



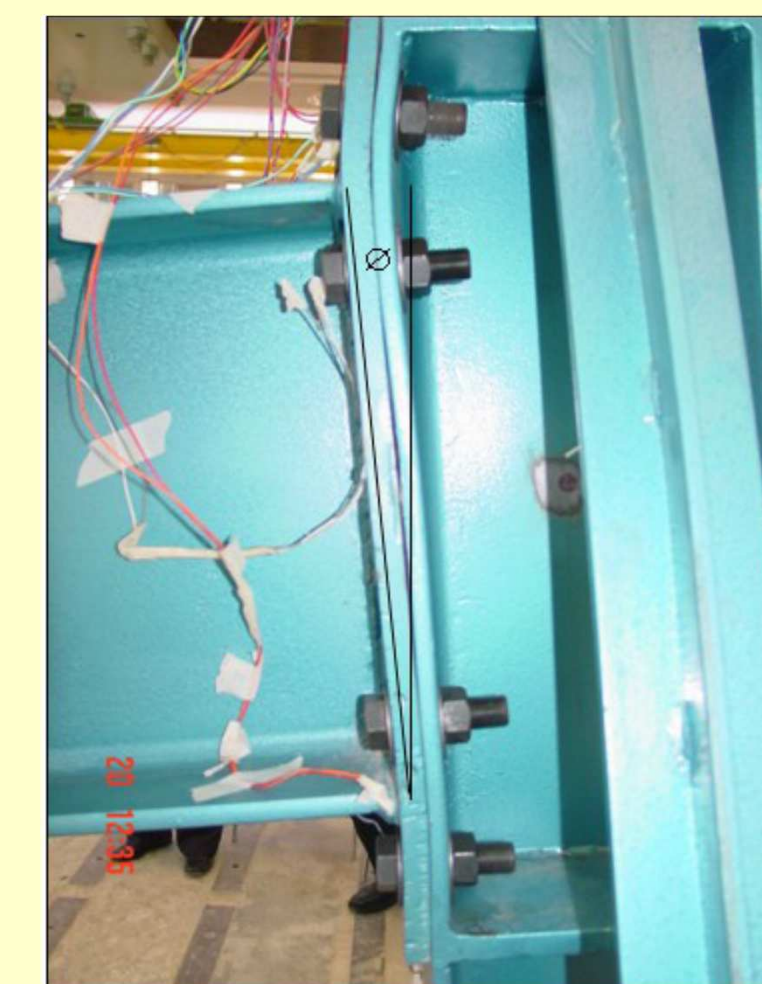
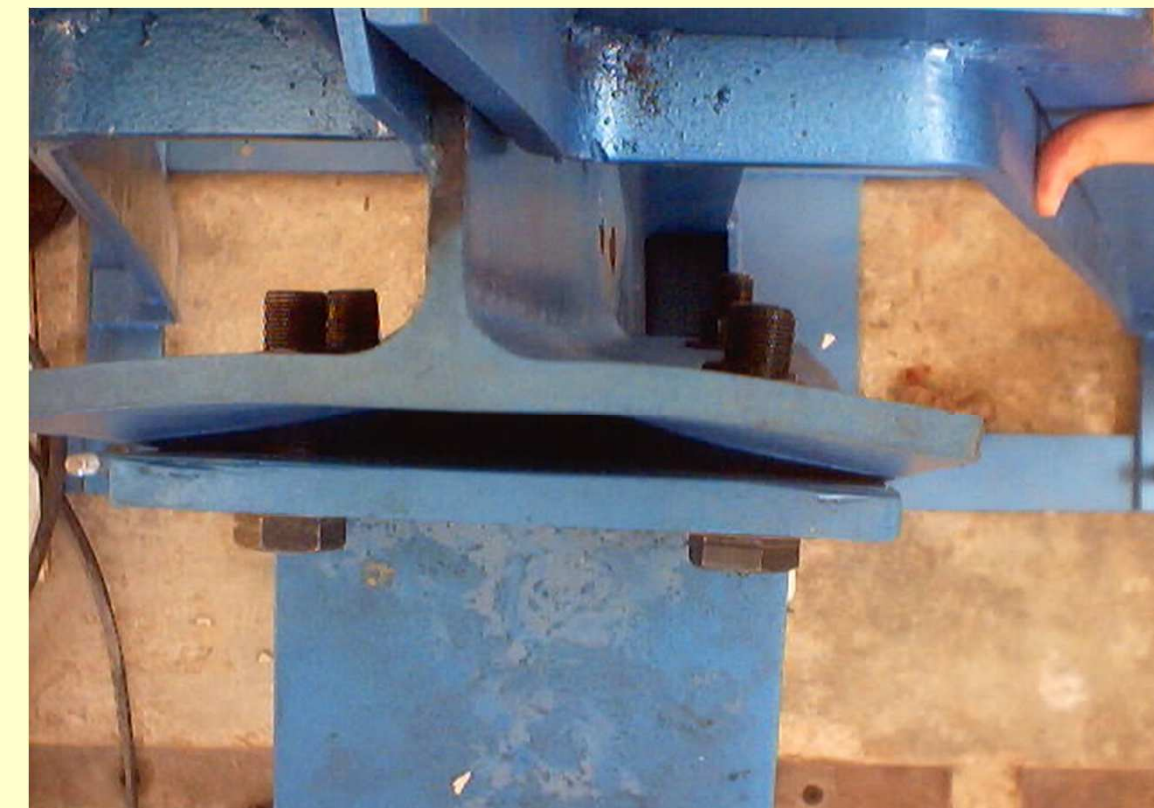
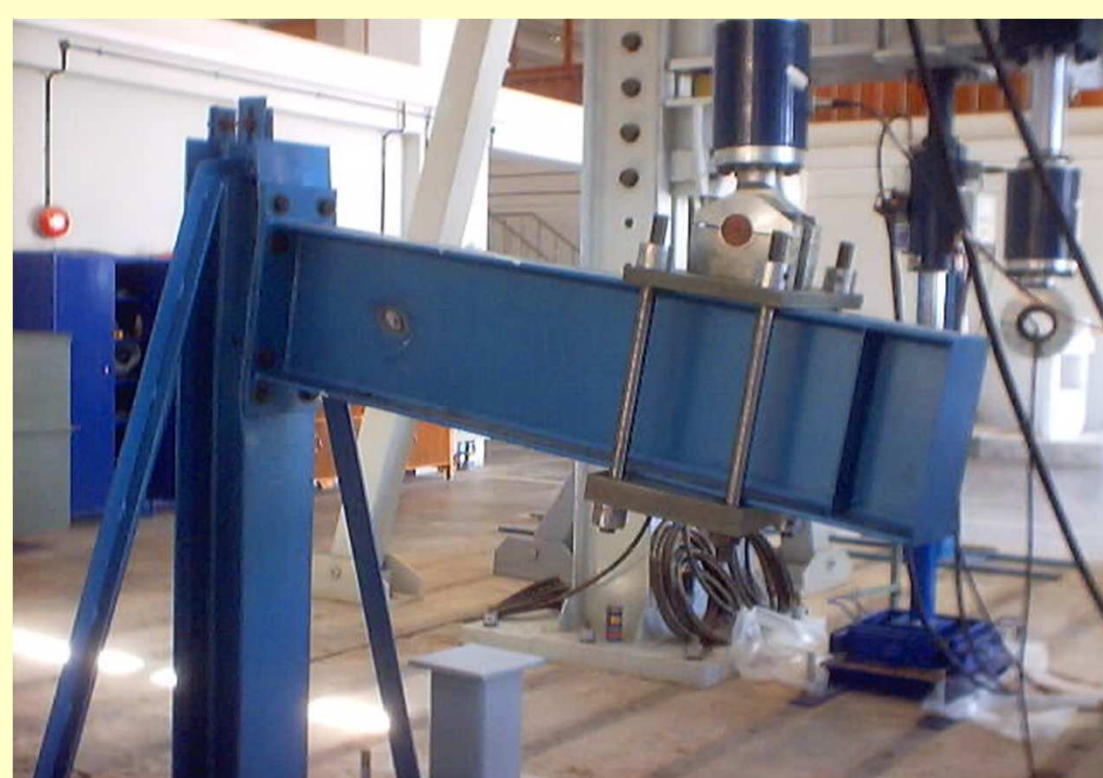
THERMOMECHANICAL NONLINEAR ANALYSIS OF BOLTED STEEL CONNECTIONS USING FINITE ELEMENTS AND CONTACT MECHANICS

