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Yuka Yanagisawa[†], Takeshi Ogita[‡] and Shin'ichi Oishi[†],

†Graduate School of Fundamental Science and Engineering, Waseda University 3-4-1 Okubo, Shinjuku-ku, Tokyo 169-8555, Japan
‡Division of Mathematical Sciences, Tokyo Woman's Christian University 2-6-1 Zempukuji, Suginami-ku, Tokyo 167-8585, Japan Email: ogita@lab.twcu.ac.jp

Abstract—In this paper, an algorithms for accurate matrix factorization based on Cholesky factorization for extremely ill-conditioned matrix is proposed. In 2012, Ogita and Oishi derived an iterative algorithm to calculate a good approximate inverse of the exact Cholesky factor for such matrices. We present a modified version of the algorithm. Moreover, we show the proposed algorithm gives more accurate results than the original algorithm by some numerical experiments.

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