

Bibliography

- [1] Acedo, G. L., and Xu, H. K. (2007). Iterative methods for strict pseudo-contractions in Hilbert spaces. *Nonlinear Analysis: Theory, Methods and Applications*, 67(7), 2258-2271.
- [2] Adamic, L. A., and Adar, E. (2003). Friends and neighbors on the web. *Social networks*, 25(3), 211-230.
- [3] Agarwal, R. P., O Regan, D., and Sahu, D. R. (2007). Iterative construction of fixed points of nearly asymptotically nonexpansive mappings. *Journal of Nonlinear and convex Analysis*, 8(1), 61.
- [4] Alvarez, F., and Attouch, H. (2001). An inertial proximal method for maximal monotone operators via discretization of a nonlinear oscillator with damping. *Set-Valued Analysis*, 9(1), 3-11.
- [5] Alvarez, F. (2004). Weak convergence of a relaxed and inertial hybrid projection-proximal point algorithm for maximal monotone operators in Hilbert space. *SIAM Journal on Optimization*, 14(3), 773-782.
- [6] Baillon, J. B., and Haddad, G. (1977). Quelques propriétés des opérateurs angle-bornés et n -cycliquement monotones. *Israel Journal of Mathematics*, 26(2), 137-150.

- [7] Barabási, A. L., and Albert, R. (1999). Emergence of scaling in random networks. *science*, 286(5439), 509-512.
- [8] Bauschke, H. H., and Combettes, P. L. (2001). A weak-to-strong convergence principle for Fejér-monotone methods in Hilbert spaces. *Mathematics of operations research*, 26(2), 248-264.
- [9] Bauschke, H. H., and Combettes, P. L. (2011). *Convex analysis and monotone operator theory in Hilbert spaces (Vol. 408)*. New York: Springer.
- [10] Bauschke, H. H., Dao, M. N., Noll, D., and Phan, H. M. (2015). Proximal point algorithm, Douglas-Rachford algorithm and alternating projections: a case study. *arXiv preprint arXiv:1501.06603*.
- [11] Beck, A., and Teboulle, M. (2009). A fast iterative shrinkage-thresholding algorithm for linear inverse problems. *SIAM journal on imaging sciences*, 2(1), 183-202.
- [12] Beck, A., and Teboulle, M. (2009). Fast gradient-based algorithms for constrained total variation image denoising and deblurring problems. *IEEE transactions on image processing*, 18(11), 2419-2434.
- [13] Bertsekas, D. P. (2014). *Constrained optimization and Lagrange multiplier methods*. Academic press.
- [14] Bioucas-Dias, J. M. (2006). Bayesian wavelet-based image deconvolution: A GEM algorithm exploiting a class of heavy-tailed priors. *IEEE Transactions on Image Processing*, 15(4), 937-951.
- [15] Bot, R. I., and Csetnek, E. R. (2016). An inertial alternating direction method of multipliers, *Minimax Theory Appl.*

- [16] Boţ, R. I., Csetnek, E. R., and Hendrich, C. (2015). Inertial Douglas–Rachford splitting for monotone inclusion problems. *Applied Mathematics and Computation*, 256, 472-487.
- [17] Boţ, R. I., Csetnek, E. R., and Meier, D. (2019). Inducing strong convergence into the asymptotic behaviour of proximal splitting algorithms in Hilbert spaces. *Optimization Methods and Software*, 34(3), 489-514.
- [18] Bot, R. I., and Hendrich, C. (2013). Solving monotone inclusions involving parallel sums of linearly composed maximally monotone operators. arXiv preprint arXiv:1306.3191.
- [19] Boţ, R. I., and Hendrich, C. (2014). Convergence analysis for a primal-dual monotone+ skew splitting algorithm with applications to total variation minimization. *Journal of mathematical imaging and vision*, 49(3), 551-568.
- [20] Boyd, S., Parikh, N., and Chu, E. (2011). *Distributed optimization and statistical learning via the alternating direction method of multipliers*. Now Publishers Inc.
- [21] Briceno-Arias, L. M., and Combettes, P. L. (2011). A monotone+ skew splitting model for composite monotone inclusions in duality. *SIAM Journal on Optimization*, 21(4), 1230-1250.
- [22] Browder, F. E. (1964). Continuity properties of monotone nonlinear operators in Banach spaces. *Bulletin of the American Mathematical Society*, 70(4), 551-553.
- [23] Browder, F. E. (1965). Multi-valued monotone nonlinear mappings and duality mappings in Banach spaces. *Transactions of the American Mathematical Society*, 118, 338-351.

