

Master thesis!

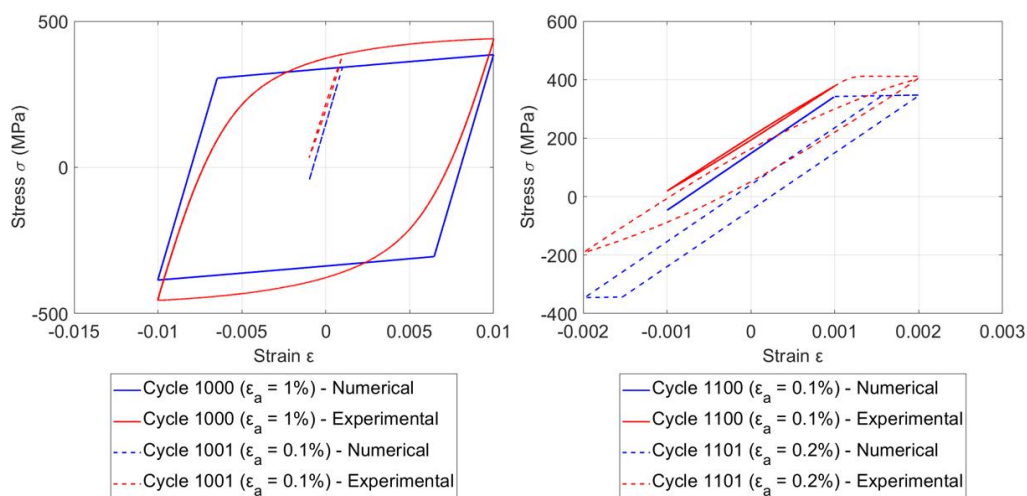
Matlab coding of a multiaxial hardening model for steels

Motivation

Using a strain-based approach it is possible to describe the fatigue life by the damage model of Smith, Watson and Topper. Therefore, it is mandatory to describe the stress and strain loading of the material in each cycle. For load situations in the low cycle regime a hardening model is mandatory to describe the plastic stresses and strains. Based on an existing Matlab routine for uniaxial load situations a hardening model for multiaxial (biaxial) load situations should be implemented. An evaluation of the code can be done using existing experimental data of uniaxial and biaxial loading.

Taks:

- Literature review to multiaxial hardening models
- Review of the existing MATLAB code
- Review of the existing experimental data
- Extension of the existing code to a biaxial load situation
- Evaluation of the model using the existing experimental data
- Scientific poster as a summary of the thesis
- Documentation (Master thesis)



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