Extracts from Report on

Development of Airbag Simulation Models

Work done for Japan Automobile Research Association

by

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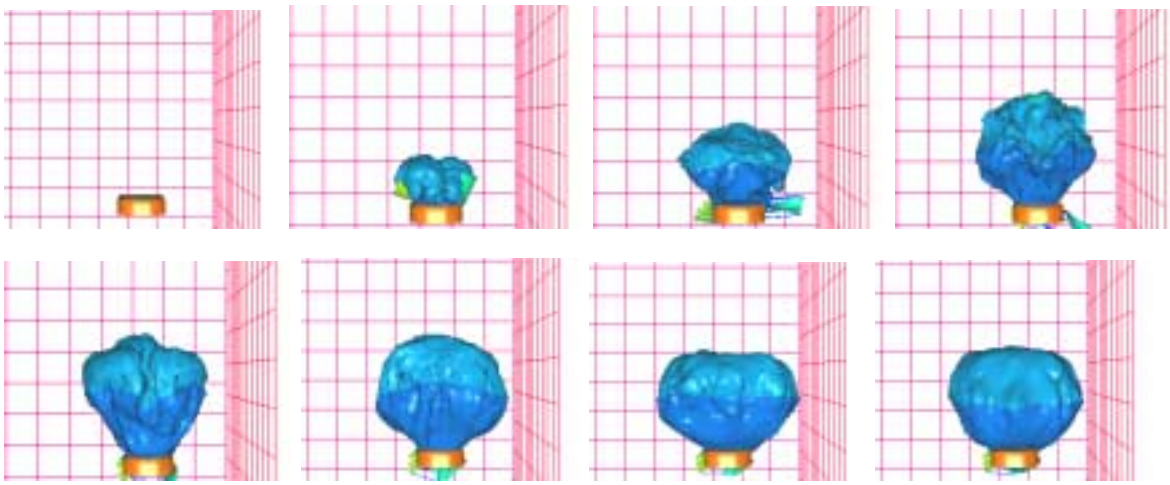
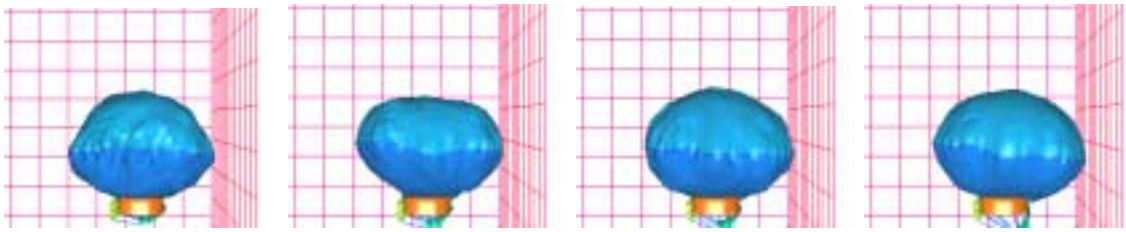
(Please see Publisher's Note at the end)

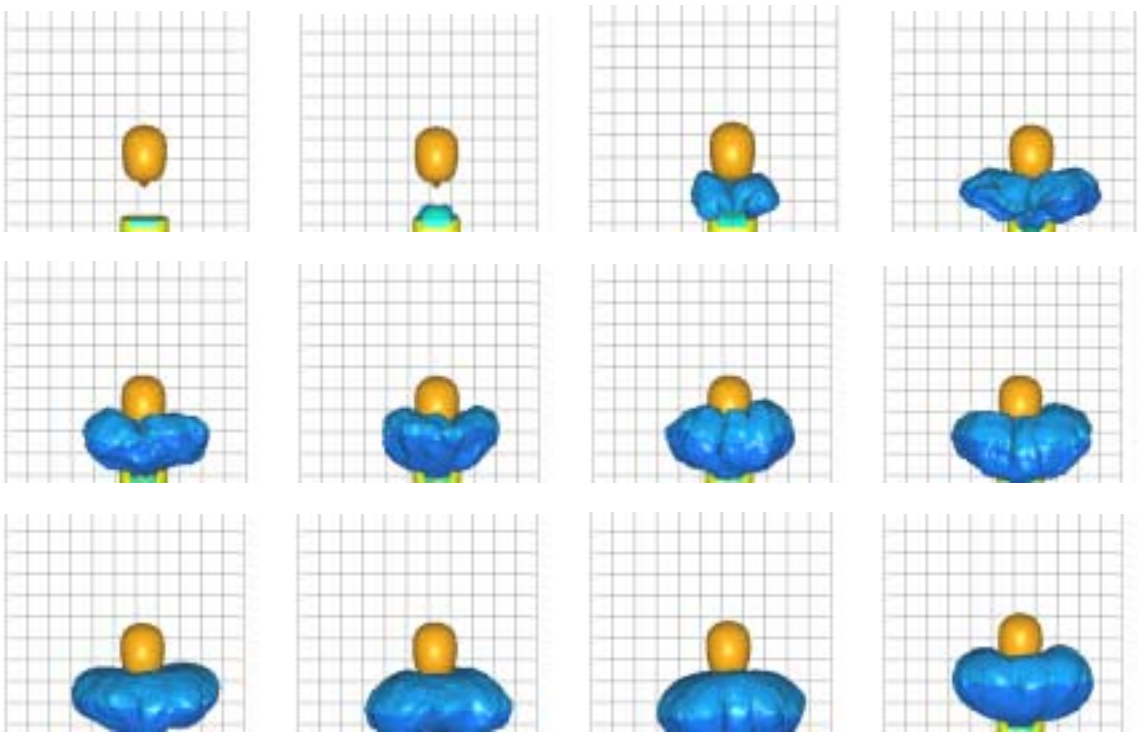
This work aims at developing airbag simulation models to be used for analysis in car and MC applications. In airbag deployment, the position of the occupant has always been considered very critical. Occupants sitting close to the airbag get severe injuries due to the large initial impact from the airbag during its opening. This is called the out of position (OOP) problem in automotive literature and is a very important issue. The objective of this study has been to develop an airbag model, which can subsequently be used in OOP studies. Simulation models with an OOP headform has also been developed in this study.

The figures below show sample snapshots of the airbag simulation, with and without a human headform.





We have developed airbag models for different airbags including driver side and passenger side airbags. Some of this work has been done in collaboration with the Japan Automobile Research Institute for which experimental data was available for validation. For some airbags, an OOP test and simulations have also carried out with a Hybrid III headform at varying offsets from the airbag.



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