

ANSYS Class3 Error Report

ERROR NO:

2013-07

Keywords:

SUBSTRUCTURE MASS MATRIX DAMPING MATRIX SPARSE SOLVER

Description of Error:

When performing a substructure analysis generation pass [ANTYPE,SUBSTR] to create a superelement using the sparse direct solver [EQLV,SPARSE], the reduced mass matrix, and the reduced damping matrix if chosen, may be incorrect. The error only occurs under the following conditions:

1. The SEMATR field on the SEOPT command must be greater than 1 (so as to generate the reduced mass and possibly the reduced damping matrices), and
2. The sparse solver must be started in the optimal out-of-core memory mode.

Condition (2) requires that the sparse solver be "started" in the optimal out-of-core mode. It can be difficult to know which memory mode the sparse solver started in, even upon reviewing the output file data. This is because the solver may start in the optimal out-of-core mode and later allocate enough memory automatically so as to use the incore mode during the numerical reduction calculations which generate the reduced matrices which are then written onto the .sub file.

Typical GUI Path(s):

Main Menu>Solution>Analysis Type>Analysis Options

2Other Comments:

This error could affect both substructure and component modal synthesis (CMS) generations.

First Incorrect Version:

Release 14.0

Corrected In:

Release 15.0

Suggested User Action For Running on Uncorrected Version:

The only available workaround is to force the sparse direct solver to run using the incore memory mode [BCSOPT,,INCORE]. Users should be aware that this memory mode requires significantly more memory than the out-of-core memory mode and on some systems, if there is not enough physical memory available the program may fall back to the optimal out-of-core mode which may result in the conditions being met to allow this error to affect the results for the reduced mass and damping matrices. When using this workaround, users must ensure that the solver stays in the incore memory mode and no warnings are given stating that the solver is falling back to the optimal out-of-core mode.

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