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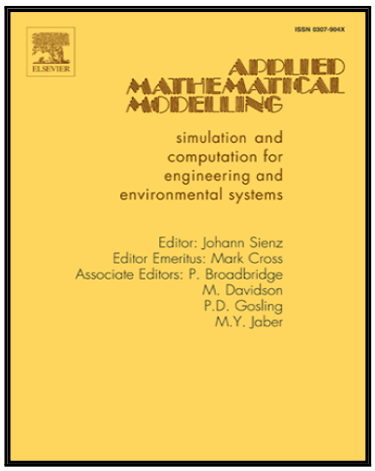

Closed-Form Control Oriented Model of Highly Flexible Manipulators

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Highlights

- A closed-form dynamic model of highly flexible 3D manipulators with links of arbitrary shape is proposed
- In order to account for large deformations a substructuring method is formulated
- The data describing the links flexibility are obtained as result of a FE preprocessing stage
- The model is validated by comparison with experimental results and multibody software
- An integral manifold model, suitable for the design of advanced control systems is finally derived.

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