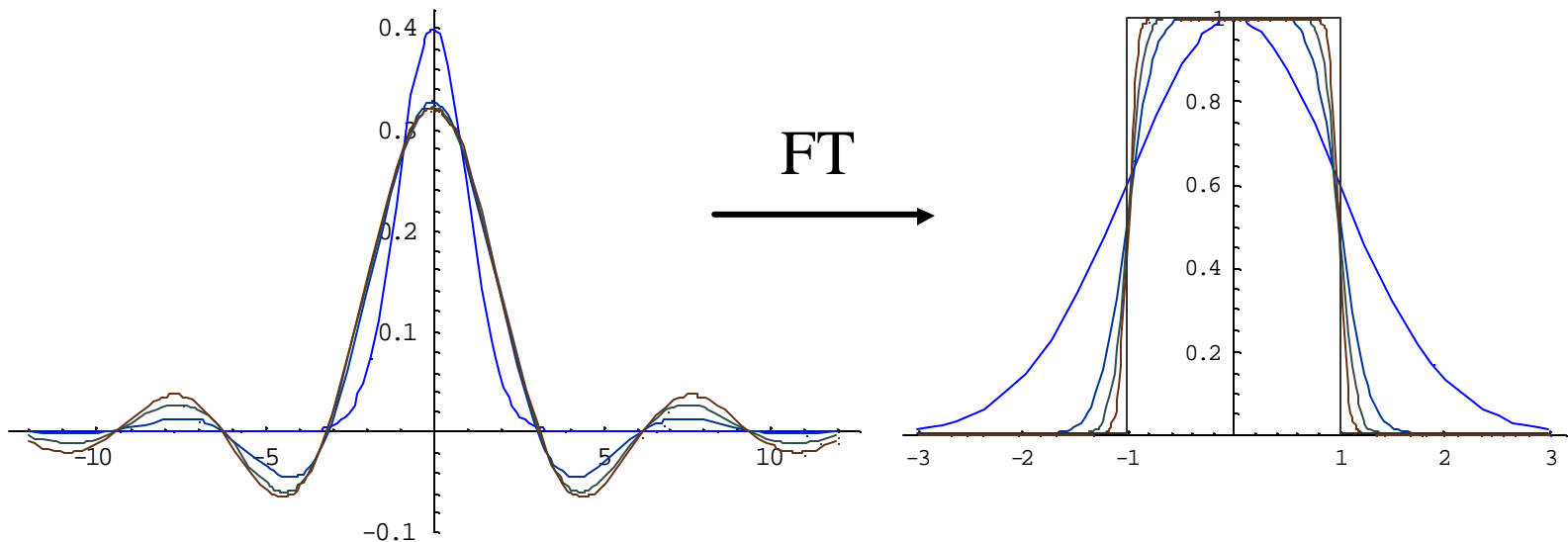


Approximating the ideal low-pass filter in 1D

Linear combination of Hermite functions up to given order, chosen closest to ideal low-pass filter in frequency domain



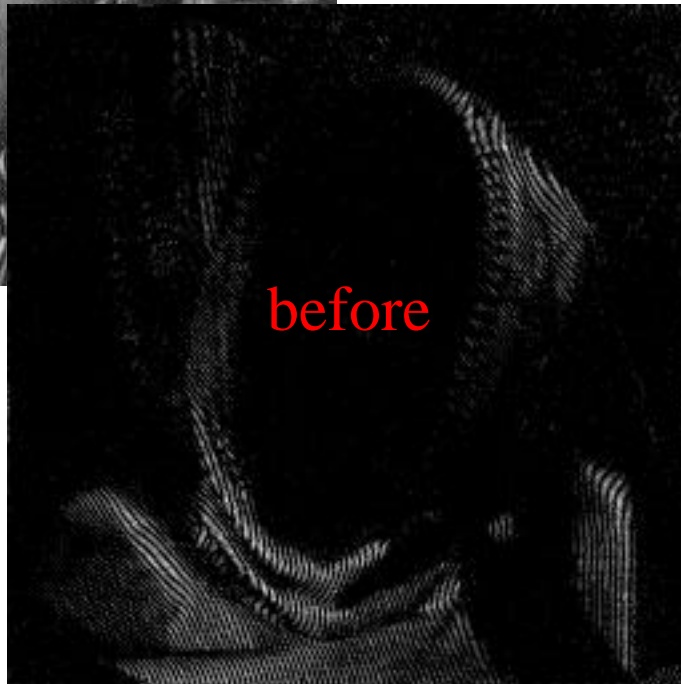
combine sharp frequency separation, regularity (smoothness) with **low uncertainty product**.

Approximating a Frame MRA wavelet decomposition in 2D

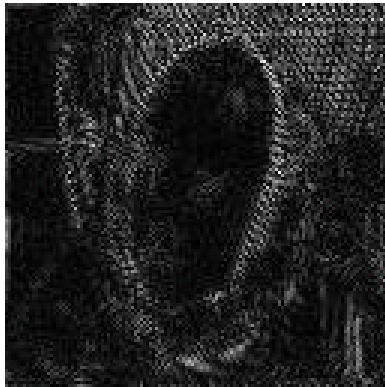


Example of low-uncertainty
approximate filtering:

High Pass Component of Frame MRA,
1st Iteration, exact vs. approximate



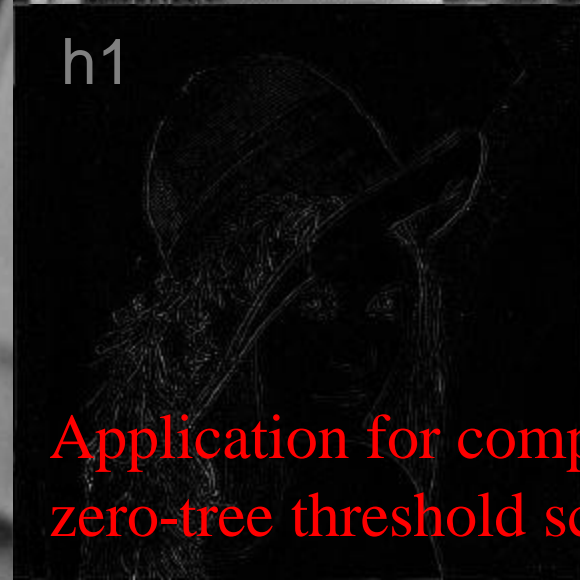
2nd Iteration



vs.



Decomposition into sparse sub-bands



Application for compression via zero-tree threshold scheme