MODELS OF ANISOTROPIC THERMO-ELASTICITY IN TWO AND THREE SPACE DIMENSIONS

JENS WIRTH (LONDON)

ABSTRACT. The equations of thermo-elasticity couple a hyperbolic system (the system of crystal acoustics) to a heat equation. Aim of the talk is to present (sharp and frequency-localised) a priori estimates for solutions in terms of geometric properties of the symbol of the elastic operator. The approach is based on an asymptotic de-coupling of the system for small and large frequencies.

Several examples for the two-dimensional situation will be given and the particular situation of cubic media in three space dimensions discussed in some detail.

The two-dimensional treatment is based on the joint work [1] with Michael Reissig (Freiberg).

References:
[1] M. Reissig, J. Wirth, *Anisotropic thermo-elasticity in 2D. Part I: A unified treatment*, Asympt. Anal. 57 (2008) 1–27.
[2] J. Wirth, *Anisotropic thermo-elasticity in 2D. Part II: Applications*, Asympt. Anal. 57 (2008) 29–40.