

## TEMPERATURE AND THERMAL STRESS ANALYSIS OF A HOPPER WAGON DISC BRAKED WHEEL

Finite element analyses have been carried out on a wheel-disc assembly to evaluate the transient temperature distributions and the attendant thermal stresses caused by braking to a stand and drag braking. The wheel design investigated is one subject to particularly high thermal loading, as it is used on certain hopper wagons with one brake per axle; several of such wheels have been found with large cracks. The calculations show that thermal stresses well beyond yield will occur around the inner bolt holes in the wheel web, and that these stresses are close to measured values.