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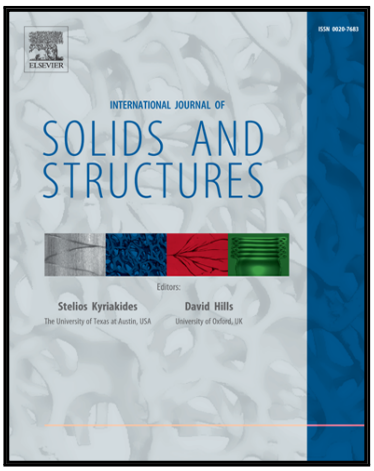

A constitutive model for paperboard including wrinkle prediction and post-wrinkle behavior applied to deep drawing

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PII: S0020-7683(17)30139-7
DOI: 10.1016/j.ijsolstr.2017.03.029
Reference: SAS 9518

To appear in: *International Journal of Solids and Structures*

Received date: 13 January 2017
Revised date: 19 March 2017
Accepted date: 27 March 2017

Please cite this article as: Eric Linvill, Malte Wallmeier, Sören Östlund, A constitutive model for paperboard including wrinkle prediction and post-wrinkle behavior applied to deep drawing, *International Journal of Solids and Structures* (2017), doi: 10.1016/j.ijsolstr.2017.03.029

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Highlights

- During the deep drawing of paperboard, many wrinkles initiate and propagate.
- A 1-D hinge model is used to describe the mechanical behavior of wrinkled paperboard.
- The hinge model is incorporated into a continuum 3-D elasto-plastic material model.
- Both 1-D and 3-D models are validated against experiments.
- The developed models are utilized in a parametric study of the deep drawing process.

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