- [24] Browder, F. E. (1968). Nonlinear maximal monotone operators in Banach space. *Mathematische Annalen*, 175(2), 89-113.
- [25] Bruckstein, A. M., Donoho, D. L., and Elad, M. (2009). From sparse solutions of systems of equations to sparse modeling of signals and images. *SIAM review*, 51(1), 34-81.
- [26] Butnariu, D., and Kassay, G. (2008). A proximal-projection method for finding zeros of set-valued operators. *SIAM Journal on Control and Optimization*, 47(4), 2096-2136.
- [27] Candes, E. J., and Tao, T. (2006). Near-optimal signal recovery from random projections: Universal encoding strategies?. *IEEE transactions on information theory*, 52(12), 5406-5425.
- [28] Cannistraci, C. V., Alanis-Lobato, G., and Ravasi, T. (2013). From link-prediction in brain connectomes and protein interactomes to the local-community-paradigm in complex networks. *Scientific reports*, 3(1), 1-14.
- [29] Chambolle, A., and Dossal, C. (2015). On the convergence of the iterates of the “fast iterative shrinkage/thresholding algorithm”. *Journal of Optimization theory and Applications*, 166(3), 968-982.
- [30] Chang, S. S., Wang, G., Wang, L., Tang, Y. K., and Ma, Z. L. (2014). Δ -convergence theorems for multi-valued nonexpansive mappings in hyperbolic spaces. *Applied Mathematics and Computation*, 249, 535-540.
- [31] Chen, C., Ma, S., and Yang, J. (2015). A general inertial proximal point algorithm for mixed variational inequality problem. *SIAM Journal on Optimization*, 25(4), 2120-2142.

- [32] Chen, S. S., Donoho, D. L., and Saunders, M. A. (2001). Atomic decomposition by basis pursuit. *SIAM review*, 43(1), 129-159.
- [33] Chidume, C., and Mutangadura, S. (2001). An example on the Mann iteration method for Lipschitz pseudocontractions. *Proceedings of the American Mathematical Society*, 129(8), 2359-2363.
- [34] Cholamjiak, P., Abdou, A. A., and Cho, Y. J. (2015). Proximal point algorithms involving fixed points of nonexpansive mappings in CAT (0) CAT(0) spaces. *Fixed Point Theory and Applications*, 2015(1), 1-13.
- [35] Combettes, P. L., and Pesquet, J. C. (2012). Primal-dual splitting algorithm for solving inclusions with mixtures of composite, Lipschitzian, and parallel-sum type monotone operators. *Set-Valued and variational analysis*, 20(2), 307-330.
- [36] Dao, M. N., and Phan, H. M. (2019). Adaptive Douglas–Rachford Splitting Algorithm for the Sum of Two Operators. *SIAM Journal on Optimization*, 29(4), 2697-2724.
- [37] Dixit, A., Sahu, D. R., Singh, A. K., and Som, T. (2020). Application of a new accelerated algorithm to regression problems. *Soft Computing*, 24(2), 1539-1552.
- [38] Dotson, W. G. (1970). On the Mann iterative process. *Transactions of the American Mathematical Society*, 149(1), 65-73.
- [39] Douglas, J., and Rachford, H. H. (1956). On the numerical solution of heat conduction problems in two and three space variables. *Transactions of the American mathematical Society*, 82(2), 421-439.
- [40] Eckstein, J., and Bertsekas, D. P. (1992). On the Douglas—Rachford splitting method and the proximal point algorithm for maximal monotone operators. *Mathematical Programming*, 55(1), 293-318.

