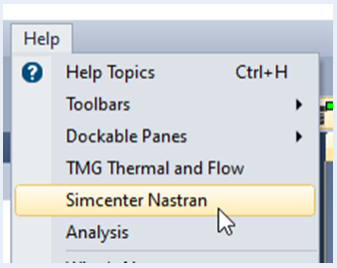
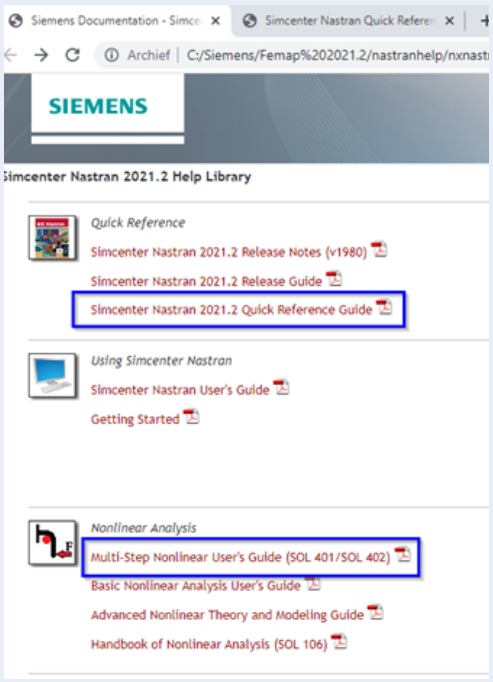
basics 401/402 solver

Where to find your information.

manual

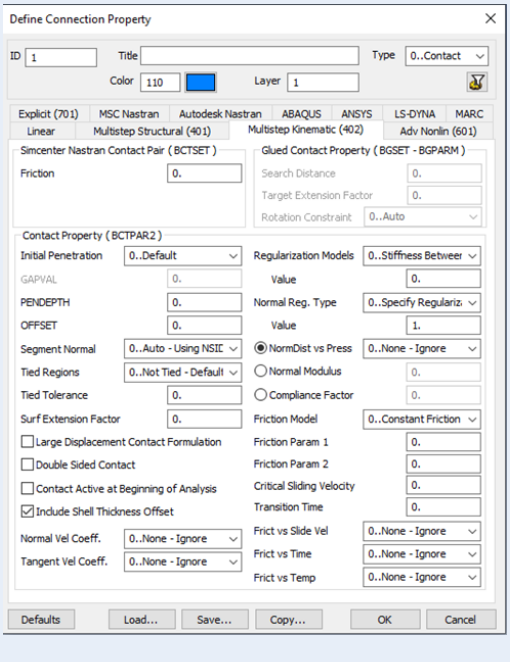
See Quick Reference Guide and Multi_Step User's Guide for more information.





contact property Femap help

At the Define Connection Property window in Femap, press F1 to get extensive help on the connection parameters.

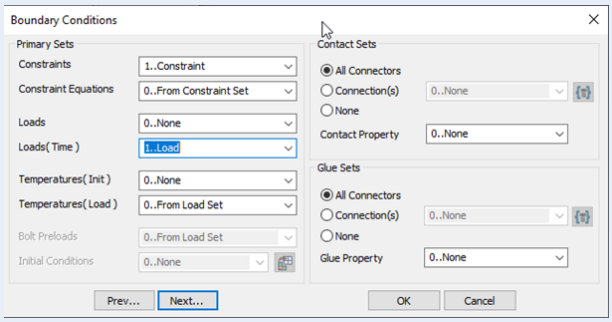


basics 401/402 solver

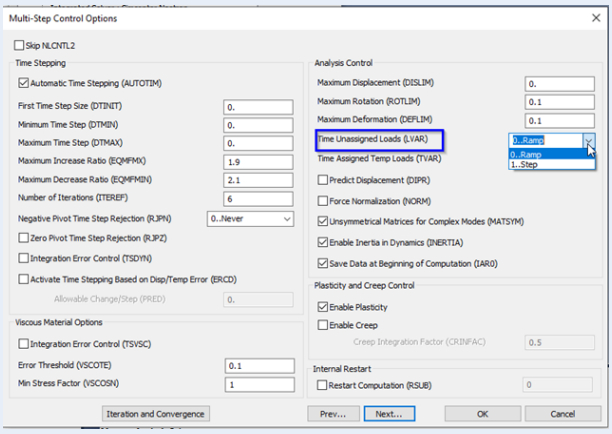
Where to find your information.

