

Accepted Manuscript

A comparative study of two constitutive models within an inverse approach to determine the spatial stiffness distribution in soft materials

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PII: S0020-7403(17)33113-2
DOI: [10.1016/j.ijmecsci.2018.03.004](https://doi.org/10.1016/j.ijmecsci.2018.03.004)
Reference: MS 4214



To appear in: *International Journal of Mechanical Sciences*

Received date: 2 November 2017
Revised date: 3 March 2018
Accepted date: 7 March 2018

Please cite this article as: Y. Mei , B. Stover , N.A. Kazerooni , A. Srinivasa , M. Hajhashemkhani , M.R. Hematiyan , S. Goenezen , A comparative study of two constitutive models within an inverse approach to determine the spatial stiffness distribution in soft materials, *International Journal of Mechanical Sciences* (2018), doi: [10.1016/j.ijmecsci.2018.03.004](https://doi.org/10.1016/j.ijmecsci.2018.03.004)

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Highlights

- Digital Image Correlation (DIC) System to collect displacement data at high resolutions
- Data collection at small and large overall strains on a silicone composite material having two stiff inclusions.
- Mapping the material property distribution by solving an inverse problem using a nonlinear hyperelastic material model and a linear elastic model.
- Comparison of results and accuracy from the linear model and nonlinear model on finite strains.
- Analyzing observations with analytical mathematical models and explaining observations in the results.

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