

PROJEKTARBEIT (MA BI)

CASE STUDY (MA CE)

Crack propagation analysis using X-FEM – Loading

Fatigue assessment is an important issue for steel structures. Many structures, e.g. bridges, crane runway beams or wind energy supporting structures are exposed to fatigue loading and therefore predictable for failures.

In this case study the students should focus on the numerical crack propagation of steel structures using the X-FEM-Method in ABAQUS. The aim of the study is, to implement different cyclic loadings in the crack propagation analysis. The study should consider constant-amplitude loading with different stress ratios (only 1 student) and non-constant cyclic loading (group work). The results have to be evaluated regarding to the crack path and crack propagation curves.

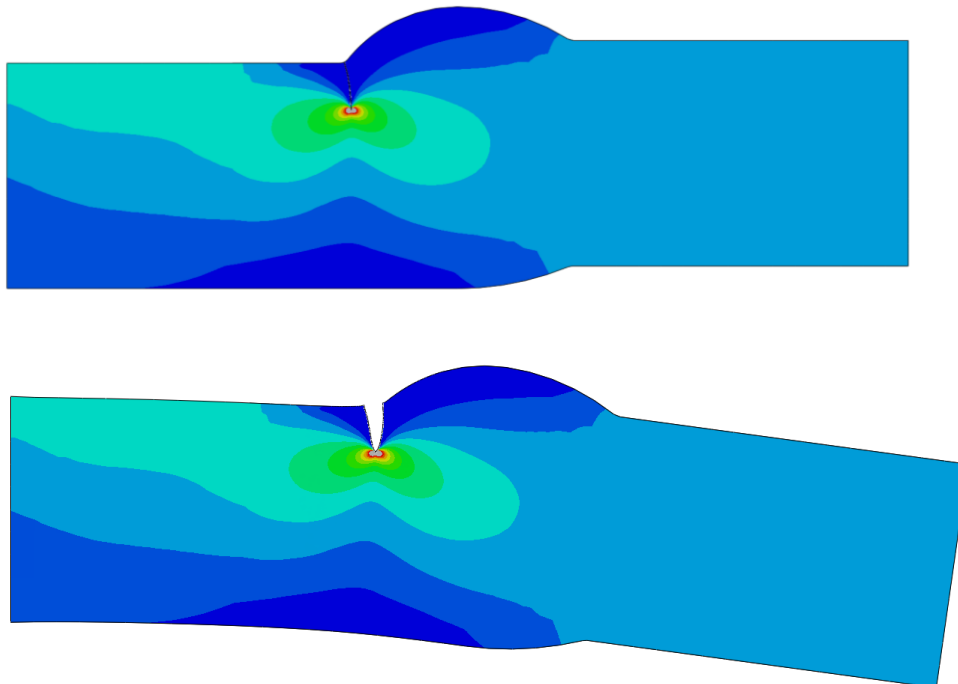


Fig. 1. Crack Propagation Analysis using X-FEM.

If you are interested in doing this case study in cooperation with our chair, contact Ms. Röscher (IC 5-81). Consultation hours are **Tuesdays and Thursdays** from **13:00 to 14:00**.

Bochum, July 2020