loads

If time functions are used to define the load, at the boundary conditions the load set must be defined at Loads (Time)

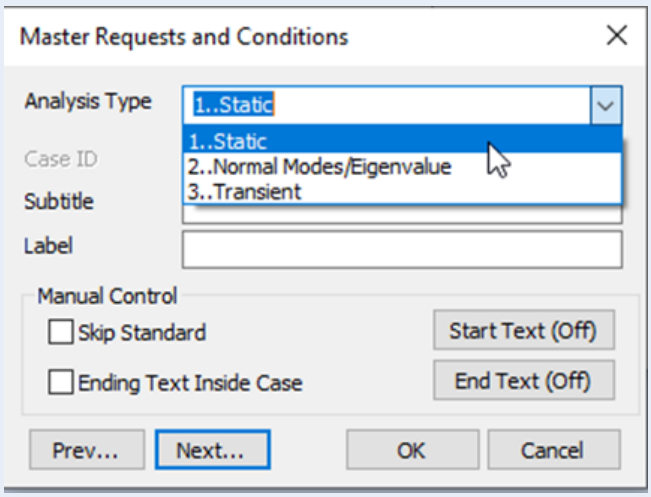


If no time functions are used to define the load, parameter LVAR decides if the load should be ramped or applied at once.



settings

In the analysis set manager you can find the default settings. In the following slides some suggestions are made whether or not to keep the default settings.



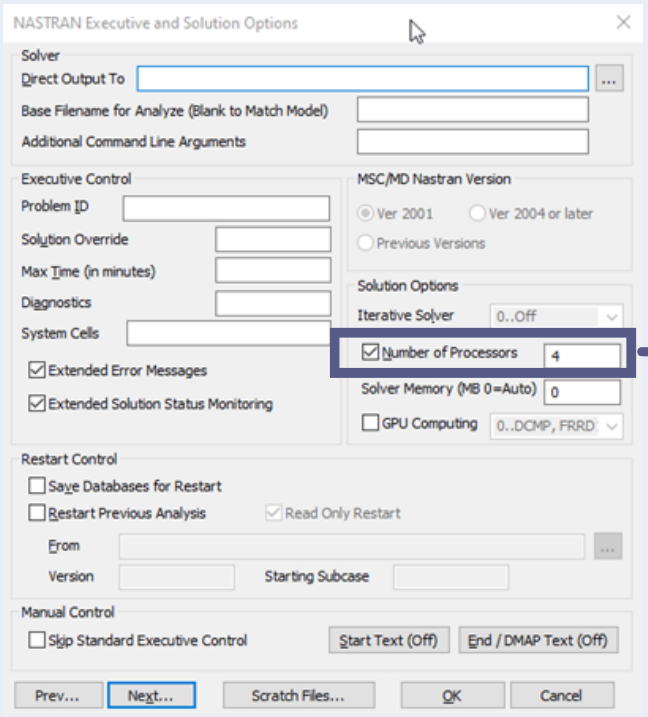
In the Master Requests and Conditions the different Analysis Types can be chosen.

For any requests remarks or

settings sol 402

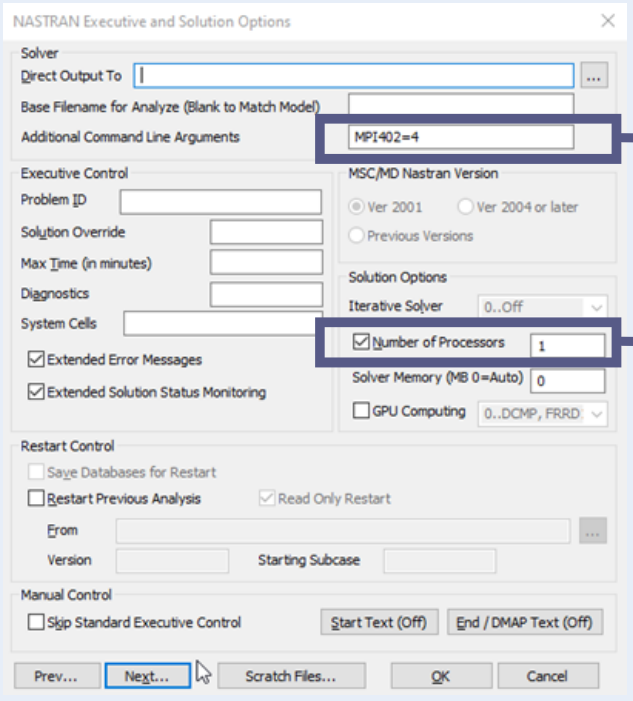
Executive and Solution Options

sol 601



Number of real processors(cores)
601 only supports SMP parallelism

sol 402



This command switches on DMP parallelism for 4 cores.
For DMP > 4 an extra license is needed.

