



PIMS



2013 PIMS Publications

PIMS 2013 Publications

Below we list publications for PIMS CRG activities, PDFs and CNRS Researchers. Only publications dated 2013 are listed.

1. M. Adams, A flexible incremental/decremental Delaunay Mesh-Generation Framework for image representation, *Signal Processing*, Vol. 93, pp. 749-764 (2013)
2. M. Adams, An improved progressive lossy-to-lossless coding method for arbitrarily sampled image data, to appear in *Proc. IEEE Pacific Rim Conference on Communications, Computers, and Signal Processing* (2013)
3. M. Adams, Multiresolution signal and geometry processing: filter banks, wavelets, and subdivision, *University of Victoria Press*, xxxviii + 538 pages (2013)
4. M. Adcock, P. Høyer, and B. C. Sanders, Gaussian quantum computation with oracle-decision problems, *Quantum Information Processing*, Vol. 12, pp. 1759-1779 (2013)
5. A. Adem, F.R. Cohen, and J. M. Gomez, Commuting elements in central products of special unitary groups, *Proc. Edinburgh Math. Soc. (Series 2)*, Vol. 56, pp. 1-12 (2013)
6. M. Agueh and M. Bowles, One dimensional numerical algorithms for gradient flows in the p-Wasserstein space, *Acta Appl. Math.*, Vol. 125 pp. 121-134 (2013)
7. M. Agueh and R. Sospedra-Alfonso, Uniqueness of the compactly supported weak solutions of the relativistic Vlasov-Darwin system, *Acta Appl. Math.*, Vol. 124, pp. 207-227 (2013)
8. M. Agueh and R. Sospedra-Alfonso, Uniqueness of the compactly supported weak solutions of the relativistic Vlasov-Darwin system, *Acta Appl. Math.* Vol. 124, pp. 207-227 (2013)
9. M. Agueh, B. Khouider, and L.P. Saumier, An efficient numerical algorithm for the L^2 optimal transport problem with periodic densities, to appear in *IMA Journal of Applied Mathematics* (2013)
10. M. Agueh, B. Khouider, and L.P. Saumier, Optimal transport for particle image velocimetry, preprint (2013)
11. C. Aholt, R. Thomas, and B. Sturmfels, A Hilbert scheme in computer vision, *Canadian Journal of Mathematics* Vol. 65, no. 5, pp. 961-988 (2013)
12. T. Akhunov, Local well-posedness of quasi-linear systems generalizing kdv, to appear in *Commun. Pure Appl. Anal.* (2013)
13. B. Alipanahi, N. Krislock, A. Ghodsi, H. Wolkowicz, L. Donaldson, and M. Li, Determining protein structures from NOESY distance constraints by semidefinite programming, *Journal of Computational Biology*, Vol. 20, pp. 296-310 (2013)
14. L. An and J.J. Ye, Necessary optimality conditions for optimal control problems with a geometric constraint, submitted to *SIAM Journal on Control and Optimization* (2013)
15. A. Aravkin, J. Burke, and G. Pillonetto, Optimization viewpoint on Kalman smoothing, with applications to robust and sparse estimation, to appear in *Compressed Sensing & Sparse Filtering* (2013)
16. Y. Aravkin, J. Burke, and M. P. Friedlander, Variational properties of value functions, to appear in *SIAM Journal on Optimization* (2013)
17. V. Asimit, A. Badescu, T.K. Siu, and Y. Zinchenko, Capital requirements and optimal investment with solvency probability constraints, submitted to *IMA Journal of Management Mathematics* (2013)
18. D. Bailey, H.H. Bauschke, P. Borwein, F. Garvan, M. Th´era, J. Vanderwerff, and H. Wolkowicz (editors), to appear in *Computational and Analytical Mathematics* (2013)
19. M. Ballard, D. Deliu, D. Favero, M. U. Isik, and L. Katzarkov, Homological Projective Duality via Variation of Geometric Invariant Theory Quotients, submitted (2013)
20. M. Ballard, D. Favero, and L. Katzarkov, A category of kernels for equivariant factorizations, II: further implications, submitted (2013)
21. C. Bardos, L. Szekelyhidi, Jr., and E. Wiedemann, Non-uniqueness for the Euler equations: The effect of the boundary, submitted (2013)
22. H. Bauschke and D. Noll, On cluster points of alternating projections, submitted to *Serdica Mathematical Journal* (2013)
23. H. Bauschke and V.R. Koch, Projection methods: Swiss Army knives for solving feasibility and best approximation problems with halfspaces, to appear in *Infinite Products and Their Applications* (2013)

