

Guo, D.; Fang, C. Q.; Wang, X.; Lu, G.

Dynamic inversion characteristics of composite reinforced tubes. (English) Zbl 1406.74164
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Summary: An analytical solution is presented to study the energy absorption properties of composite reinforced tubes undergoing freely dynamic external inversion. A finite element method is used to indirectly validate the analytical solution for dynamic inversion characteristics of composite reinforced tubes. Compared with finite element results, the feasibility of the analytical method is simply verified. The effects of composite layer (viz. fiber layer thickness and fiber reinforced orientation), dynamic loading and section shape of tube on the inversion characteristics of composite reinforced tubes are described and investigated in examples, respectively.

MSC:

74E30 Composite and mixture properties

Keywords:

[laminated structures](#); [impact behavior](#); [analytical method](#)

Software:

[ABAQUS](#)

Full Text: [DOI](#)

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