- [41] Eckstein, J., and Ferris, M. C. (1998). Operator-splitting methods for monotone affine variational inequalities, with a parallel application to optimal control. *INFORMS Journal on Computing*, 10(2), 218-235.
- [42] Eckstein, J., and Fukushima, M. (1994). Some reformulations and applications of the alternating direction method of multipliers. In *Large scale optimization* (pp. 115-134). Springer, Boston, MA.
- [43] Fortin, M., and Glowinski, R. (2000). *Augmented Lagrangian methods: applications to the numerical solution of boundary-value problems*. Elsevier.
- [44] Güler, O. (1991). On the convergence of the proximal point algorithm for convex minimization. *SIAM Journal on Control and Optimization*, 29(2), 403-419.
- [45] Han, S. P., and Lou, G. (1988). A parallel algorithm for a class of convex programs. *SIAM Journal on Control and Optimization*, 26(2), 345-355.
- [46] Haugazeau, Y. (1968). *Sur les inéquations variationnelles et la minimisation de fonctionnelles convexes*. These, Universite de Paris.
- [47] Ishikawa, S. (1974). Fixed points by a new iteration method. *Proceedings of the American Mathematical Society*, 44(1), 147-150.
- [48] Jordan, M., Kleinberg, J., and Schölkopf, B. (2006). *Information Science and Statistics*.
- [49] Kachurovskii, R. I. (1960). Monotone operators and convex functionals. *Uspekhi Matematicheskikh Nauk*, 15(4), 213-215.
- [50] Kachurovskii, R. I. (1968). Non-linear monotone operators in Banach spaces. *Russian Mathematical Surveys*, 23(2), 117.

- [51] Khan, S. H. (2013). A Picard-Mann hybrid iterative process. *Fixed Point Theory and Applications*, 2013(1), 1-10.
- [52] Kipf, T. N., and Welling, M. (2016). Variational graph auto-encoders. arXiv preprint arXiv:1611.07308.
- [53] Kiwiel, K. C. (1997). Proximal minimization methods with generalized Bregman functions. *SIAM journal on control and optimization*, 35(4), 1142-1168.
- [54] Kumar, A., Singh, S. S., Singh, K., and Biswas, B. (2019). Level-2 node clustering coefficient-based link prediction. *Applied Intelligence*, 49(7), 2762-2779.
- [55] Lehdili, N., and Moudafi, A. (1996). Combining the proximal algorithm and Tikhonov regularization. *Optimization*, 37(3), 239-252.
- [56] Li, G., and Pong, T. K. (2016). Douglas–Rachford splitting for nonconvex optimization with application to nonconvex feasibility problems. *Mathematical programming*, 159(1-2), 371-401.
- [57] Liben-Nowell, D., and Kleinberg, J. (2007). The link-prediction problem for social networks. *Journal of the American society for information science and technology*, 58(7), 1019-1031.
- [58] Lieutaud, J. (1969). Approximations d’opérateurs monotones par des méthodes de splitting (Doctoral dissertation, doctoral thesis, University of Paris).
- [59] Limaye, B. V. (1996). *Functional Analysis Second Edition*, New Age, New Delhi.
- [60] Lions, P. L., and Mercier, B. (1979). Splitting algorithms for the sum of two nonlinear operators. *SIAM Journal on Numerical Analysis*, 16(6), 964-979.

