

BERNOULLIS TAFELRUNDE

GRADUATE STUDENT SEMINAR

Monday, 27th of September 2021, 12:15-13:00

Seminarraum 00.003, Spiegelgasse 1 and Zoom

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Boundary Element Methods for Shape Optimisation in Homogenisation

ABSTRACT

The optimal design of a microstructure is important in several industrial applications, such as, for example, the development of medical and dental implants, or lightweight material structures in aeronautics. Considering a scaffold structure, it is intended to optimise the shape of the hole in the micro cell in order to get specific material properties. This requires the solution of the underlying homogenised boundary value problems, the calculation of a shape functional and its shape derivatives, and the update of the geometry. The boundary value problems are solved using the isogeometric boundary element method.