CRACK PROPAGATION IN VARIOUS 3-D SHELL STRUCTURES, APPLICATION OF SPECIAL SOFTWARE-TOOL USING ANSA/µETA WITH STANDARD ABAQUS SOLVER

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KEYWORDS -

ABSTRACT - A modular crack-propagation software-tool is presented using standard Pre- and Post-processing features of ANSA and µETA together with ABAQUS-Standard to simulate the load/displacement history of an arbitrary 3D shell structure. In order to efficiently simulate fatigue crack propagation in large finite element models a submodel is extracted from the global model. The submodel is subjected to the probably time-dependent kinematics given in the interface to the global model.

Concerning fracture mechanics theory the stress intensity factor (SIF) concept is applied. Various examples will show the general applicability and accuracy of the developed software-modules.