In Sol 401 DMPPARALLEL = 4

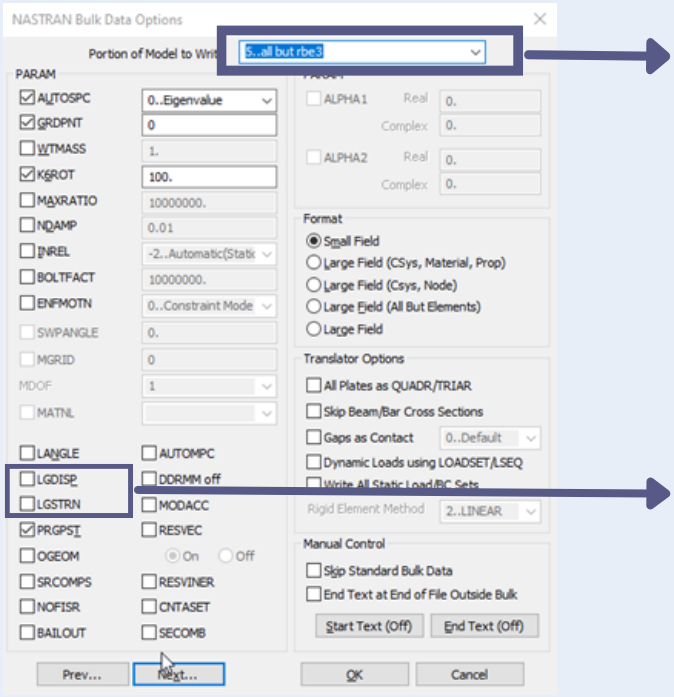
Mixed DMP/SMP parallelism possible:
If Number of processors =
2 then 4 additional SMP cores are used:
SMP*DMP = 2 * 4 = 8.

SMP*DMP should not exceed the number of real processors of your machine.

Bulk Data Settings

Sol 402

601

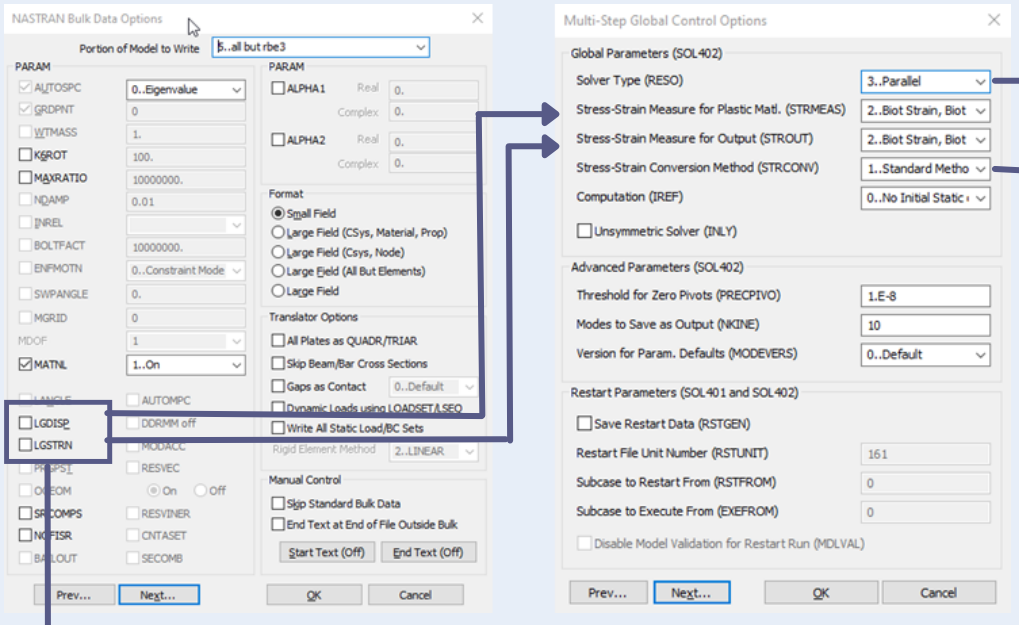


Number of real processors(cores)
601 only supports SMP parallelism

Small displacement and small strain formulation

Sol 402 Leaves STRMEAS and STROUT to 2:Engineering values

402



RESO to "Parallel" mostly is faster

Preferred to the default "exact method"

LGSTRN checked would switch on STRMEAS and STROUT to 1:True values.

