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Crashworthiness behavior of aluminum profiles with holes considering damage criteria and damage evolution.

Quirino Estrada , Dariusz Szwedowicz , Jesús Silva-Aceves ,
Tadeusz Majewski , Julio Vergara-Vazquez ,
Alejandro Rodriguez-Mendez

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Highlights

- The effect of discontinuities in aluminum profiles considering damage evolution is investigated.
- The importance of failure models with the evolution to modelling of light structures was corroborated.
- Improvements of crashworthiness performance of profiles were obtained by discontinuities.
- A rule for the effective sizing of the hole diameter was specified.
- A specific automotive application is presented, demonstrating the usefulness of the current study.

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