TRIP steels are known for the excellent combination of strength and formability. This is caused from the strain-induced transformation of retained austenite. The austenite phase is usually stabilized by carbon enrichment via the bainitic reaction during the heat treatment of the steel. The main area of application of these steels is the automotive sector. The demand for lighter vehicles which consume less fuel and produce less greenhouse gases call for steels with even better properties under static and dynamic conditions. A research effort is underway at LoM, in order to assess the fatigue behavior of TRIP steels. In a collaborative effort with IEHK-RWTH Aachen (Prof. W. Bleck) we studied the effect of retained austenite stability on HCF resistance of a TRIP steel.

In the attachment below preliminary results are presented.