FATIGUE ANALYSIS UNDER CHANGING LOADPATH CONDITIONS

Problem Description

- The development of reliable working tools requires robust design rules for fatigue.
- Loads are transferred over different connections (e.g. thread, numerous bolts) using multiple loadpaths that might change over time.
- A correct prediction under multiple loadpath conditions is complicated by the presence of damage and its interaction with the local stiffness.

Objectives & Tasks

- **Survey** of performed fatigue tests at Hilti.
- Evaluation of the **current analysis methods** (based on FEM) with available test results.
- Evaluation of **commercially available fatigue tools** (e.g. FEMFAT or Ansys Fatigue)
- **Propose improved design methodology** for fatigue analysis under multiple loadpath conditions and damage.