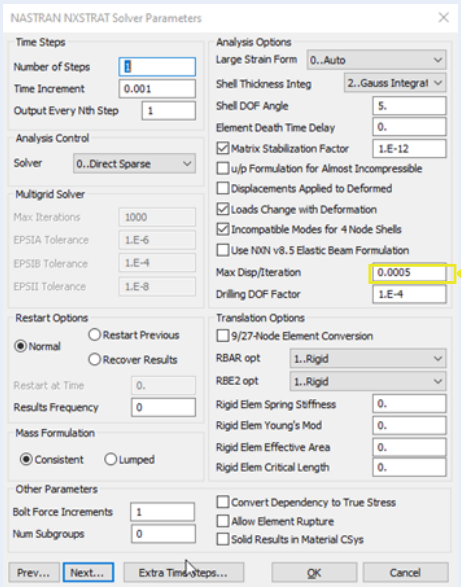
In contrast to 601 it is possible to use an engineering material curve, convert it internally to a TRUE curve, do a LGSTRN simulation (STRMEAS=1), and convert the results back (STRCONV) to Engineering values (STROUT=2) for direct input curve/output value comparison.

setting Sol 402

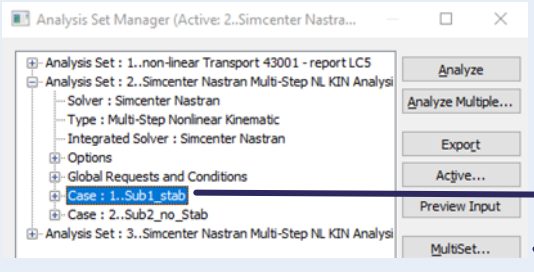
If settings in the beginning of the analysis require different settings, e.g. due to contact settling, then subcases can be useful.

401/402: Subcases supported to modify solution settings in contrast to 601 (where a restart would be required)

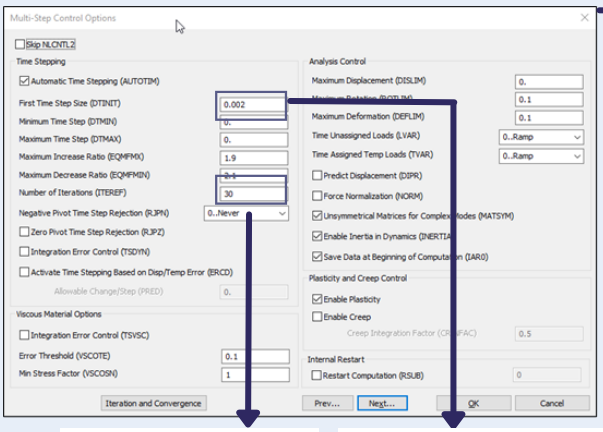
601

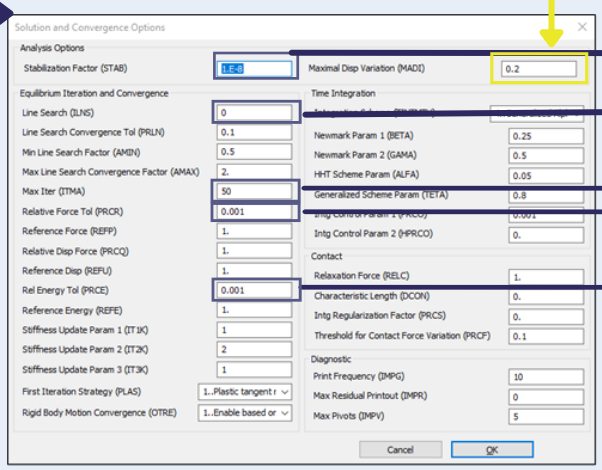


402



Subcase Settling





Subcase setting: More stabilization

No Line search (1=line search)

