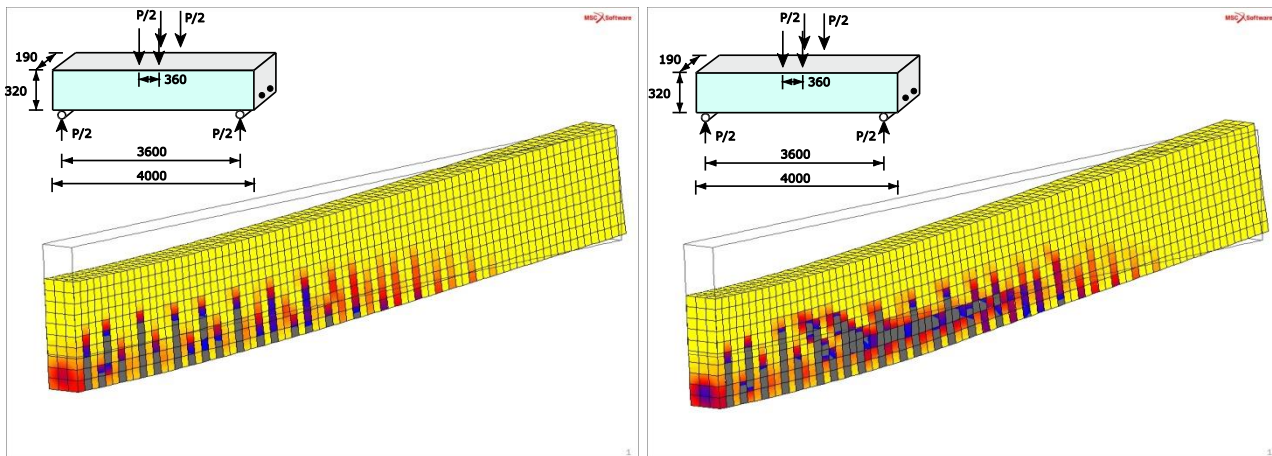*Master's Thesis*

Modeling of reinforced concrete with slightly weakened interfaces

Supervisor: Dr.-Ing. Michael Hofmann

Background: The reinforced concrete is used commonly as construction material. At Institute for Structural Mechanics a homogenized macroscopic model is developed, in which the reinforced concrete represented as a composite material. The model contains the constitutive law of each componential material, the effects of interaction and assumes a perfect adherence condition between the components.

Task: The generalization of the model, considering imperfect bonding between concrete and steel. In this case it is necessary to modify the Eshelby tensor, which is used to define the effective properties of the reinforced concrete as composite material with slightly weakened interfaces. The algorithmic formulation of the modified material model for reinforced concrete should be implemented in the FE-program Msc.Marc.

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