Andreas Kalogeropoulos, Georgios A. Drosopoulos, Georgios E. Stavroulakis

MECHANICAL EXPERIMENTS

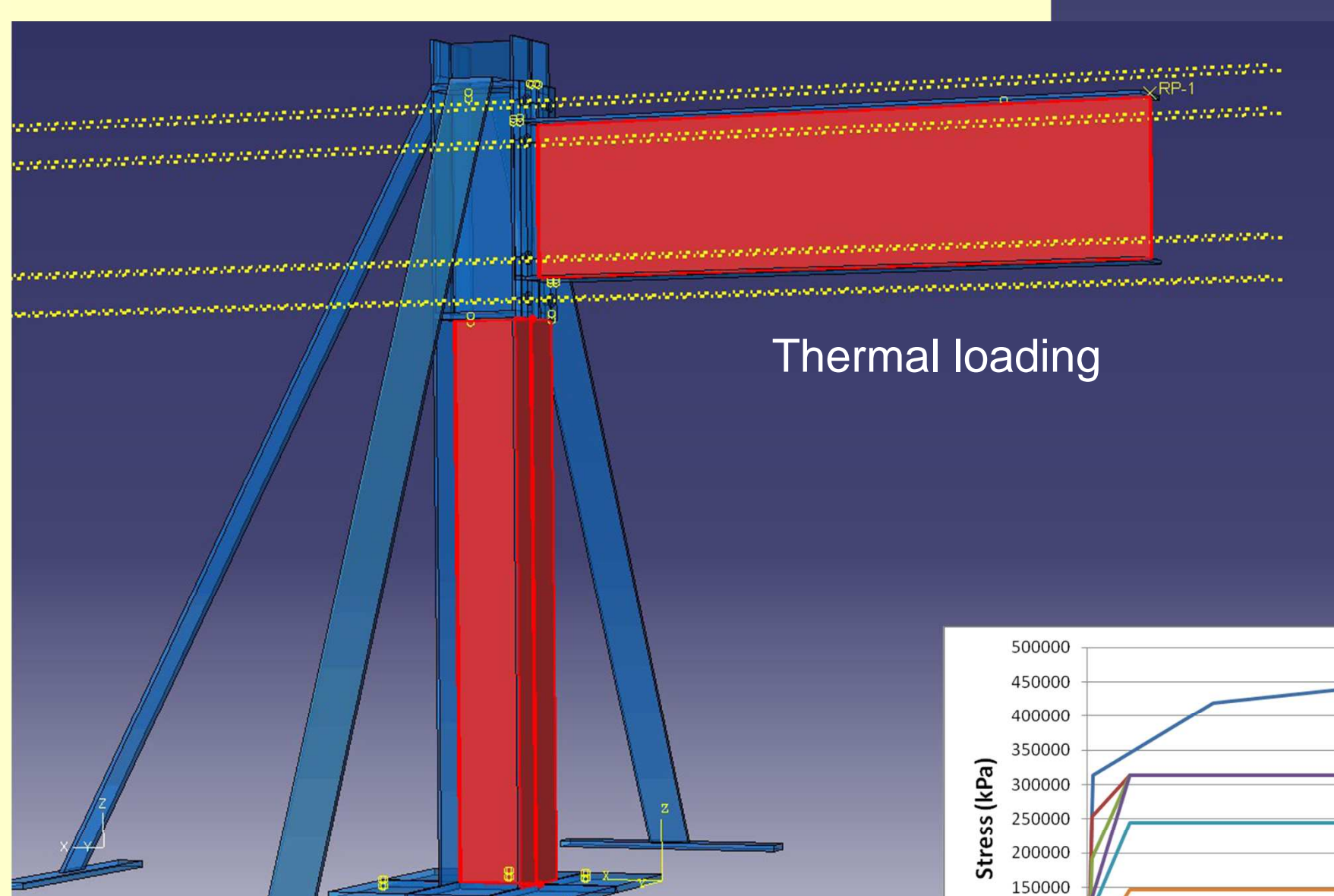
Jordan University of Science and Technology

