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Justin Romberg*, 777 Atlantic Drive NW, Atlanta, GA 30332. *Architectures for Compressive Sampling.*

Several recent results in Compressive Sampling show that a sparse signal (i.e. one which can be compressed in a known orthobasis) can be efficiently acquired by taking linear measurements against random test functions. In practice, however, it is difficult to build sensing devices which take these types of measurements. In this presentation, we will show how to extend some of the results in Compressive Sampling to measurement systems which are more amenable to real-world implementation. We will discuss applications to radar and coherent imaging. (Received August 20, 2007)