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Takeshi Ogita

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## Backward Error Bounds of Block $LDL^T$ factorizations

Takeshi Ogita<sup>†</sup>

<sup>†</sup>Division of Mathematical Sciences, Tokyo Woman's Christian University  
2-6-1 Zempukuji, Sugunami-ku, Tokyo 167-8585, Japan  
Email: ogita@lab.twcu.ac.jp

**Abstract**—To solve linear systems is ubiquitous since it is one of the basic and significant tasks in scientific computing. Floating-point arithmetic is widely used for this purpose. Since it uses finite precision arithmetic and numbers, rounding errors are included in computed results.

Matrix factorizations such as LU and Cholesky factorizations are used for solving linear systems. In particular, block  $LDL^T$  factorizations apply to symmetric and indefinite matrices. In this talk backward error bounds on block  $LDL^T$  factorizations by floating-point arithmetic are given. The error bounds are computable and easy to calculate normwise.

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