**Problem Statement:**
Scanning induction hardening process of Truck Axle made of AISI 1540 is modeled. Process needs to be improved to reduce distortion and obtain favorable residual stresses.

**Process Description:**
Power distribution modeled by Flux is mapped and imported into DANTE. One single tooth sector is modeled with cyclic symmetric boundary condition. Polymer spray follows by inductor heating.

**Benefits:**
Induction heat into the axle is optimized to reduce residual tension under the surface. Surface compression is enhanced with optimum case depth. Spray severity is designed to reduce distortion.

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