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**Ren-cang Li.** *Heavy Ball Minimal Residual Method for Least-squares Problems.*

The heavy ball minimal residual (HBMR) method is presented for solving overdetermined least-squares problem  $\min_x \|Ax - b\|_2$ , where  $A$  is a sparse matrix. HBMR method seeks optimal approximate solutions of the least-squares problem by minimizing the residual norm  $\|A^T r\|_2$  over both the Krylov subspace obtained by the restarted Golub-Kahan bidiagonalization process and the information of the Krylov subspaces in the previous cycles. Numerical experiments are reported to show the advantages of the HBMR method. (Received September 17, 2016)