Increased to default

Force convergence tolerance: additional check compared to 601 setting

Energy convergence tolerance default 1E-3 kept…601 setting: 1E-4

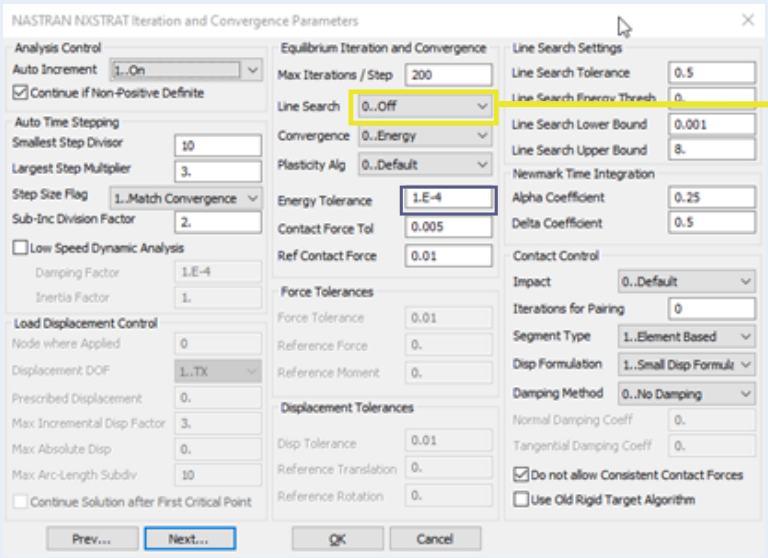
Increased to default

Start value in case of automatic time stepping checked

setting Sol 402

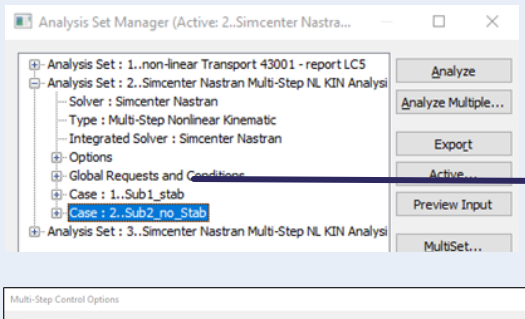
401/402: Subcases supported to modify solution settings
in contrast to 601 (where a restart would be required)

