1086-42-1265 **John J. Benedetto*** (jjb@math.umd.edu), Department of Mathematics, University of Maryland, College Park, MD 20782. *Gabor frame and rotated DFT matrices for transform-based image compression.* Preliminary report.

A specific optimal Gabor frame is defined with the goal of optimal transform-based image compression with regard to sparsity as it affects speed of transmission and efficiency of storage. We also introduce the natural notion of $p \times p^2$ DFT matrices in terms of p rotations. We analyze compression in terms of the sparsity of OMP solutions of $Ax = b$, for A both optimal Gabor and rotated DFT. This is a collaboration with Robert Benedetto, Alfredo Nava-Tudela, and Joseph Woodworth. (Received September 20, 2012)