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No. 3 of May 8th, 2017

Hello,

This is the third InfoMail of INTES with new and interesting information about our CAE software PERMAS, our events and services.

We have prepared the following content:

1. PERMAS Technology Day on June 20th, 2017: Program Update by Invited Lecture.
2. Provisional Program of Next Standard PERMAS Workshops.
3. PERMAS Saves Weight and Improves Endurance.
4. Topology Optimization in Dynamics.
5. INTES will attend other events.

Best regards

The INTES Team

1. PERMAS Technology Day on June 20th, 2017: Program Update by Invited Lecture

Alternating with the PERMAS User Meeting, the Technology Day could be established, which every two years presents relevant topics of PERMAS and VisPER applications.
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2. Provisional Program of Next Standard PERMAS Workshops (in German)

English workshops are available on request.
From October 2017:
16 - 18 October : Basics
19 October : Contact analysis – Advanced applications
23 October : VisPER (free-of-charge)
24 October : Topology optimization
25 - 26 October : Parameter optimization
In November 2017:
7 - 8 November : Dynamic Analysis
9 November : Fluid/Structure Acoustics
10 November : Reliability analysis
13 – 14 November : Nonlinear static analysis
15 November : Heat transfer
20 November : Advanced Modeling and Analysis Features
21 – 22 November : Engine analysis
23 November : Substructure technique
Website, Program, Calendar, Registration

3. PERMAS Saves Weight and Improves Endurance

Freeform optimization is a method for shape optimization of Finite Element (FE) models, where the geometry of the model surface is modified while the element topology remains unchanged.
Freeform optimization is not a mathematical shape optimization method but it uses optimality criteria. They describe the relationship between a geometry change and its influence on a certain result quantity. Mainly, the relationship between a geometry change and equivalent stresses in the material is of great importance. This means that a high stress can be reduced by adding material (i.e. increase of part thickness) at the position of the high stress. The same holds for the inverse, i.e. a stress increases when part thickness is reduced.
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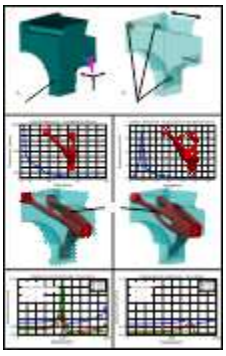

4. Topology Optimization in Dynamics

Topology optimization is a standard method for shape finding under given boundary conditions and loads. Often, static load cases are used for topology optimization, because it is easy to apply and gives a good first impression of the best shape. For dynamically loaded structures, it is obvious that a topology optimization should include a dynamic analysis, too. To this end, the topology optimization method has to be extended for dynamic analysis. This extension has been developed in PERMAS to enable topology optimization to be used simultaneously for static and modal frequency response analysis.
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5. INTES will attend other events

In May :
10 – 11 May : FEMFAT User Meeting
In June:
11 – 14 June : NAFEMS World Congress
In July:
19 – 20 July : Daimler EDM CAE Forum 2017
Overview on other events