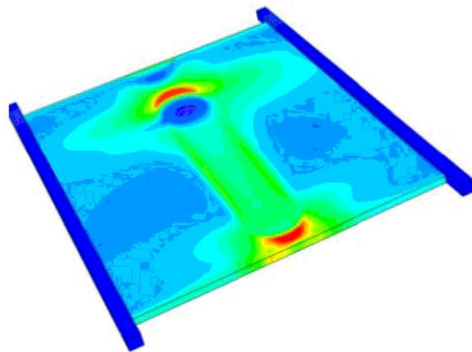


Division of Mechanics

FE simulations of mounting of an anisotropic work piece material to reduce the effects of vibration (Master thesis 30hp)

Machining is a process at extremely high strain rates which often result in vibration. To reduce the vibration during this process one aspect that need to be investigated is how to mount the work piece. The mounting is of importance especially when we consider anisotropic materials, since the material has different mechanical response in different directions.



The proposed Master project aims at investigating the mounting by developing a FE-model in Abaqus and introduce proper boundary conditions for the mounting. The material model for the work piece will be chosen as anisotropic elastic, with elastic constants previously determined from ab-initio simulations. In the first part of the Master project different orientations of the work piece should be simulated in order to obtain as stress-free mounting as possible.

The second part of the master project will focus on performing modal analyses of the proposed mounting from part one. The goal is to investigate and reduce the sensitivity to vibrations due to external loading for different orientation of the anisotropic work piece. The work is suitable for 2 students and can start in January 2021.

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