TOPOLOGY OPTIMIZATION OF COMPONENTS UNDER DYNAMIC LOADS

Outset situation / objective

• model-based optimization is key to reduce weight and costs in structural parts under demanding loads

• computational optimization approaches usually take (quasi) static load cases as boundary conditions, even though most components are exposed to dynamic loads, like during a crash event

• objective of this work is to extent the standard methods to non-linear dynamic loading conditions

Scope of YOUR Thesis

• investigation of existing approaches from the literature

• implementation and application of approach on a benchmark component

• verification of results via dynamic FE simulation

• validation of the new approach through experimental testing

location: Schaan/Kaufering