

1032-42-35

Laurent Demanet* (demanet@gmail.com), Stanford Mathematics, CA. *Fourier sketching:
low-complexity computation of sparse DFT.*

In this talk I will present a greedy, randomized algorithm that computes the DFT of length N when only S coefficients are nonzero but have unknown location, in the spirit of recent work by Gilbert et al. The complexity is empirically sublinear and scales like $S \cdot \log^2 N$. While some elements of the algorithm are directly taken from Gilbert et al., I believe that some steps such as the coefficient estimation are novel. Applications include fast decoding for compressed sensing, without even formulating an ℓ_1 problem or expliciting the measurement matrix. (Received July 22, 2007)