

## Seminar im Rahmen des GRK 2078

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Referent: **Prof. Dr.-Ing. Axel Schumacher**  
Lehrstuhl für Optimierung mechanischer Strukturen  
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Datum: Di., 31.01.2017  
Uhrzeit: 14:00-15:30 Uhr  
Ort: Geb. 10.23, 3.OG, KM-Seminarraum (308.1)

Titel: **Finding good layouts of lightweight structures with topology optimization procedures**

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### Abstract

The talk deals with the possibilities of different topology optimization concepts for finding new layouts of structures.

Considering linear finite element analysis, there are several procedures available. One of them is the SIMP approach (Solid Isotropic Material with Penalization). Some success stories with the SIMP approach will be discussed. Considering non-linear finite element analysis, the topology optimization is much more difficult, because of missing efficient sensitivity calculation methods. The talk presents some possibilities to handle non-linear problems, e.g., by combination of mathematical tools and heuristic approaches. Exemplary applications for structural crash optimization will be shown.

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Alle Interessenten sind herzlich eingeladen.

Prof. Dr.-Ing. Thomas Böhlke