24. H. Bauschke, D.R. Luke, H.M. Phan, and X. Wang, Restricted normal cones and the method of alternating projections: theory, *Set-Valued and Variational Analysis*, Vol. 21, pp. 431-473 (2013)
25. H. Bauschke, D.R. Luke, H.M. Phan, and X. Wang, Restricted normal cones and the method of alternating projections: applications, *Set-Valued and Variational Analysis*, Vol. 21, pp. 475-501 (2013)
26. H. Bauschke, D.R. Luke, H.M. Phan, and X. Wang, Restricted normal cones and sparsity optimization with affine constraints, to appear in *Foundations of Computational Mathematics* (2013)
27. H. Bauschke, H.M. Phan, and X. Wang, The Method of Alternating Relaxed Projections for two nonconvex sets, to appear in *Vietnam Journal of Mathematics* (2013)
28. H. Bauschke, J.M. Borwein, X. Wang, and L. Yao, Monotone operators and “bigger conjugate” functions, *Journal of Convex Analysis*, Vol 20, pp. 143-155 (2013)
29. H. Bauschke, J. Chen, and X. Wang, A projection method for approximating fixed points of quasi nonexpansive mappings without the usual demiclosedness condition, to appear in *Journal of Nonlinear and Convex Analysis* (2013)
30. H. Bauschke, J. Sarada, and X. Wang, On moving averages, to appear in *Journal of Convex Analysis* (2013)
31. H. Bauschke, J.Y. Bello Cruz, H.M. Phan, and X. Wang, The rate of linear convergence of the Douglas-Rachford algorithm for subspaces is the cosine of the Friedrichs angle, submitted (2013)
32. H. Bauschke, J. Chen, and X. Wang, A Bregman projection method for approximating fixed points of quasi-Bregman nonexpansive mappings, submitted (2013)
33. H. Bauschke, New demiclosedness principles for (firmly) nonexpansive operators, to appear in *Computational and Analytical Mathematics* (2013)
34. H. Bauschke, S.M. Moffat, and X. Wang, Near equality, near convexity, sums of maximally monotone operators, and averages of firmly nonexpansive mappings, *Mathematical Programming Series*, B 139, pp. 55-70 (2013)
35. H. Bauschke, W.L. Hare, and W.M. Moursi, A Derivative-Free CoMirror Algorithm, submitted to *Operations Research Letters* (2013)
36. H. Bauschke, W.L. Hare, and W.M. Moursi, Generalized solutions for the sum of two maximally monotone operators, submitted to *SIAM Journal on Control and Optimization* (2013)
37. R. Benedetto, D. Ghioca, B. Hutz, P. Kurlberg, T. Scanlon, and T. J. Tucker, Periods of rational maps modulo primes, *Math. Ann.* Vol. 355, pp. 637-660 (2013)
38. G. Benkart, S. Madariaga, J. M. Perez-Izquierdo, Hopf algebras with triality, *Transactions of the American Mathematical Society*, Vol. 365, pp. 1001-1023 (2013)
39. M. Bennett and Y. Bugeaud, Effective results for restricted rational approximation to quadratic numbers, submitted (2013)
40. M. Bennett, A superelliptic equation involving alternating sums of powers, to appear in *Publ. Math. Debrecen* (2013)
41. L. Berezhansky and E. Braverman, Stability of equations with a distributed delay, monotone production and nonlinear mortality, *Nonlinearity*, Vol. 26, No. 10, pp. 2833-2849 (2013)
42. L. Berezhansky, E. Braverman, and L. Idels, Mackey-Glass model of hematopoiesis with nonmonotone feedback: Stability, oscillation and control, *Appl. Math. Comput.* Vol. 219, pp. 6268-6283 (2013)
43. L. Berezhansky, E. Braverman, and L. Idels, Mackey-Glass model with monotone feedback revisited, *Appl. Math. Comput.* Vol. 219 pp. 4892-4907 (2013)
44. R. Blatt, A. I. Lvovsky, and G. J. Milburn, The 20th anniversary of quantum state engineering, *Journal of Physics B: Atomic, Molecular and Optical Physics*, Vol. 46., 100201 (2013)
45. E. Braverman and A. Rodkina, Stabilization of two cycles of difference equations with stochastic perturbations, *J. Difference Equ. Appl.* Vol. 19, pp. 1192-1212 (2013)
46. B. Braverman and C. Simon, Proposal to observe the nonlocality of bohmian trajectories with entangled photons, *Physical Review Letters*, Vol. 110, 060406 (2013)
47. M. Bremner and S. Madariaga, Dendriform analogues of Lie and Jordan triple systems, submitted (2013)
48. M. Bremner, S. Madariaga, Special identities for the pre-Jordan product in the free dendriform algebra, *Linear Algebra and Its Applications*, Vol. 439, pp. 435-454 (2013)
49. J. Burke and T. Hoheisel, Epi-convergent smoothing with applications to convex

