1106-41-1260 **Ozgur Yilmaz***, 121-1984 Mathematics Rd, Vancouver, BC V7H1K4, Canada. *Quantization of compressed sensing measurements:exponential accuracy.*

We discuss how to efficiently quantize compressive samples of sparse or compressible signals. Our focus will be sigma-delta quantization, typically used for redundant expansions, e.g., frame expansions. We recently showed that these also provide superior approximations in the compressed sensing setting by establishing a link with frame quantization. Our original result uses a two-stage reconstruction method that relies on support recovery and works only for exactly sparse signals with no noise. There are two new results that I will describe: (1) We propose a one-stage reconstruction scheme based on a convex optimization problem that yields consistent reconstruction. We show that the reconstruction error decays inverse-polynomially with respect to the "oversampling rate" λ. Furthermore, if we optimize the order of the scheme for a given λ, the error decays root-exponentially with respect to λ. (2) We propose a method for compressing the quantized samples further via a Johnson-Lindenstrauss embedding. After modifying the one-stage decoder, this yields an error that decays exponentially as a function of the bit budget. These results apply both in fine and coarse quantization settings including 1-bit quantization. Joint work with Rongrong Wang and Rayan Saab. (Received September 11, 2014)