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CAE Crash Analysis and Development of Automotive Lightweight Structures

Background: Today's vehicles are driven by consumer needs to be safer for occupant protection yet lighter and more fuel efficient, through the use of advanced high strength steels (AHSS) both these goals are possible.

Objective: To develop and understand behaviour of AHSS material and automotive structures in high impact situations such as vehicle crash, using computer aided engineering (CAE) as an alternative to physical prototyping.

Method: Using both physical and CAE testing; structures will be analysed to assess the crashworthiness compared to current automotive structures and materials.

Progress: Simple tube models have been developed and compared to physical test to assess what parameters of the structure and material are important to high impact situations. A study on oblique bending has begun to assess factors that hinder or aid energy absorption.

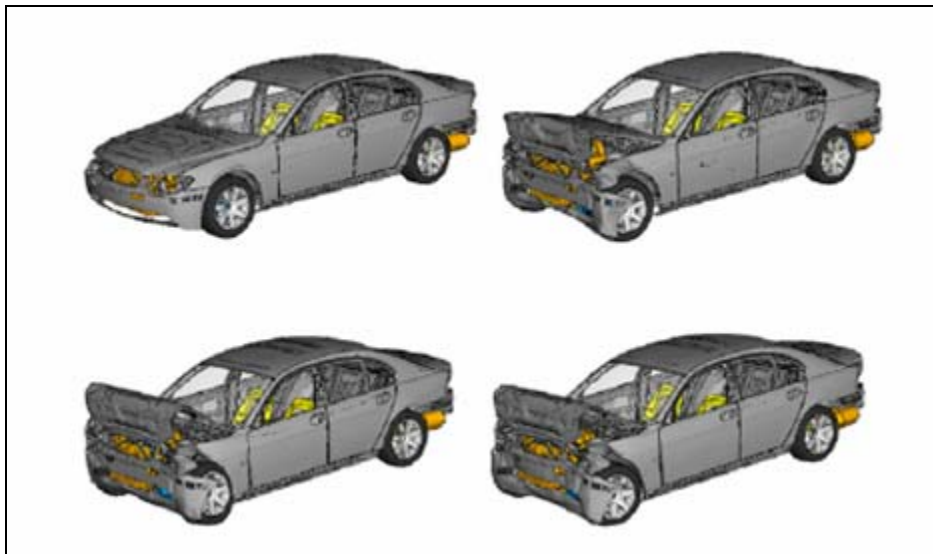


Figure 1 - BMW 5 series frontal impact
