**COUPLED STRUCTURAL AND THERMAL ANALYSIS OF A SIMPLE STEEL LINK**

**ABSTRACT:**

The purpose of this project is to outline a simple coupled thermal/structural analysis. A steel link, with no internal stresses, is pinned between two solid structures at a reference temperature of 0 C (273 K). One of the solid structures is heated to a temperature of 75 C (348 K). As heat is transferred from the solid structure into the link, the link will attempt to expand. However, since it is pinned this cannot occur and as such, stress is created in the link. A steady-state solution of the resulting stress will be found to simplify the analysis

Loads will not be applied to the link, only a temperature change of 75 degrees Celsius. The link is steel with a modulus of elasticity of 200 GPa, a thermal conductivity of 60.5 W/m\*K and a thermal expansion coefficient of 12e-6 /K. The main aim of this project is to do structural and thermal analysis on simple steel link by using solid works and ansys.