## Ultrasonic Software

Data Acquisition

Our lab disposes of self-developed software for motion control of linear and rotary mechanical axes in conjunction with ultrasonic data acquisition, resulting typically in 3D data sets.

Data Evaluation

Self-developed software allows the data evaluation and display in the form of e.g. A-, B-, C- and D-scans. There are features available such as interface triggering, bandpass filtering, FFT, linear/dB display, tracking algorithm, averaging and more.

Simulation of Wave Propagation

- Within a research project a 2D Finite Difference Time Domain (FDTD) code was developed that allows the numerical simulation of the wave propagation of ultrasound in arbitrary media.
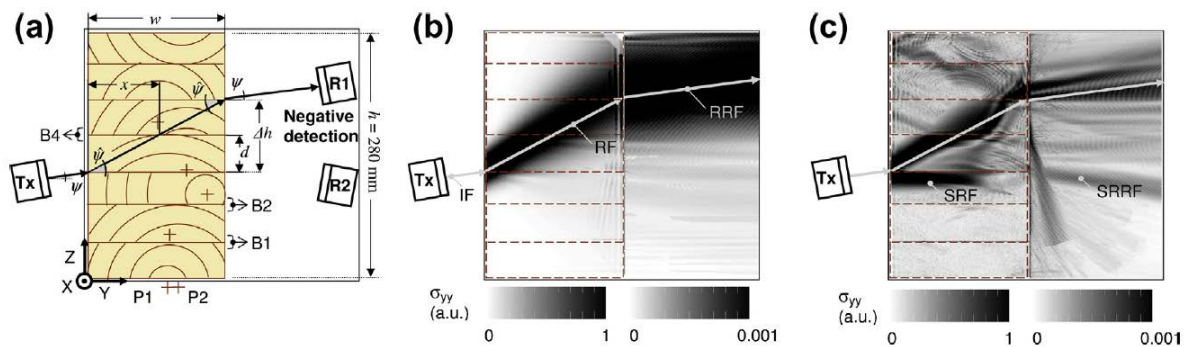
S.J. Sanabria, R. Furrer, J. Neuenschwander, P. Niemz and U. Sennhauser, Novel slanted incidence air-coupled ultrasound method for delamination assessment in individual bonding planes of structural multi-layered glued timber laminates, Ultrasonics 53 (2013) 1309-1324.

- We dispose of the commercial software CIVA which is able to perform 2D and 3D simulations of wave propagation in experimental setups with single or multi-element probes, with complex-shaped samples and a variety of flaws.