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Boris Kashin* (kashin@mi.ras.ru). *SPARSE APPROXIMATION AND N -WIDTH ESTIMATES.*

In this talk we will give an overview of some geometric results connected with sparse approximation. In particular, we will consider low-dimensional subspaces in R^N (i.e. their dimension is much lower than N) that have good approximation properties and are constructed using different approaches such that:

- a) generated by random matrices;
- b) as a span of the random subsystems of orthonormal bases in R^N ;
- c) by explicit construction without the use of randomness. (Received May 11, 2007)