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Hande Y. Benson* (benson@drexel.edu), Department of Decision Sciences, Drexel University, 3141 Chestnut Street, Philadelphia, PA 19104, and **David F. Shanno**. *Cubic Regularization in Interior-Point Methods*.

We present several algorithms for nonlinear optimization, all employing cubic regularization. The favorable theoretical results of Griewank (1981), Nesterov and Polyak (2006), and Cartis et.al. (2011) motivate the use of cubic regularization, but its application at every iteration of the algorithm, as proposed by these papers, may be computationally expensive. We propose some modifications, and numerical results are provided to illustrate the robustness and efficiency of the proposed approaches on both unconstrained and constrained problems. (Received January 26, 2014)