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Eigenvalues in linear elasticity: theory and approximation

In this talk we will discuss some eigenproblems regarding the Lamé operator for linear elasticity. Based on recent work, we consider different types of eigenvalue problems, including Steklov eigenvalues in elasticity, normal-tangential (where the normal component of the traction and the tangential component of the displacement are set to zero on the boundary) and tangential-normal (where the tangential component of the traction and the normal component of the displacement are set to zero on the boundary). We will cover theory, including some new types of Korn's inequality, and the approximation of these eigenpairs with the use of the finite element method.