Prof. K.M. Abdalla

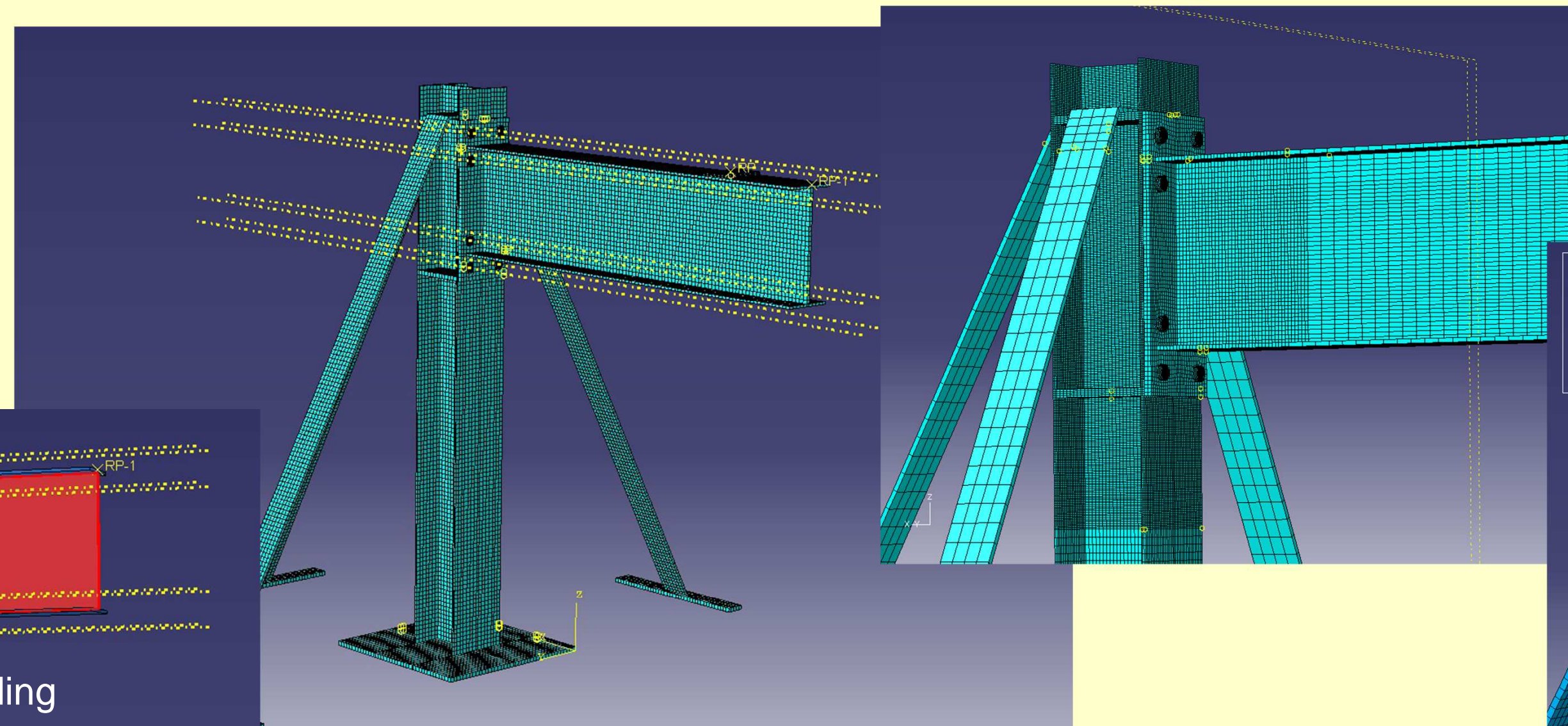


FINITE ELEMENT THERMOMECHANICAL MODEL

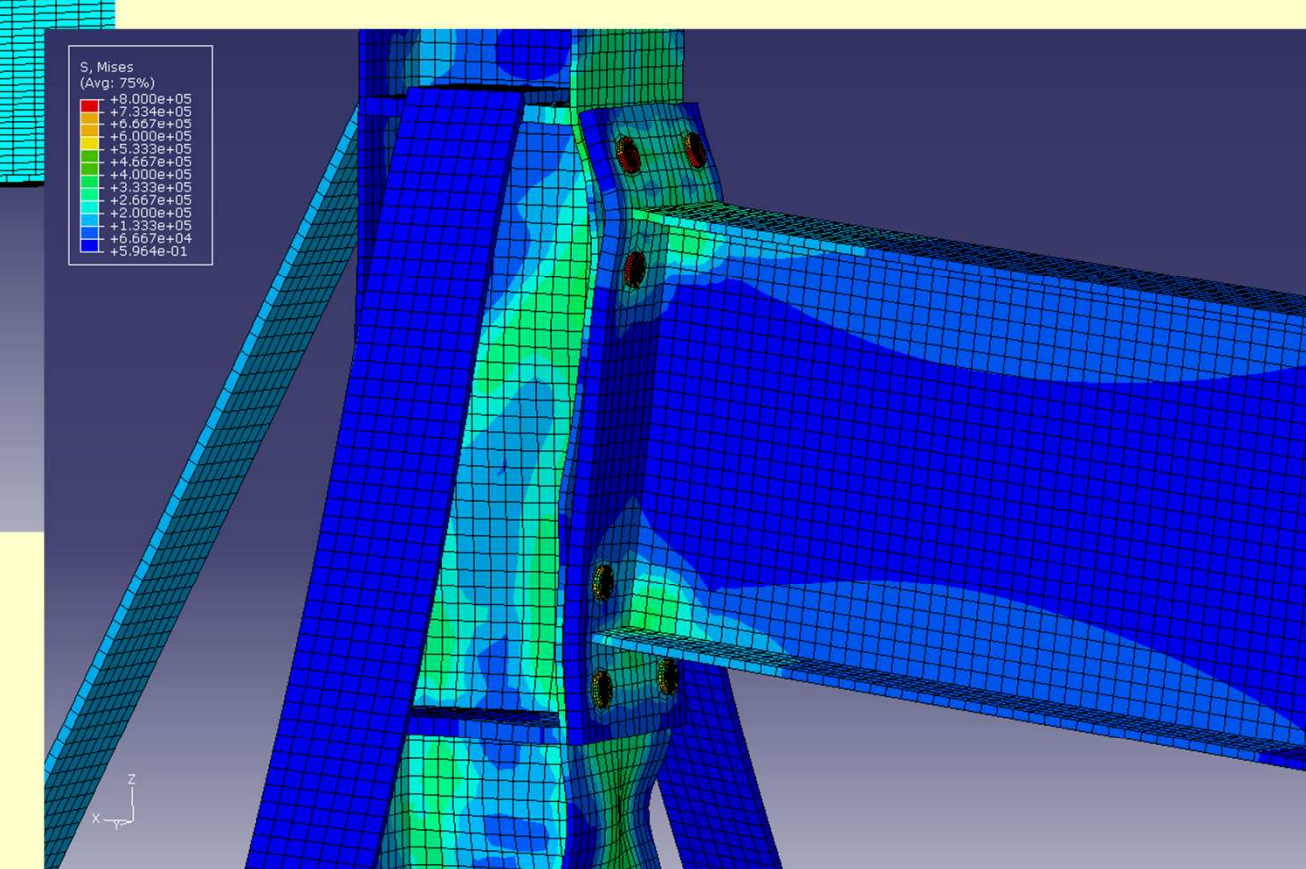
Various loading histories



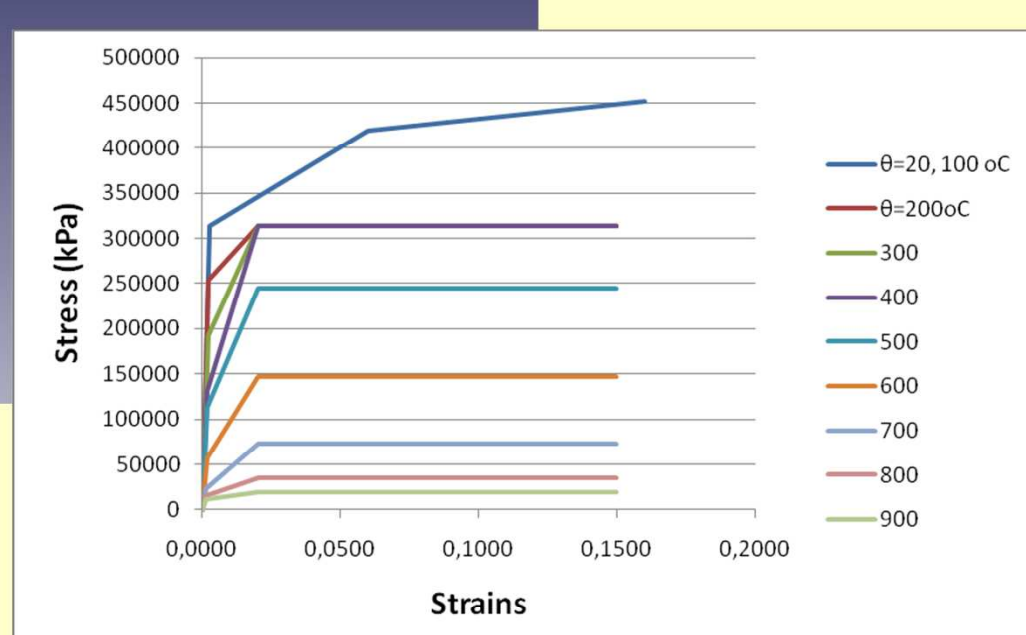
Thermal loading



Unilateral opening due to thermal loading



Unilateral effects due to mechanical loads



Thermal dependence of constitutive laws

COMPARISON OF LOAD-DISPLACEMENT CURVES FOR VARIOUS LOADING SCENARIA

THERMAL LOADING CHANGES THE RELATIVE VALUES BETWEEN FRICTIONAL FORCES AT THE CONTACT INTERFACE AND THE SHEAR FORCES AT THE BOLTS