- composite functions, *Siam J. Optimization*, Vol. 23, pp. 1457-1479 (2013)
50. J. Burke, A. Aravkin, and G. Pillonetto, Linear system identification using stable spline kernels and PLQ penalties, to appear in *IEEE Conf. Decision and Control* (2013)
 51. J. Burke, A. Aravkin, and G. Pillonetto, Sparse/Robust Estimation and Kalman Smoothing with Nonsmooth Log-Concave Densities: Modeling, Computation, and Theory, to appear in *Journal of Machine Learning Research* (2013)
 52. J. Burke, T. Hoheisel, and C. Kanzow, Gradient consistency for integral-convolution smoothing functions, *Set-Valued and Variational Analysis*, Vol. 21, pp. 359-376 (2013)
 53. M. Cariglia, G. W. Gibbons, D. Kubiznak, and C. M. Warnick, Hidden Symmetries of Dynamics in Classical and Quantum Physics, to appear in *Reviews in Modern Physics* (2013)
 54. H. Chang and A. Karch, Entanglement Entropy for Probe Branes, submitted (2013)
 55. D. Chao, D. Sun, and J.J. Ye, First order optimality conditions for mathematical programs with semidefinite cone complementarity constraints, submitted to *Mathematical Programming Series A* (2013)
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 60. T. Creutzig and G. Hoehn, Mathieu Moonshine and the Geometry of K3 Surfaces, submitted (2013)
 61. T. Creutzig, D. Ridout, and S. Wood, Coset Constructions of Logarithmic (1,p)-Models, submitted (2013)
 62. T. Creutzig, Y. Hikida, and P. B. Ronne, Extended higher spin holography and Grassmannian models, submitted (2013)
 63. N. Curien, L. Ménard, and G. Miermont, A view from infinity of the uniform infinite planar quadrangulation, *Lat. Am. J. Probab. Math. Stat.* Vol. 10, pp. 45-88 (2013)
 64. C. Davis and W. Hare, Exploiting known structures to approximate normal cones, to appear in *Mathematics of Operations Research* (2013)
 65. C. Davis and W. Hare, Exploiting Known Structures to Approximate Normal Cones, to appear in *Mathematics of Operations Research* (2013)
 66. R. Davis, C. F. Doran, A. Gewiss, A. Novoseltsev, D. Skjorshammer, A. Syryczuk, and U. Whitcher, Short Tops and Semistable Degenerations, submitted (2013)
 67. A. de la Lande, N. S. Babcock, J. Rezáč, B. C. Sanders, and D. R. Salahub, Correction: Surface residues dynamically organize water bridges to enhance electron transfer between proteins, *Proceedings of the National Academy of Sciences* Vol. 110, pp. 1136 (2013)
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 72. C. Doran, T. Gannon, H. Movasati, K. M. Shokri, Automorphic forms for triangle groups, submitted (2013)
 73. T. Duchamp, G. Xie, and T. Yu, Single basepoint subdivision schemes for manifold-valued data: time-symmetry without space-symmetry, published online in *Found. Comput. Math.* (2013)
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 75. C. Duval and M. J. Gotay, Quantization via deformation of prequantization, *Rep. Math. Phys.* Vol. 70, pp. 361-374 (2013)
 76. M. Fazly and N. Ghousoub, On the Henon-Lane-Emden conjecture, to appear in *Disc. Cont. Dyn. Syst. A.* (2013)
 77. O. Friedland and O. Giladi, A simple observation on random matrices with continuous diagonal entries, *Electron. Commun. Probab.* Vol. 18, pp. 1-7 (2013)

