Modelisation of ductile-brittle transition on plastified PVC skins, in high speed choc (firing airbag)

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(2017 – 2020)

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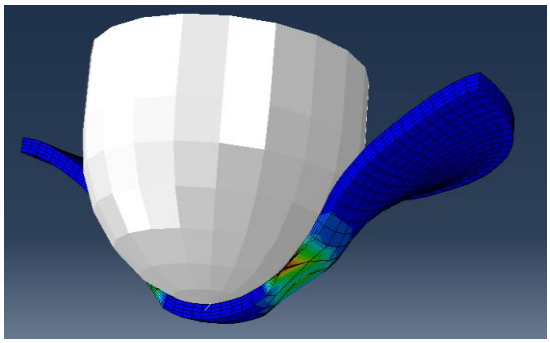

- DBTT important to understand for the opening of the dashboard
- Evaluate the “material” effect of the PVC skins
- To equip with a real size experimental device to fire airbags

Abstract:

Context and issues: The materials involved in the opening of the airbag for the automotive industry require in addition to functional and aesthetic properties, good breaking behavior at the time of deployment at a speed of about 50 m / s and temperatures ranging from -30 ° C to 85 ° C. This last property requires a good control of the breaking mechanisms of plasticized PVC skin: not too fragile so that the structure is not divided into several pieces projected on the passenger; not too ductile for the break to be controlled. The objective of the industrial partner is to:

- To equip with a real size experimental device - thus instrumented - to fire airbags to understand the mechanisms of deformation and rupture in dynamics of the skin in order to lead to a realistic modeling of the opening;

- Evaluate the "material" effect by varying the plasticizer content as well as the porosity and other parameters in order to analyze the influence on the modeling (behavior and rupture) of the firing air bag.