
ZZZZ342 - Validation of ELAS_HYPER in small disturbances

Summarized:

This test validates constitutive law ELAS_HYPER :

- compared to an elastic linear computation (Hooke's law) on the assumption of the small disturbances (HP);
- by checking, into compressible, the equivalence of the formulation according to whether the Poisson's ratio or ν the modulus of compressibility is informed K ;
- by comparing the total formulation (COMP_ELAS) and incremental (COMP_INCR) of the constitutive law.

A cube of on the east side 1 mm embedded at its base and subjected to a loading of uniform pressure equal to 1 Mpa at the other end. The material is Néo-Hookéen ($C10=300\text{ Mpa}$, $\nu=0,25$).

The reference solution is of type AUTRE_ASTER and it is obtained by an elastic linear computation with the Hooke's law for an equivalent Young modulus on the assumption of the small disturbances ($E=1500\text{ Mpa}$).

The results got in displacements as in stresses are in very good agreement with the reference.

This test comprises three modelizations:

- modelization a: D_PLAN
- modelization b: C_PLAN
- modelization C: 3D

This documentation is voluntarily brief.