Ghioca, D., Kurlberg, P. and Tucker, T. A case of the dynamical Mordell-Lang conjecture. *Math. Ann.*, Vol. 352, pp. 1-26 (2012)
61. Bennett, M. A superelliptic equation involving alternating sums of powers. To appear in *Publ. Math. Debrecen*. (2012)
62. Bennett, M. and Bugeaud, Y. Effective results for restricted rational approximation to quadratic numbers. Submitted (2012)
63. Bennett, M. and Chen, I. Multi-Frey Q-curves and the Diophantine equation $a^2 + b^6 = c^n$. To appear in *Algebra and Number Theory*. (2012)
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66. Bennett, M. and Dahmen, S. Level Lowering Modulo Prime Powers and Generalized Fermat Equations. To appear in *Canad. J. Math*. (2012)
67. Bennett, M. and Van Luijk, R. Squares from blocks of consecutive integers : a problem of Erdos and Graham. To appear in *Indagationes Math*. (2012)

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70. Bennett, M., Bugeaud, Y. and Mignotte, M. Perfect powers with few binary digits and related Diophantine problems II. Submitted (2012)
71. Bennett, M., Bugeaud, Y. and Mignotte, M. Perfect powers with few binary digits and related Diophantine problems. To appear in *Annali della Scuola Normale Superiore di Pisa.* (2012)
72. Bennett, M., Chen, I., Dahmen, S. and Yazdani, S. Generalized Fermat equations: a miscellany. Submitted (2012)
73. Bertoin, J. and Miermont, G. The cut-tree of large Galton-Watson trees and the Brownian CRT, to appear in *Ann. Appl. Probab., arXiv: 1201.4081.* (2012)
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75. Berenbrink, P., Cooper, C., Friedetzky, T., Friedrich, T. and Sauerwald, T. Randomized diffusion for indivisible loads. To appear in *Proc. 22nd ACM-SLAM Symposium on Discrete Algorithms.* (2012), 429-439.
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81. Bigdeli, K., Hare, W. and Tesfamariam, S. Optimal design of viscous damper connectors for adjacent structures using genetic algorithm and nelder-mead algorithm. In *Proceeding of SPIE conference on Smart Structures and Materials*, (2012)
82. Bigdeli, K., Hare, W., Nutini, J. and Tesfamariam, S. Optimal design of damper connectors for adjacent buildings. Submitted to *Eng. Opt.* (2012)
83. Bigdeli, K., Hare, W. and Tesfamariam, S. Configuration optimization of dampers for adjacent buildings under seismic excitations. *Eng. Opt.*, in press (2012)
84. Boussaïd, N., Caponigro, M., Chambrion, T. Periodic control laws for bilinear quantum systems with discrete spectrum, *Proceedings of the 2012 American Control Conference*, Montreal, Canada (2012).
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88. Boussaïd, N., Caponigro, M., Chambrion, T. Which notion of energy for bilinear quantum systems?, *Proceedings of the 4th IFAC Workshop on Lagrangian and Hamiltonian Methods for Non Linear Control*, Bertinoro, Italy (2012).
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93. Braverman, E. and Liz, E. On stabilization of equilibria using predictive control with and without pulses, *Computers & Mathematics with Applications*, Vol. 64, pp. 2192-2201 (2012)
94. Braverman, E. and Rodkina, A. On difference equations with asymptotically stable 2-cycles perturbed by a decaying noise, *Computers & Mathematics with Applications*, Vol. 64, pp. 2224-2232, (2012)
95. Berezansky, L., Braverman, E. and Idels, L. The Mackey-Glass model of respiratory dynamics: review and new results, *Nonlinear Analysis TMA*, Vol. 75, pp. 6034-6052 (2012)
97. Braverman, E. and Karpuz, B. Uniform exponential stability of first-order dynamic equations with several delays, *Appl. Math. Comput.*, Vol. 218, pp. 10468-10485 (2012)
98. Braverman, E. and Karpuz, B. On monotonicity of nonoscillation properties of dynamic equations in time scales, *Zeitschrift für Analysis und ihre Anwendungen*, Vol. 31, pp. 203-216 (2012)
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101. Braverman, E. and Liz, B. Global stabilization of periodic orbits using a proportional feedback control with pulses, *Nonlinear Dynamics*, Vol. 67, pp. 2467-2475 (2012)
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