78. M. Friedlander and G. Goh, Tail bounds for stochastic approximation, submitted to *SIAM Journal on Control and Optimization* (2013)
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81. B. Gardiner and Y. Lucet, Computing the Conjugate of Convex Piecewise Linear-Quadratic Bivariate functions, *Mathematical Programming*, Vol. 139, Issue 1-2, pp. 161-184 (2013)
82. B. Gardiner, J. Khan, and Y. Lucet, Computing the partial conjugate of Convex Piecewise Linear-Quadratic Bivariate functions, submitted (2013)
83. N. Ghadermarzy and O. Yilmaz, Weighted approximate message passing algorithms for sparse recovery, accepted to *Proc. of SPIE Wavelets and Sparsity XV* (2013)
84. V. Gheorghiu and B. C. Sanders, Accessing quantum secrets via local operations and classical communication, *Physical Review A*, Vol. 88, 022340 (2013)
85. D. Ghioca, L. C. Hsia, and T. J. Tucker, Preperiodic points for families of polynomials, *Algebra & Number Theory*, Vol. 7, pp. 701-732 (2013)
86. D. Ghioca, T. Scanlon, Algebraic equations on the adelic closure of a Drinfeld module, *Israel J. Math.* Vol. 194, pp. 461-483 (2013)
87. R. Ghobadi, A. I. Lvovsky, and C. Simon, Creating and detecting micro-macro photon-number entanglement by amplifying and deamplifying a single-photon entangled state, *Physical Review Letters*, Vol. 110, 170406 (2013)
88. L. Giuggioli, J.R. Potts, D.I. Rubenstein, and S.A. Levin, Stigmergy, collective actions and social spacing, to appear in *Proc. of the National Academy of Sciences* (2013)
89. T. Gornak, J.L. Guermond, O. Iliev, and P.D. Minev, A direction splitting approach for incompressible Brinkman flow, to appear in *Int. J. Numer. Analysis Modeling* (2013)
90. G. Gour and N. R. Wallach, Classification of Multipartite Entanglement of All Finite Dimensionality, Accepted to *Physical Review Letters*, Vol. 111, 060502 (2013)
91. J. Gouveia, P. Parrilo, and R. Thomas, Lifts of convex sets and cone factorizations, *Mathematics of Operations Research*, Vol. 38, pp. 248-264 (2013)
92. J. Gouveia, R. Robinson, and R. Thomas, Polytopes of minimum positive semidefinite rank, to appear in *Discrete & Computational Geometry* (2013)
93. M. Greenberg and J. Voight, Lattice methods for algebraic modular forms on classical groups, accepted to *Computations with Modular Forms* (2013)
94. J. Guermond and P. Minev, Efficient parallel algorithms for unsteady incompressible flows. In: Iliev et al. (Eds), Numerical solution of PDEs: theory, algorithms, and their applications, *Springer Proceedings in Mathematics & Statistics*, Vol. 45 (2013)
95. S. Gunturk, M. Lammers, A. Powell, R. Saab, and O. Yilmaz, Sobolev duals for random frames and sigma-delta quantization of compressed sensing measurements, *Foundations of Computational Mathematics*, Vol. 13, pp. 1-36 (2013)
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97. L. Guo, G. Lin, J.J. Ye, and J. Zhang, Sensitivity analysis for parametric mathematical programs with equilibrium constraints, submitted to *SIAM Journal on Optimization* (2013)
98. O. Gurel-Gurevich and A. Nachmias, Recurrence of planar graph limits, *Annals of Mathematics*, Vol. 177, pp. 761-781 (2013)
99. O. Gurel-Gurevich, Y. Peres, and O. Zeitouni, Localization for controlled random walks and martingales, submitted (2013)
100. A.H. Westveld and P.D. Hoff, A statistical view of learning in the Centipede Game, to appear in *Stat* (2013)
101. S. Haines, J. Loepky, P. Tseng, and X. Wang, Convex relaxations of the weighted maxmin dispersion problem, to appear in *SIAM Journal of Optimization* (2013)
102. B. Han and X. Zhuang, Algorithms for matrix extension and orthogonal wavelet filter banks over algebraic number fields, *Mathematics of Computation*. Vol. 82, pp. 459-490 (2013)

