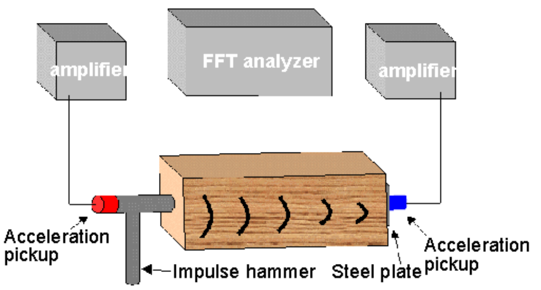
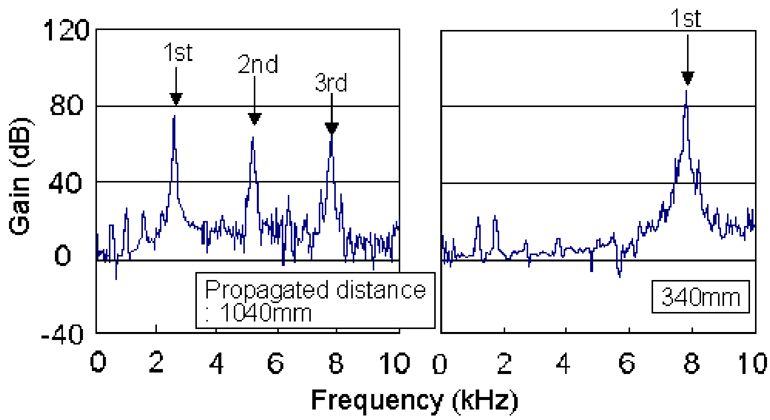
Evaluation of Attenuation Property of Longitudinal Wave in Wood by Impulse Response

The attenuation property of the wave (longitudinal wave) which propagates in wood is very important for the decision of monitoring area of a sensor. Various factors (species,heterogeneity,length,propagated direction,etc) affect attenuation property,and so we need to know these in detail. Attenuation property and the frequency dependency were investigated by impulse response.

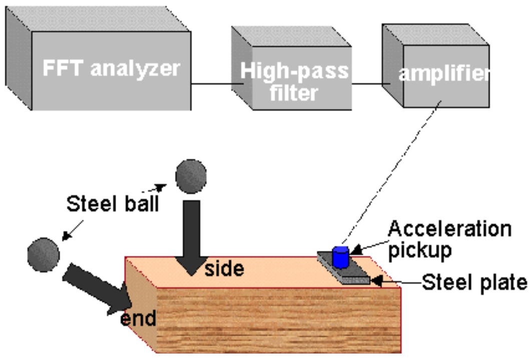
Impulsive load using impulse hammer

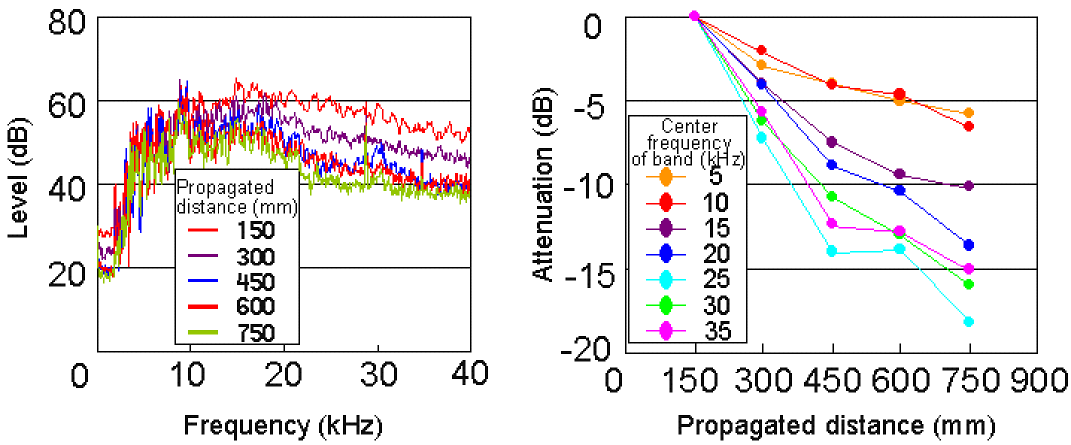




Relationship between propagated distance and gain

Constant impulsive load





Frequency spectrum (left) and attenuation property (right) of detected wave
***side plane excitation**