

I.E. Livieris, S. Karlos, V. Tampakas and P. Pintelas. [A hybrid conjugate gradient method based on the self-scaled memoryless BFGS update](#)

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**Abstract** - In this work, we present a new conjugate gradient method incorporating approach of the hybridization the conjugate gradient update parameters of DY and HS+ convexly which is based on a quasi-Newton philosophy. The computation of the hybridization parameter parameter is obtained by minimizing the distance between the hybrid conjugate gradient direction and the self-scaling memoryless BFGS direction. Our numerical experiments indicate that our proposed method is preferable and in general superior to classical conjugate gradient methods in terms of efficiency and robustness.