

**ANALYSIS OF THE ITER CENTRAL SOLENOID (CS) BY THE US PARTICIPANT TEAM (PT)**

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The ITER CS is in an advanced state of design. Detailed analysis continues. In this paper, finite element analyses done by the US PT are presented. These are related to a few issues still requiring some resolution. Finite element analyses by the ITER International Team (IT) and other US PT analyses are quoted for comparison with the finite element results.

The degree of preload required to offset vertical tensions in the coils will be discussed. Parametric analyses of different preloads and friction coefficients have been performed which point to a lower preload than that specified by the project.

Lateral loading on the CS due to postulated off center electromagnetic loads are quantified. Lateral seismic loads are applied, and the existing and proposed restraint systems are discussed. Behavior of the upper flex supports is also available from the simulation model and will be compared with previous work.

The coil leads are supported by the preload system tieplates. Radial differential motion between the tie plates and coils is quantified for the case where there is no radial coupling between the coil and tieplates. Coupling of coils to plates with is discussed. Support provisions for these leads are discussed in the context of both load capacity and displacement absorbing ability.