# NASGRO v8.21 Additions, Changes and Fixes by NASGRO Module

23-Oct-17

| Category | Applicable NASGRO Module | | | | | | | | | | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | NASGRO Main | Config Control | NASFLA | NASSIF | NASCCS | NASGLS | NASMAT | NASBEM | NASFORM | Users Manual | |
| | | | | | | | | | | | |
| Addition | | | | | | | | | | X | Appendix Z: "High Cycle Fatigue Threshold Check" was added. |
| Change | | | | X | | | | | | | Expanded the maximum number of crack size entries in NASSIF from 500 to 2000. |
| Fix | | | X | X | X | | | | | | Corrected a display problem when changing crack cases from SC30 to SC17: the crack case diagram displayed remained as SC30. |
| Fix | | | | X | X | | | | | | NASCCS and NASSIF crash when switching units after a crack case is selected. |
| Fix | | | X | | | | | | | | SC30 subjected to uniform tension showing inconsistency in predicted final life for two cracks of same offset from center. The bug was corrected for parameters being overwritten in routines assigning geometric parameters prior to computing SIFs. |
| Fix | | | X | | | | | | | | Crack transition from EC04 to CC09 and then to TC12 resulted in infinite fatigue life. The error was from the missing implementation for polynomial stress conversion during CC09 transition into TC12. The fix implemented such stress conversion. |
| Fix | | | X | | | | | | | | Computation terminated during SC26 transition into TC17. The termination was due to the incorrect designation of an internal parameter describing the number of DOFs with crack model during crack transition. This has been corrected. |
| Fix | | | X | | | | | | | | During the loading of a NASFLA GUI input file, the input file value of the material parameter "C" (the Paris constant) was not being compared against its database value, and if different, would be missing from the list of differences presented to the user. |
| Fix | | | | | | | X | | | | When creating a material ID using the "Build an ID" button on "Enter da/dN Delta K" or "Enter a vs. N" tabs, the cells are not properly populated, displaying the "Cond/HT" cell values in the "Alloy" cell. |
| Fix | | | X | | | | | | | | CC10 stress input echo mislabeled and normalized X is incorrect. The mislabeing was because the specific column labels for crack at a hole should be used instead of the general labels for crack in a plate. The fix has corrected this issue. |
| Fix | | | X | | | | | | | | On the "Materials Tab", the Material ID can become corrupted when switching units multiple times. |
| Fix | | | X | | | | | | | | Transition from SC28 to TC19 terminated with error message shown in SCREEN.OUT. The designation of an internal parameter for DOFs in SC28 was found inconsistently assigned. The correction has been included in the fix. |
| Fix | | | X | | | | | | | | EC04 NASFLA computation terminated with incorrect failure message (outside geometry bounds) in SCREEN.OUT file. The error was from incorrect assignment of width and thickness when transitioning from CC09 to TC12. The fix contains such correction. |
| Fix | | | X | | | | | | | | Stress and cycles details are missing from the Load Blocks tab when loading a "frequently used schedule". |
| Fix | | | | | X | | | | | | Crack Case TC02 does not properly display the "bending constrained" option. |
| Fix | | | X | | | | | | | | When plotting tensions & compression data or t1,t2 data from the "Geometry" tab with the OPS option selected, no OPS data is plotted. |
| Fix | | | X | | | | | | | | Crack Cases SC13, SC14: When switching to SC13 or SC14 in Units system three, or when switching between units when SC13 or SC14 is selected, the GUI would not properly display the major and minor diameter geometry boxes when appropriate or would display multiple copies of those geometry boxes. |
| Fix | | | | X | | | | | | | Odd behavior of TC13 crack plane stress subjected to pin load for large plates. The Fix contains the reworked interpolation scheme to correct such odd behavior. |
| Fix | | | X | | | | | | | | When loading an elastic plastic input file, the Cth/Fth controls were being erroneously displayed on the Materials tab. |
| Fix | | | X | | | | | | | | When running cases in Units system Three or Four the materials constant "a0" was not being converted to the proper metric system |
| Fix | | | X | | | | | | | | Crack Case TC11 did not run when "symmetric crack with symmetric stressing" option was selected. |
| Fix | | | X | | | | | | | | Incorrect total number of cycles when invoking temperature interpolation. The error was identified due to the missing check for the positiveness of p-values in temperature interpolation scheme. This led to a different path to count cycles. The fix contais such correction. |
| Fix | | | X | | | | | | | | TC28 labeling issue where "c2" should be used instead "a". The correction has been included in the fix. |
| Fix | | | | | | | | | | X | Appendix Q: Corrected status of Material ID G2CF13AB1, which had been removed from the NASFLA material file in v7.11 (because of bad data) |
| Fix | | | | | | | | | | X | Appendix C: Corrected faulty statement regarding Fp factors |
| Fix | | | | | X | | | | | | Corrected a printing error in the header output for critical crack size calculation in the out1 file |
| Fix | | | X | | | | | | | | Crack cases KT01, KT02, and KT03 were erroneously showing the HCF threshold check options. |
| Fix | | | X | | | | | | | | Crack cases KT01, KT02, KT03: the "Load Blocks" tab's option to "check for exceedance of an HCF threshold" has been blocked for these crack cases. |
| Fix | | | X | | | | | | | | NASFLA crashed when saving "new data" to the user material file. |
| Fix | | | X | | | | | | | | In the sample user file "USRTBC.xml", the material "Q32D" was malformed, generating an error message about too many R-values when attempting to load it. |

