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Greed is Super: A New Iterative Method for Super-Resolution. Preliminary report.

In this talk, we discuss a new greedy algorithm for super-resolution. Given the low-frequency part of the spectrum of a sequence of impulses, our objective is to estimate their positions. The backbone of our work is the fundamental work of Slepian et al. involving discrete prolate spheroidal wave functions and their unique properties. By its greedy nature, our work differs from the approach of Candes et al. based on convex optimization. By its use of prolate functions, our work also differs from the greedy algorithm presented by Fannjiang et al.

We also contribute to the existing theory on duration- and band-limiting operators by producing new asymptotic expressions for prolate functions. (Received January 19, 2015)