

A Subspace Method for Large Scale Minimization over a Sphere

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Oct. 27th, 2009

A subspace method for large scale optimization over a sphere is proposed. At every iteration, the new iterate point is computed by minimizing a quadratical model in the intersection of the feasible sphere and a lower dimensional subspace. The subspace and the quadratical model are updated by using the information given in the previous iterations. The method does not use line search nor use an explicit trust region. The new iterate is accepted as long as it gives a sufficient reduction in the objective function.

Convergence of the method is studied and preliminary numerical results are reported.