- [61] Lorenz, D. A., and Pock, T. (2015). An inertial forward-backward algorithm for monotone inclusions. *Journal of Mathematical Imaging and Vision*, 51(2), 311-325.
- [62] Luke, D. R., and Martins, A. L. (2020). Convergence Analysis of the Relaxed Douglas-Rachford Algorithm. *SIAM Journal on Optimization*, 30(1), 542-584.
- [63] Maingé, P. E. (2008). Convergence theorems for inertial KM-type algorithms. *Journal of Computational and Applied Mathematics*, 219(1), 223-236.
- [64] Mann, W. R. (1953). Mean value methods in iteration. *Proceedings of the American Mathematical Society*, 4(3), 506-510.
- [65] Mercier, B. (1980). *Mechanics and variational inequalities*, Lecture Notes, Orsay Centre of Paris University.
- [66] Minty, G. J. (1961). On the maximal domain of a “monotone” function. *Michigan Mathematical Journal*, 8(2), 135-137.
- [67] Minty, G. J. (1962). Monotone (nonlinear) operators in Hilbert space. *Duke Mathematical Journal*, 29(3), 341-346.
- [68] Minty, G. J. (1964). On the monotonicity of the gradient of a convex function. *Pacific Journal of Mathematics*, 14(1), 243-247.
- [69] Mordukhovich, B. S., Nam, N. M., and Salinas, J. (2012). Applications of variational analysis to a generalized Heron problem. *Applicable Analysis*, 91(10), 1915-1942.
- [70] Mordukhovich, B. S., Nam, N. M., and Salinas, J. (2012). Solving a generalized Heron problem by means of convex analysis. *The American Mathematical Monthly*, 119(2), 87-99.

- [71] Muthukrishnan, R., and Rohini, R. (2016, October). LASSO: a feature selection technique in predictive modeling for machine learning. In 2016 IEEE international conference on advances in computer applications (ICACA) (pp. 18-20). IEEE.
- [72] Nesterov, Y. (2003). *Introductory lectures on convex optimization: A basic course* (Vol. 87). Springer Science and Business Media.
- [73] Ochs, P., Chen, Y., Brox, T., and Pock, T. (2014). iPiano: Inertial proximal algorithm for nonconvex optimization. *SIAM Journal on Imaging Sciences*, 7(2), 1388-1419.
- [74] Opial, Z. (1967). Weak convergence of the sequence of successive approximations for nonexpansive mappings. *Bulletin of the American Mathematical Society*, 73(4), 591-597.
- [75] Ou, Q., Jin, Y. D., Zhou, T., Wang, B. H., and Yin, B. Q. (2007). Power-law strength-degree correlation from resource-allocation dynamics on weighted networks. *Physical Review E*, 75(2), 021102.
- [76] Parikh, N., and Boyd, S. (2014). Proximal algorithms. *Foundations and Trends in optimization*, 1(3), 127-239.
- [77] Peaceman, D. W., and Rachford, Jr, H. H. (1955). The numerical solution of parabolic and elliptic differential equations. *Journal of the Society for industrial and Applied Mathematics*, 3(1), 28-41.
- [78] Phan, H. M. (2016). Linear convergence of the Douglas–Rachford method for two closed sets. *Optimization*, 65(2), 369-385.
- [79] Polyak, B. T. (1964). Some methods of speeding up the convergence of iteration methods. *Ussr computational mathematics and mathematical physics*, 4(5), 1-17.