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| Fix | | | X | | | | | | | | Crack case CC10 had an erroneous run-time geometry check. It was validating "c/D2 <=0.9" instead of "c/(B-d/2) <= 0.9". |
| Fix | | | X | | | | | | | | Crack cases TC11, TC12 show "S0" and "S1" on the SIF Compounding tab for remote loading scenarios instead of "S0" and "S2". |
| Fix | | | X | | | | | | | | Column labels in OUT2 files for TC11 and TC12 show S0 and S1 instead of S0 and S2 when remote loads are applied. Such mislabeling is corrected in this fix. |
| Fix | | | X | | | | | | | | On the Load Blocks tab, the "Keac chk?" grid entry for "predefined" and "manual" inputs and the "Check if Kmax>Keac for this block" and "Keac" text control were not properly being set, reset, and cleared when switching between block types. |
| Fix | | | X | | | | | | | | An inconsistent display occurred in DT03 OUT1 file when the number of displayed columns was more than four. This overstacking issue in output display has been resolved by utilizing a revised scheme where number of columns is not a constraint. The fix corrects such a display alignment issue. |
| Fix | | | X | | | | | | | | Increased the number of R-values for which NASFLA 2D tabular material data can be manually entered, read from file, and changed/saved to user file. |
| Fix | | | X | | | | | | | | F0 columns in the OUT2 file for TC12 NASFLA analysis showed different content between DLL and standalone versions. The error was due to an un-initialized flag used to signify if the applied load is at the remote ends or not. This un-initialization issue has been corrected in the fix. |
| Fix | | | X | | | | | | | | Invalid S/Su values in TC15 OUT2 file for TPFC-specific failure locus. V8.2f does not have this issue and the fix for v8.2 has been applied in v9.0a to resolve this issue. |
| Fix | | | X | | | | | | | | Crack Case CC16: When running in "inverse calculation" mode, the geometry check "(D/2+c)/B <= 0.9" was being erroneously applied, blocking computation. |
| Fix | | | X | X | X | | | | | | For crack cases TC13 and CC08, when loading an input file with "Crack in long ligament" selected, the bitmap was not updated to show the crack in the long ligament. |
| Fix | | | X | | | | | | | | Error from repetitive stress points in both TC12 and TC15 was not caught by the Fortran DLLs. The applied fix now catches the error and stops the computation instead of crashing the program because of erroneous input. |
| Fix | | | X | | | | | | | | Long block file can not be opened in NASFLA analysis. This bug only occurred in Linux version. The error was due to un-necessary filename conversion. |
| Fix | | | | | X | | | | | | Crack Cases TC28, TC31, TC32 arecurrently enabled for NASFLA and NASSIF only and were erroneously shown in the NASCCS crack case selection dialog. |
| Fix | | | X | | | | | | | | In the crack case library dialog, the lists for the crack case categories and crack cases would not always be reset properly when switching between the the elasticity types: linear-elastic and elastic-plastic. |
| Fix | | | X | | | | | | | | Cycle-counting options for ASTM rainflow and modified rainge-pair cycle counting were leaving out a load pair. |
| Fix | | | X | | | | | | | | For 2D tabular user material data, when changing the temperature to be viewed, the data in the grid was blanked out and could not be redisplayed, preventing the analysis from running. |
| Fix | | | X | | | | | | | | When using metric units system 3 (mm, mm/cycle, N, MPa, MPa sqrt(m)), the value for Kc was not being calculated correctly when plotting. |
| Fix | | | X | X | X | X | | | | | Metric units system 3 was mislabeled as “mm, mm/cycle, MN, MPa, MPa sqrt(m)” instead of “mm, mm/cycle, N, MPa, MPa sqrt(m)” |
| Fix | | | | | | | | | | X | Replaced Appendix P with the correct version. The previous distribution was outdated. |
| Fix | | | X | X | | | | | | | Crack Case SC27: When selecting “Remote tension” under “Two symmetric cracks” on the Geometry tab, an incorrect batchfile was generated blocking computation. |
| Fix | | | | X | | | | | | | Inconsistency indentified for TC25 SIF when computing net section width. During verification, inconsistency was found where internal definition of "d-r" and "r" were incorrectly switched. |
| Fix | | | X | | | | | | | | When changing between similar Data formats on the Material tab: User multi-temperature <-> NASA multi-temperature, or User single temperature <-> NASA single temperature, adjustments were made to the grid data on the Load Blocks tab (predefined BLOCKS database, and grid for manual entry of cycles and stresses) in an attempt to insert or delete the Temperature column unneccesarily, causing the data in the columns to be misaligned. |