

Ultrasonics 2021 final project:

Write a report (max 5 pages) about your wave mode (see the table below) and prepare a 10 min presentation on the subject. **A practice session for the presentation will also be held on 5.5.2021 14:00-16:00 (compulsory, in Zoom)**, where you will give your presentations and receive feedback for possible improvement. **The written reports will be submitted at latest 9.5. 23:59** and the **presentations will be presented 11.5. at 11:00-13:00** in Zoom. The final project will constitute 40 % of the grade.

Presentations/reports must include:

- The underlying differential equation (linear approach)
- Assumptions (e.g. propagation medium, boundary conditions)
- Derivation of equation for pressure $p(r,t)$
- Dispersion and attenuation: Is the wave mode dispersive and/or attenuating? How (equation + dispersion curve)?
- Schematic representation of the particle motion
- Video/animation/simulation of the wave mode

Your written reports will be graded on clarity, thoroughness, difficulty, and professionalism.

Your presentations will be graded on clarity, elegance, difficulty and general impression.

Modes and presenters

Coffeng	Shear horizontal waves
Korhonen	Waves in beams (long, shear, torsional, flexural)
Lassila	Stoneley wave
Mustonen	Rayleigh + leaky Rayleigh waves
Sundblad	Lamb waves
Törnblom	String waves (longitudinal, flexural)
Österberg	Transverse membrane waves