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ITERATED PROXIMAL OPERATORS : NOVEL PERSPECTIVES AND APPLICATIONS

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Steepest descent and alternating projections are perhaps the most widely used iterative techniques for solving both convex and nonconvex problems. We unify these and many other lesser-known iterative techniques through the use of proximal operators. We update these algorithms in a proximal framework and demonstrate a surprizing range of applications, from limited memory matrix secant methods for large-scale optimization, to phase retrieval in crystallography, to $\ell 0$ minimization and combinatorial optimization.

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