601

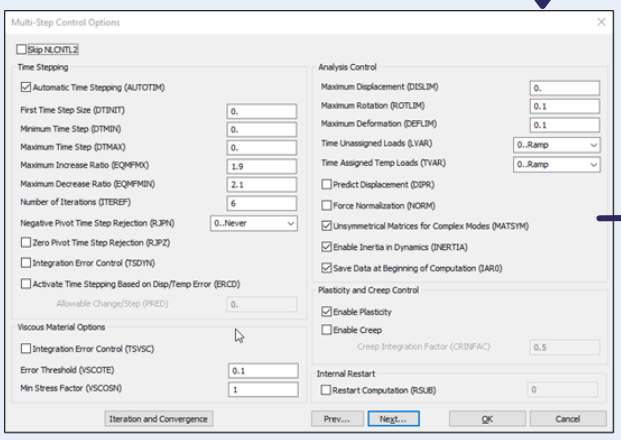


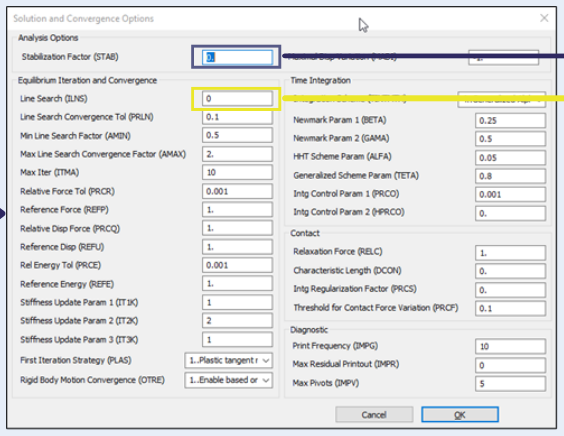
No Line search

402



Subcase loading



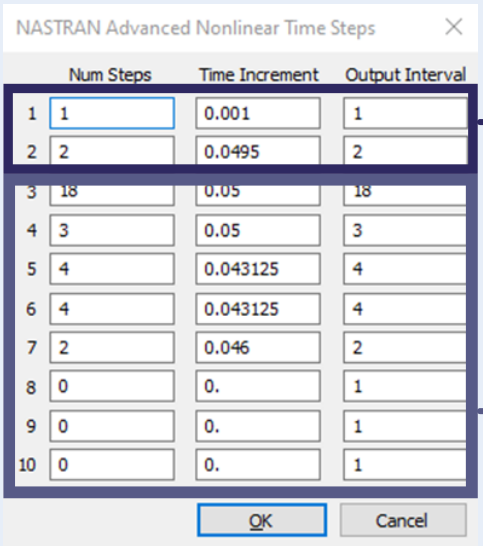


Subcase setting: no stabilization(default)

