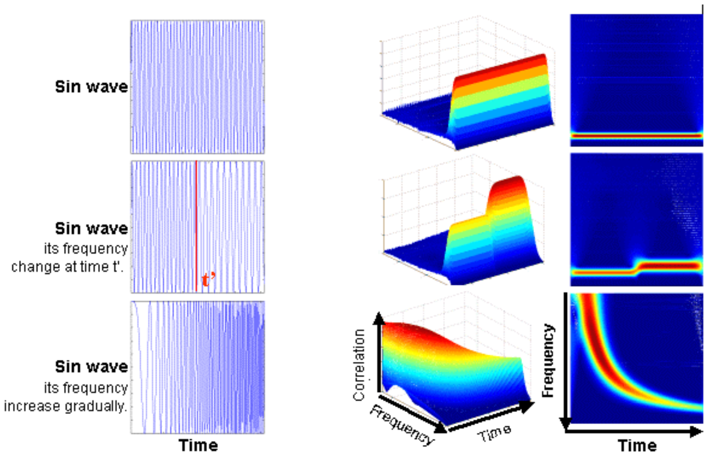
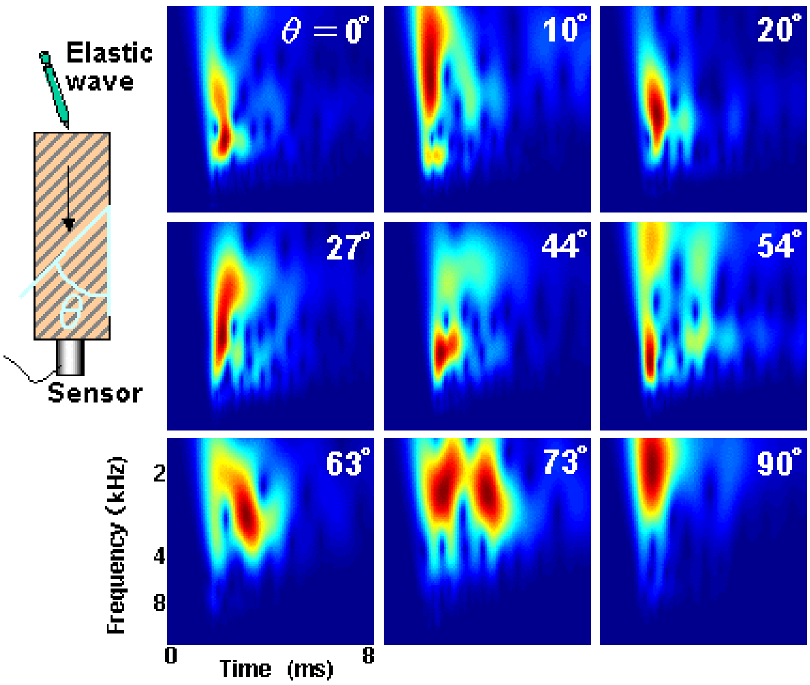
Wavelet analysis of elastic wave in wood and its application to non-destructive evaluation

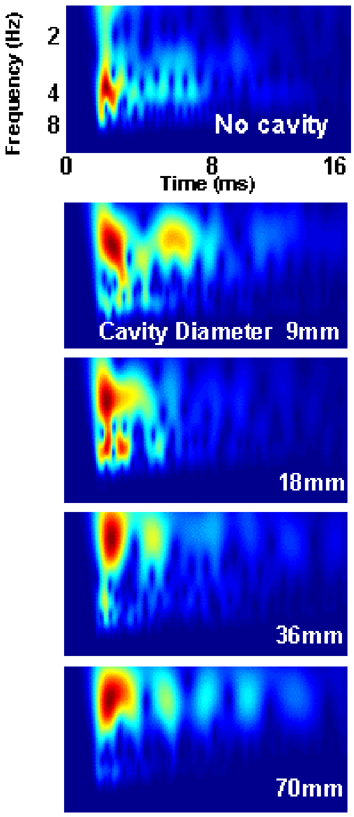
Wavelet transform (WT) is a novel method for a transient analysis of the frequency component in a signal. WT analysis was applied to the elastic wave propagating in wood and its feasibility as a non-destructive evaluation method was investigated.

Wavelet of simple signals





Influence of grain angle on the WT of elastic wave propagating of wood



WT of elastic wave propagating in wood with an inner cavity of different diameter