103. B. Han and Z. Zhao, Image denoising using tensor product complex tight framelets with increasing directionality, submitted (2013)
104. B. Han, Matrix splitting with symmetry and symmetric tight framelet filter banks with two high-pass filters, *Applied and Computational Harmonic Analysis*, Vol. 35, pp. 200-227 (2013)
105. B. Han, Properties of discrete framelet transforms, *Mathematical Modelling of Natural Phenomena*, Vol. 8, pp. 18-47 (2013)
106. B. Han, Q. Mo, and Z. Zhao, Compactly supported tensor product complex tight framelets with directionality, submitted (2013)
107. A. Hardal, P. Xue, Y. Shikano, Ö. E. Müstecaplıoğlu, and B. C. Sanders, Discrete time quantum walk with nitrogen-vacancy centers in diamond coupled to a superconducting flux qubit, *Physical Review A*, Vol. 88, 022303 (2013)
108. W. Hare and C. Planiden, Parametrically prox-regular functions, to appear in *J. Convex Anal.* (2013)
109. W. Hare and C. Planiden, The NC-proximal average for multiple functions, to appear in *Optimization Letters* (2013)
110. W. Hare and J. Nutini, A derivative-free approximate gradient sampling algorithm for finite minimax problems, *Comput. Optim. Appl.* Vol. 56, pp. 1-38 (2013)
111. W. Hare and M. Macklem, Derivative-free optimization methods for finite minimax problems, *Optimization Methods and Software*, Vol. 28, pp. 300-312 (2013)
112. W. Hare and Y. Lucet, Derivative-free optimization via proximal point methods, to appear in *Journal of Optimization Theory and Applications* (2013)
113. W. Hare, J. Nutini, and S. Tesfamariam, A survey of non-gradient optimization methods in structural optimization, *Adv. Eng. Soft.* Vol. 59, pp. 19-28 (2013)
114. W. Hare, Numerical approximations of v_u-decompositions, u-gradients, and u-hessians, submitted to *SIAM Journal on Optimization* (2013)
115. W. Hare, S. Hossain, Y. Lucet, and F. Rahman, Speed improvements for large scale vertical alignment problems, submitted to *Journal of Computers & Operations Research* (2013)
116. W. Hare, S. Hossain, Y. Lucet, and F. Rahman, Models and strategies for efficiently determining an optimal vertical alignment of roads, submitted to *Journal of Computers & Operations Research* (2013)
117. W. Hare, Y. Lucet, and F. Rahman, Improving accuracy in vertical alignment via slide slope calculations, submitted to *European Journal of Oper. Res.* (2013)
118. W. Hare, Y. Lucet, and F. Rahman, A mixed-integer linear programming model to optimize the vertical alignment considering blocks and side-slopes in road construction, submitted (2013)
119. P. Hoff, X. Niu, and J.A. Wellner, Information bounds for Gaussian copulas, to appear in *Bernoulli* (2013)
120. G. Holzegel and C. M. Warnick, Boundedness and growth for the massive wave equation on asymptotically anti-de Sitter black holes, submitted to *Journal for Functional Analysis* (2013)
121. T. Hourı, D. Kubiznak, C. M. Warnick and Y. Yasui, Local metrics admitting a principal Killing-Yano tensor with torsion, *Class. Quant. Grav.* Vol. 29, 165001 (2013)
122. P. Hoyer and J. Rashid, Quantum Nonlocal Boxes Exhibit Stronger Distillability, *Modern Physics Letters A*, Vol. 28, 1330012 (2013)
123. A. Huef, M. Laca, I. F. Raeburn, and A. D. Sims, KMS states on the C*-algebras of finite graphs, *Journal of Mathematical Analysis and Applications*, Vol. 405, pp. 388-399 (2013)
124. T. Ito, Dehornoy-like left orderings and isolated left orderings, *J. Algebr.* Vol. 374, pp. 42-58 (2013)
125. M. Jacobson, Jr. and R. Scheidler, Hyperelliptic Curves. *Handbook of Finite Fields*, Section 12.4 (2013)
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129. B. Kapron, V. King, and B. Mountjoy, Dynamic Graph Connectivity in Polyarithmic Worst Case Time, submitted to Symposium on Discrete Algorithms (2013)

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132. J. Keating and P. Mineev, A fast algorithm for direct simulation of particulate flows using conforming grids. *J. Comp. Phys.* Vol. 255, pp. 486-501 (2013)
133. D. Kessler, P.D. Hoff, and D.B. Dunson, Marginally Specified Priors for Nonparametric Bayesian Estimation, to appear in *Journal of the Royal Statistical Society* (2013)
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135. M. Khan, A. Y. Aravkin, M. P. Friedlander, and M. Seeger, Fast dual variational inference for non-conjugate latent gaussian models, *Proc. 30th Inter. Conf. on Machine Learning (ICML-13)*, (2013)
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