No Line search
ILNS = 1, then Line Search

setting time steps

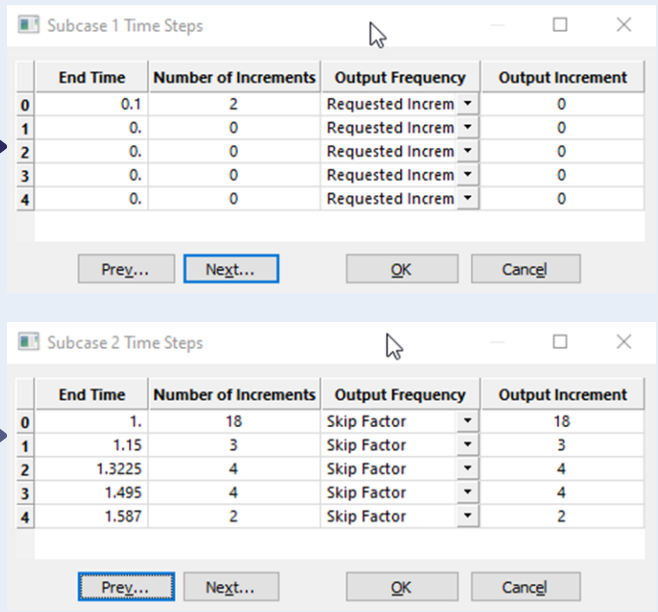
601



Settling subcase

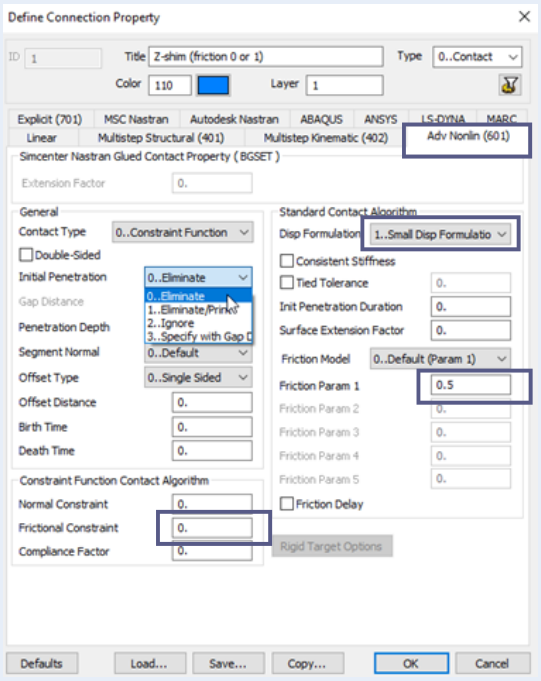
Loading subcase

402

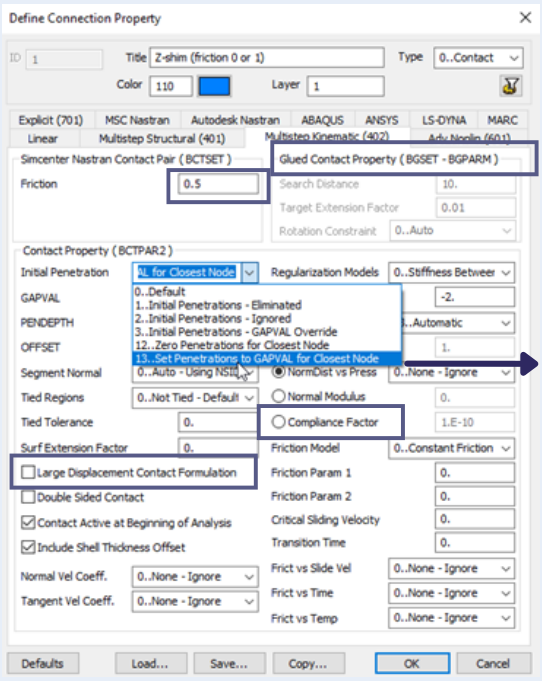


contact settings

601



402

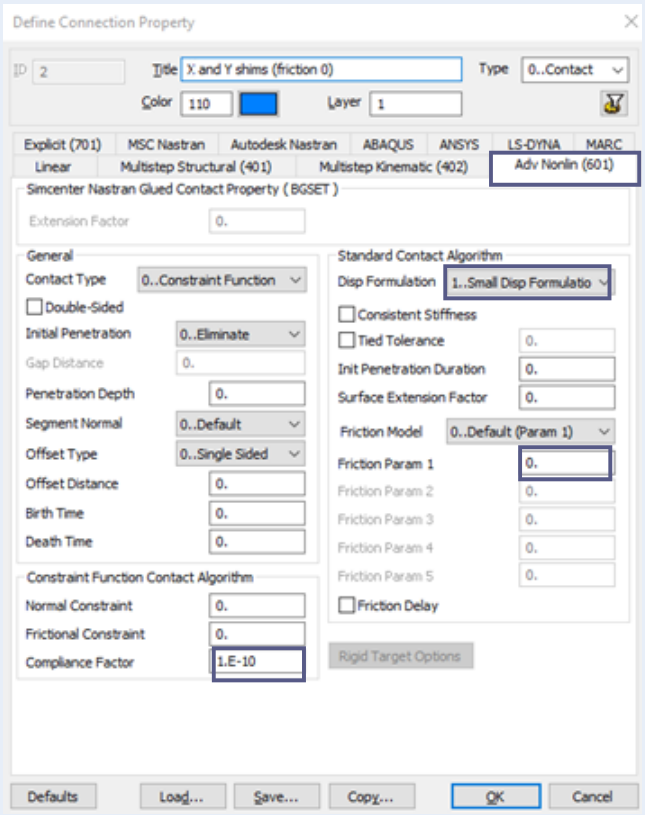


Additional option 13 specified: The contact region is shifted with the very small (unphysical) initial penetration of the closest node (See f06), such that the closest node becomes initially stress free touching.

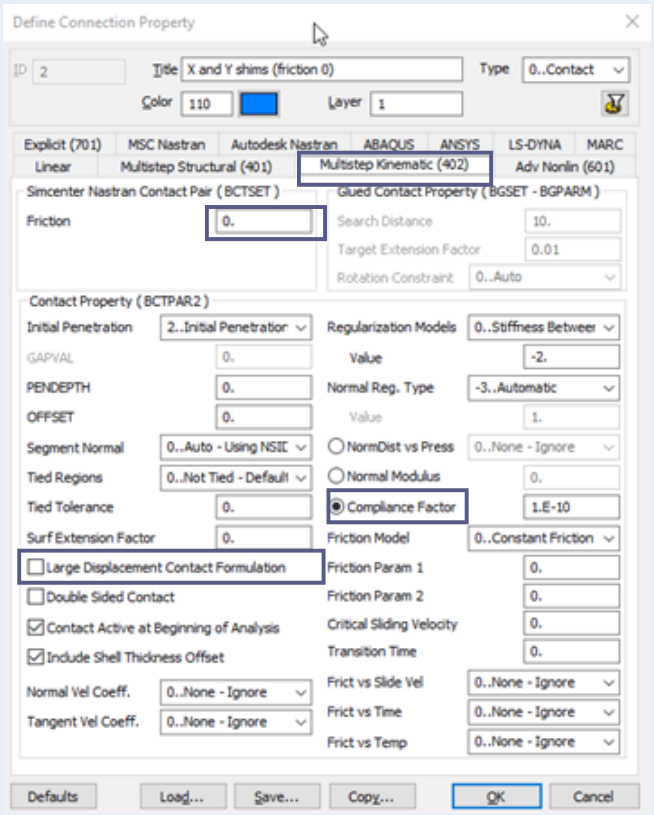
Connection property with friction, without compliance

example contact settings

601



402



Connection property without friction, with compliance