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Scott Spencer* (spencer@math.gatech.edu). *A Learning Theory Approach to Compressive Sensing.*

We will discuss the utility of *Vapnik-Chervonenkis dimension* in demonstrating that Gaussian measurement matrices have the *Restricted Isometry Property* (of order s) when the number of measurements is on the order of $s \log(n/s)$. We also investigate the sign-linear embeddings of 1-bit compressed sensing. One can give short arguments concerning a Restricted Isometry Property of such maps using the VC-dimension of sparse hemispheres. This approach has a natural extension to the presence of additive white noise prior to quantization. Noisy one-bit mappings are shown to satisfy an RIP when the metric on the sphere is given by the noise. (Received September 11, 2016)