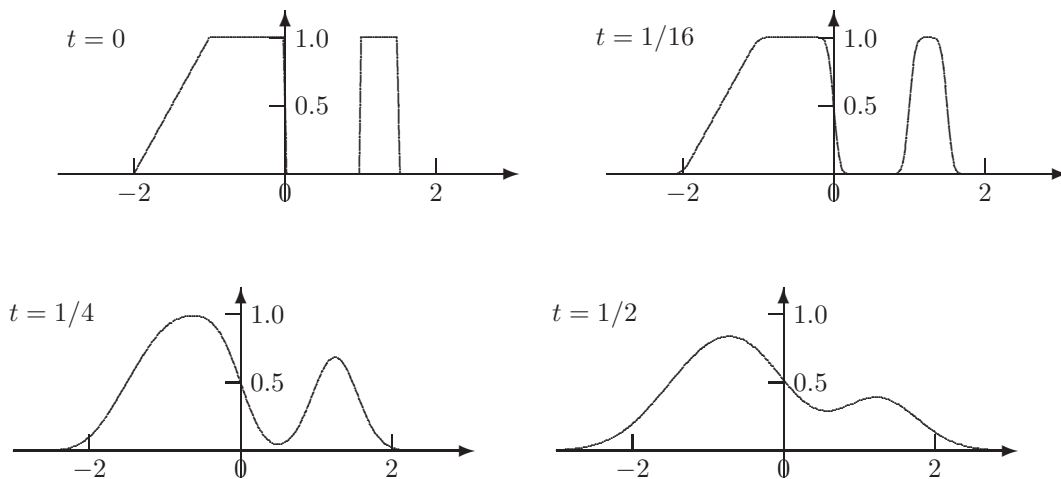




Wavelets (Winter 08/09)

Filter properties of wavelet transform

$$f_t(x) = \frac{1}{\sqrt{c_\psi}} \int_{|a|>t} \int_{\mathbb{R}} W_\psi f(a, b) T^b D^a \bar{\psi}(x) \frac{db da}{a^2}$$



$W_\psi f(a, b)$, $|a| < t$, represents details being larger than $\frac{2\pi t}{\omega_0}$. In case of the Mexican hat wavelet (as above): $\omega_0 = \sqrt{2}$. Thus,

$t = 1/16$: detail size > 0.28 ,

$t = 1/4$: detail size > 1.12 ,

$t = 1/2$: detail size > 2.24 .