USING LS-OPT/LS-DYNA IN A MULTI-ATTRIBUTE OPTIMIZATON

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ABSTRACT

This paper summarizes the experiences of using the LSTC environment in a multi-attribute optimization. The work was carried out in an on-going project, SuperLIGHT-Car (SLC), which aims to reduce the weight of the body in white (BIW) of a compact class car by at least 30%. This objective is made possible by using new materials and a blend of materials in the design. The car should still fulfil user rating, e.g. Euro NCAP demands but also demands of production rate, cost, life cycle analysis, stiffness demands, etc..

The VTEC involvement in the SLC project is to perform structural optimization of the BIW with respect to the defined loadcases and corresponding target values for responses defined for each loadcase. In this paper the set up of the current optimization problem, resources needed and "work-arounds" are presented. The current optimization formulation requires the solution of 6 impact loadcases, 2 static loadcases and an eigenvalue problem.

The final results from this investigation are still to be seen.

KEYWORDS

Optimization, RSM, Crash, Eigenvalue, Static,