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Bin Han* (bhan@ualberta.ca), Dept. of Mathematical and Statistical Science, University of Alberta, Edmonton, Alberta T6G 2G1, Canada, and **Zhiqiang Xu** (xuzq@lsec.cc.ac.cn), LSEC, Institute of Computational Mathematics, Academy of Mathematics and System Science, Chinese Academy of Sciences, Beijing, 100091, Peoples Rep of China. *The Robustness Property of Johnson–Lindenstrauss Lemma*. Preliminary report.

Johnson–Lindenstrauss Lemma concerns low-distortion embedding of points from high-dimensional into low-dimensional Euclidean space and plays a key role in the establishment of the restricted isometric property in compressed sensing and dimensionality reduction. In this talk, For arbitrary erasure of entries, we consider the almost norm preservation property of Gaussian random matrices and the Johnson–Lindenstrauss Lemma. When the ratio of missing/erased entries is small, we prove an optimal result on the robustness property of the almost norm preservation property of Gaussian random matrices and the Johnson–Lindenstrauss Lemma. When the ratio of missing/erased entries is large, we obtain an improved result on the robustness property of the Johnson–Lindenstrauss Lemma by using order statistics and Gaussian random matrices. (Received July 24, 2014)