

CRASH CAE MODELLING OF RUBBER BUSHINGS

Oscar Jesus Centeno Gil

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Supervisors

Per-Erik Austrell, *PhD*
Div. of Structural Mechanics, Lund

Linus Wågström, *Lic.Eng.*
Volvo Car Corporation

In cooperation with

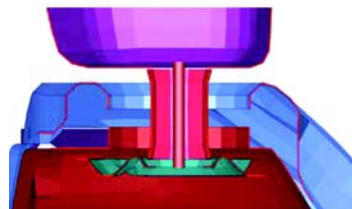
Volvo Cars Safety Centre

Examiner

Ola Dahlblom, *Prof.*
Div. of Structural Mechanics, Lund

The work is performed at

Volvo Cars Safety Centre,
Gothenburg



Explicit FEA simulation has become an important tool for assessment and improvement of the crashworthiness of cars. Concept and ideas can be evaluated in computers long before physical prototypes are available.

The precision and resolution of the crash simulation models have improved tremendously during the last decade due to extensive method development and the huge increase in computational power.

However, several areas are still handled in a simplified way, e.g. with multidimensional spring elements, instead of a more physical modelling. One such area is rubber bushings in engine mounts and wheel suspension. Until recently, the general level of detail in full car crash models has not allowed a physical modelling of rubber bushings with solid elements.

The purpose of this work is to develop new and improved modelling techniques for rubber bushings, compare to traditional modelling and issue modelling guidelines/recommendations. Testing activities may be needed in order to identify rubber material parameters and to verify the final model, but the work is mainly theoretical and numerical.



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