News Creo Simulae 1.0 & 2.0
- Druckbehälter: Schraubenvorspannung / Betriebslast

Urs Simmler
MCAD Simulation Specialist
Focus on PTC-simulation products
Presales, Training, Consulting, …
23+ years simulation-experience (17 years with PTC)
News Creo Simulate 1.0

PTC® the product development company

SAXSIM.DE
Anwendertreffen Simulation

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Pro/MECHANICA → creo® simulate
Creo Simulate 1.0: User Experience

- Creo Simulate Standalone
- Ribbon UI
- Unit Support on all dialogs / Results
- Moments/Rotations active when valid
- Distributed Batch Support
- Process Guide Template editor
- 3D icons for loads, constraints
- Mesh display in exploded view
Creo Simulate 1.0: Engineering Functionality

> General Large Displacement Analysis:
  - Contacts
  - Plasticity
  - Hyper-elasticity

> Nonlinear Thermal Analysis:
  - Temperature Dependent Conductivity
  - Generalized Convection Conditions
  - Radiation Conditions

> Modeling of nonlinear springs

> Ordering of nonlinear loads

> 2D axi-symmetric LDA

> Modeling of UCS constraints in LDA
> Moving Heat Loads:
  – Heat loads as combined functions of time and space
  – Heat loads on composite curves
  – Heat Loads as functions of arc length

> Generalized modeling of Total Volume Heat Load

> Base Excitation Enhancements:
  – Different histories in different directions
  – Linear and rotational motion of the supports
  – Support G^2/Hz units of PSDs

> Calculation of von Mises stress results in Random Analyses

> Preload on bolts modeled as solids

> Modeling of variable thickness shells
Creo Simulate 1.0: Results

> Animation of Dynamic Frequency results
> Default Result templates
> Output to Creo View
> Measure vs. Measure graphs
> Animation on cutting planes
Creo Simulate 1.0: Robustness

> Ability to mesh thin regions with bricks and wedges

> Ability to mesh prismatic regions with bricks and wedges

> Mapped meshing

> Enhanced modeling of Fasteners:
  – More accurate modeling of interface between bolted components
  – Modeling of bending and torsion effects
  – New measure calculations

> Filtering of –ve Buckling Factors

> Increased solver memory
News Creo Simulate 2.0

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Creo Simulate 2.0: Engineering Functionality

> Temperature History as Load of Nonlinear Static Analysis
> Lightweight Assembly Representations in Creo Simulate
> Online Help Links in Diagnostics
> Speedup of Dynamic Analysis Calculations
> General Performance Tuning
Independent Mode ➔ Retirement

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TS Bulletins
Independent Mode of Creo Simulate (Mechanica) - Retirement Notice
Dear Creo Simulate Customer:

Ein temporäres Modell wurde erstellt und ist jetzt aktuell.
BEFEHL:

RETIRED!!!
Last Version: Creo 2.0
Future Plans Creo Simulate 3.0

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Future Plans Creo Simulate 3.0: Engineering Functionality

> Automatic Bolt Preloads

> Temperature Dependent materials for Generalized Temperature Loads

> Load Histories for Linear Analyses

> Weighted Links for 2D Analyses

> Fracture Mechanics: Stress Intensity Factor Measures

> Fatigue Analysis with Multiple Load Sets

> Distributed Springs

> Frictional Sliding Contact (Research)

> Flexible Bodies in Mechanisms (MDO) (Research)
Future Plans Creo Simulate 3.0: User Experience

> New User Experience in Results
> New UI for Linearized Stresses
> Improved Graphics for Mapped Meshes and Shells
> Analyses in Model Tree
> Beams displayed as Solids
> New Commands on RMB
> Mid-surface Features (Research)
Future Plans Creo Simulate 3.0: Miscellaneous

> **Robustness:**
  - Models with Failed Features in Creo Simulate
  - Improve FEM Quad Meshing Quality (Research)
  - Run LDA if Necessary
  - Misc. Mapped Meshing enhancements

> **Performance:**
  - Nonlinear Analysis Performance

> **FEM Mode:**
  - Close FEM gaps
    - Interpolated Loads
    - Shell/Solid links
    - Thermal Analysis in Nastran
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LOADS, PRELOAD

- Automatically simulate a preload carried by a prismatic solid (shaft of a bolt)
Ergebnisse
Fragen
Vielen Dank