- [80] Rockafellar, R. T. (2015). *Convex analysis*. Princeton university press.
- [81] Rockafellar, R. T. (1976). Monotone operators and the proximal point algorithm. *SIAM journal on control and optimization*, 14(5), 877-898.
- [82] Sahu, D. R. (2011). Applications of the S-iteration process to constrained minimization problems and split feasibility problems. *Fixed Point Theory*, 12(1), 187-204.
- [83] Sakurai, K., and Iiduka, H. (2014). Acceleration of the Halpern algorithm to search for a fixed point of a nonexpansive mapping. *Fixed Point Theory and Applications*, 2014(1), 1-11.
- [84] Salinger, D. H. (1997). A splitting algorithm for multistage stochastic programming with application to hydropower scheduling (Doctoral dissertation).
- [85] Spingarn, J. E. (1985). Applications of the method of partial inverses to convex programming: decomposition. *Mathematical Programming*, 32(2), 199-223.
- [86] Suparatulatorn, R., and Cholamjiak, P. (2016). The modified S-iteration process for nonexpansive mappings in $\text{CAT}(\kappa)$ spaces. *Fixed Point Theory and Applications*, 2016(1), 1-12.
- [87] Svaiter, B. F. (2011). On weak convergence of the Douglas–Rachford method. *SIAM Journal on Control and Optimization*, 49(1), 280-287.
- [88] Takahashi, W., Takeuchi, Y., and Kubota, R. (2008). Strong convergence theorems by hybrid methods for families of nonexpansive mappings in Hilbert spaces. *Journal of Mathematical Analysis and Applications*, 341(1), 276-286.
- [89] Tan, B. I. N. G., and Xu, S. H. A. N. S. H. A. N. (2020). Strong convergence of two inertial projection algorithms in Hilbert spaces. *J. Appl. Numer. Optim*, 2(2), 171-186.

- [90] Tibshirani, R. (1996). Regression shrinkage and selection via the lasso. *Journal of the Royal Statistical Society: Series B (Methodological)*, 58(1), 267-288.
- [91] Tikhonov, A. N. (1963). Solution of incorrectly formulated problems and the regularization method. *Soviet Math.*, 4, 1035-1038.
- [92] Tikhonov, A. N. (1965). Ill-posed problems of optimal planning and stable methods for their solution. In *Doklady Akademii Nauk* (Vol. 164, No. 3, pp. 507-510). Russian Academy of Sciences.
- [93] Tikhonov, A.N., Arsenin, V.J., (1977): *Methods for Solving Ill-Posed Problems*. Wiley, New York.
- [94] Tseng, P. (2000). A modified forward-backward splitting method for maximal monotone mappings. *SIAM Journal on Control and Optimization*, 38(2), 431-446.
- [95] Vú, B. C. (2013). A splitting algorithm for dual monotone inclusions involving cocoercive operators. *Advances in Computational Mathematics*, 38(3), 667-681.
- [96] Xu, H. K. (2002). Iterative algorithms for nonlinear operators. *Journal of the London Mathematical Society*, 66(1), 240-256.
- [97] Yao, Y., Cho, Y. J., and Liou, Y. C. (2011). Algorithms of common solutions for variational inclusions, mixed equilibrium problems and fixed point problems. *European Journal of Operational Research*, 212(2), 242-250.
- [98] Zhao, L. C., Chang, S. S., and Kim, J. K. (2013). Mixed type iteration for total asymptotically nonexpansive mappings in hyperbolic spaces. *Fixed Point Theory and Applications*, 2013(1), 1-11.

List of Publications

1. **Dixit, A.**, Sahu, D. R., Singh, A. K., and Som, T. (2020). Application of a new accelerated algorithm to regression problems. *Soft Computing*, 24(2), 1539-1552.
2. **Dixit, A.**, Sahu, D. R., Gautam, P., and Som, T. (2021). Convergence analysis of two-step inertial Douglas-Rachford algorithm and application. *Journal of Applied Mathematics and Computing*, 1-25.
3. **Dixit, A.**, Sahu, D. R., Gautam, P., and Som, T. and Yao, J.C. (2021). An accelerated forward-backward splitting algorithm for solving inclusion problems with applications to regression and link prediction problems, *J. Nonlinear Var. Anal.* 5, 79-101.
4. **Dixit, A.**, Sahu, D. R., Gautam, P., and Som, T. (2021) Strongly convergent Algorithms to Solve Monotone Inclusion Problems. *Optimization* (Submitted).
5. Som, T., Gautam, P., **Dixit, A.**, and Sahu, D. R. (2020). Different Techniques to Solve Monotone Inclusion Problems. *Mathematical Methods in Interdisciplinary Sciences*, 413-431.