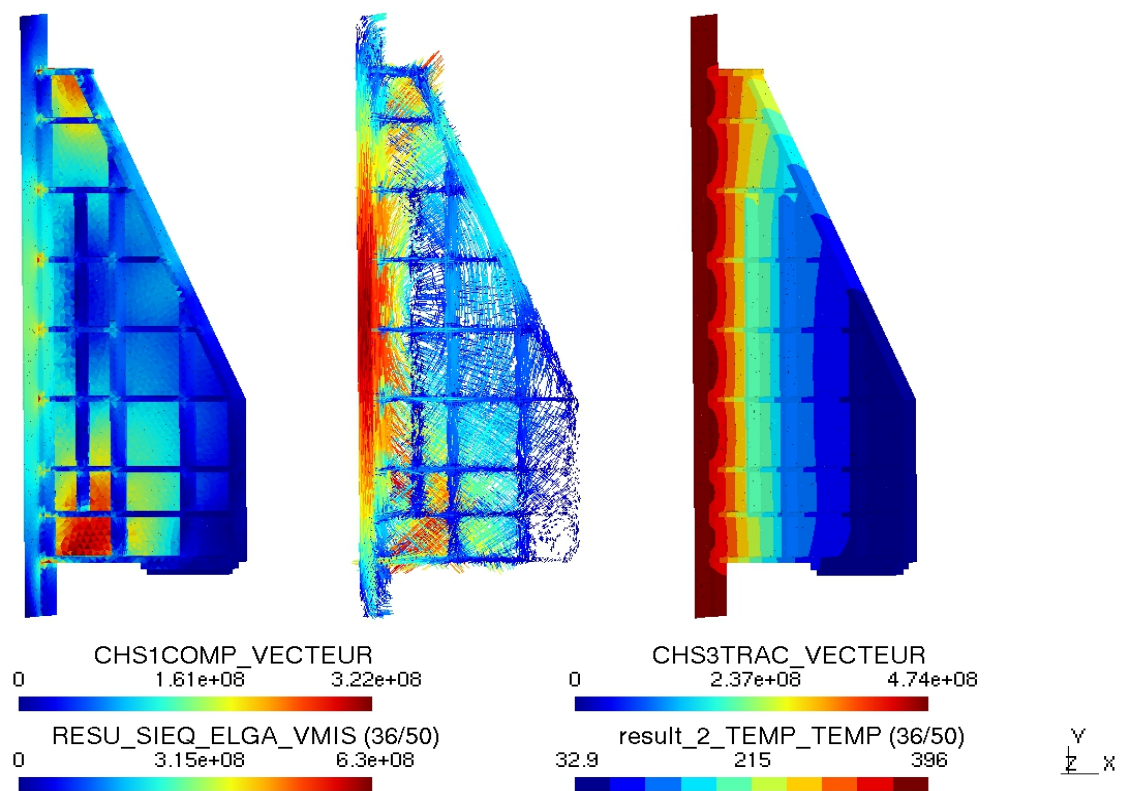


Thermal transfer in the support of a reactor

The purpose of this study was to evaluate the thermal transfer in the supports of an industrial reactor when the temperatures, inside and outside of the reactor, were imposed.

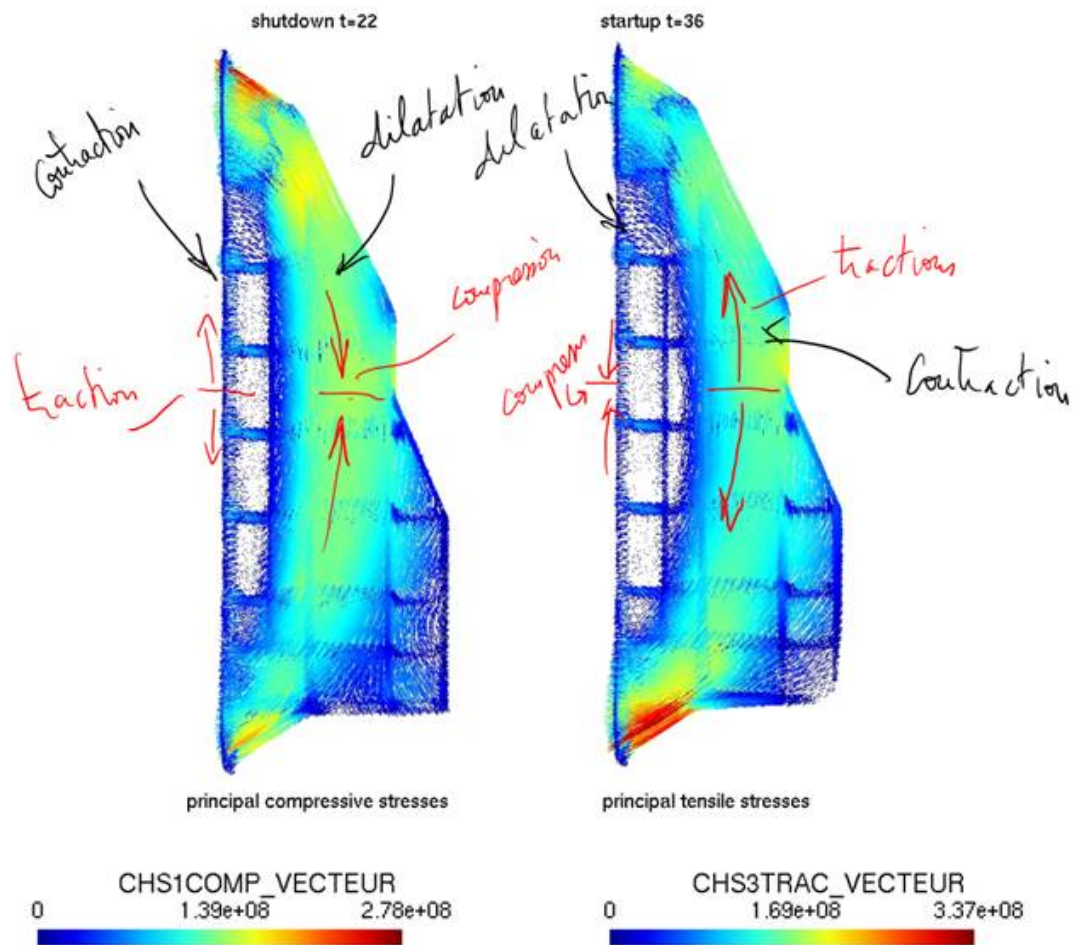
The stresses involved by the temperature gradients were also evaluated besides the stresses due to the mechanical loads.

The max principal stresses (crosses representing intensity and direction of the principal stresses) and Von Mises stresses that occurred during transient phases and normal working conditions were evaluated.



Start-up step after 9min - From left to right : Von Mises Stresses - Stress crosses - Temperature

Stress crosses allowed to see the principal compressive and tensile stresses in the support



After several trials, a solution was found to achieve acceptable levels of stress in the support with a combinaison of thermal isolation configuration, reinforcement of some specific areas of the support with additional steel plates and removal of mass in other parts of the support.