



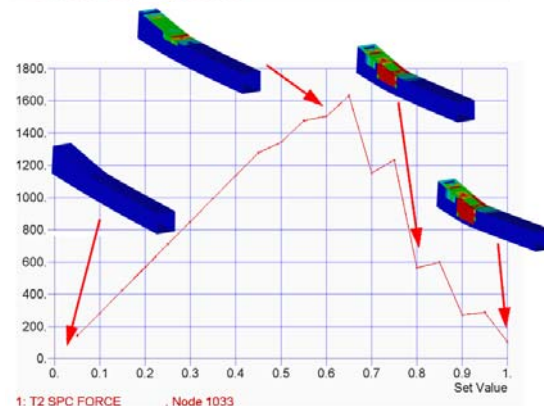
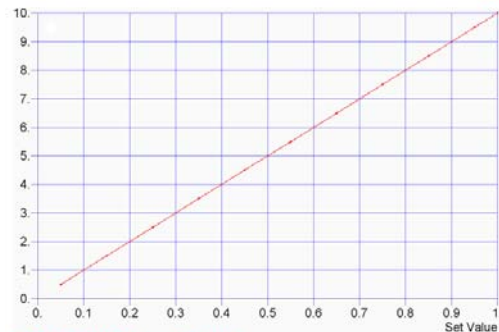
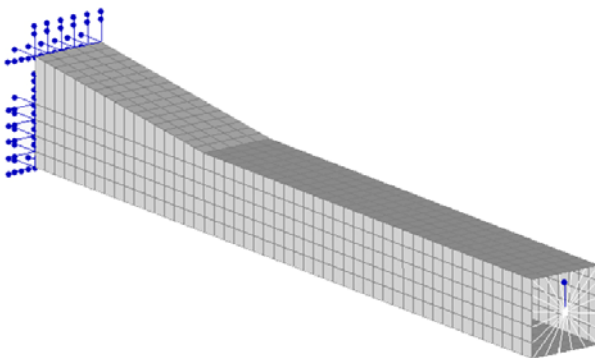
New Structural and Ply Failure Analysis Software for Composite Design Engineers at SAMPE 2008 Conference

Westminster, CA. 3 April 2008 – Noran Engineering, Inc. (NEi), a global leader in the development of finite element analysis (FEA) and engineering simulation software will introduce new software for composite design engineers at the Society for the Advancement of Material and Process Engineering (SAMPE) Conference May 18-22 in Long Beach, CA. The core product NEi Nastran which virtually determines the effects of static, dynamic, and thermal loads on structures at the design stage before fabrication will include new simulation technology called Progressive Ply Failure Analysis (PPFA™). PPFA will allow designers to examine the propagation of damage through a structure after first-ply failure so an assessment of conditions for ultimate failure can be made. This type of simulation provides the insight needed to optimize designs and set up the most appropriate physical testing programs.

NEi Nastran Progressive Ply Failure Analysis (PPFA™) shows the propagation of damage through a composite structure after first ply failure.

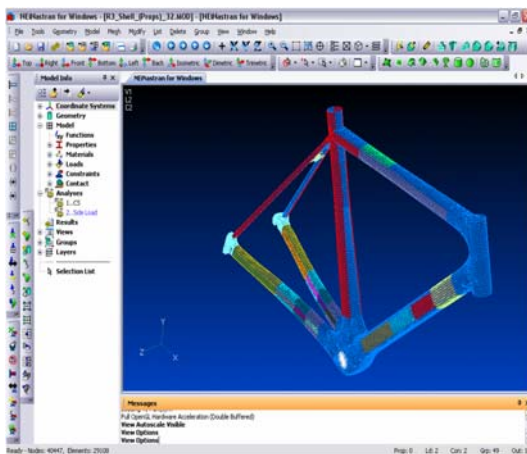
www.NEiNastran.com

Blue = 0% of plies failed
Green = 50% of plies failed
Red = 100% of plies failed



NEi Nastran provides full support of composite analysis with features like:

- Application of the latest, highly sophisticated Failure Criteria like NASA Langley's LARC02 and Puck's first-ply-failure criteria
- 3D Composite Elements which allows 2D parameters to be extended to 3D or direct 3D orthotropic entry
- Determination of ply delaminations using 3D Composite Elements
- Stability Index output for sandwich structures reveals facesheet failure modes of wrinkling, dimpling and crimping
- Max/Min plots help find the critical load cases when numerous test cases are analyzed e.g. aerospace landing, launch, temperatures, and so forth
- Stress checks in thin adhesive lines in complex bonded composite joints
- Post processing results provide visual images that pin point problems down to specific plies and their elements
- Easy definition and entry of composite material properties into the 3D model including ply angles, layers, and stacking sequence, projection of curved coordinate systems to simulate fiber orientation in complex structures
- Capability for a wide variety of composite materials and fabrication methods including hand lay-up of fiber cloth, filament winding, tapes, pre-pregs, honeycomb structures, and resin transfer molding.



The image is a screenshot of a composite bicycle frame analysis using NEi Nastran finite element analysis (FEA) software. Complete support for engineering analysis of composites is provided with features like advanced Failure Criteria, Progressive Ply Failure Analysis (PPFA™) easy definition of material properties, and solution visualizations capable of pinpointing specific ply problems.

www.NEiNastran.com

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