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Mechanik-Seminar

Referent: **Prof. Jože Korelc**
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Datum: Donnerstag, 17.02.2011
Uhrzeit: 15:45 - 17:15 Uhr
Ort: Hertz-Hörsaal, Geb. 10.11, Raum 126

Thema: **"Stability and imperfection analysis procedures"**

Abstract: Main objective of the presentation is to discuss various aspects of automation and implementation of stability and imperfection analysis procedures within the context of implicit finite element formulations. Three topics will be discussed: automation of derivation of stability analysis procedures, computability of critical points and imperfection sensitivity analysis of critical points. Automation of derivation of finite element subroutines required within the stability analysis procedures will be discussed for (1) a direct quadratically convergent computation of limit and bifurcation points based on extended system formulation and eigenvector-free critical point test functions; (2) computation of bifurcation points based on a linearized stability analysis (initial stability problem). The role of the choice of critical-point test function and the problem of computability of critical points with the algorithms based on eigenvector-free extended system formulations will be discussed in the second part of the talk. Imperfection sensitivity of thin walled structures also remains an unanswered question in the field of computational mechanics. With the use of direct and sensitivity analysis of limit points combined with optimization it is possible to determine the most unfavorable combination of chosen shapes representing the initial imperfection, which leads to the minimum ultimate load.

Alle Interessenten sind herzlich eingeladen!

Prof. Dr.-Ing. Karl Schweizerhof, Prof. Dr.-Ing. Thomas Seelig