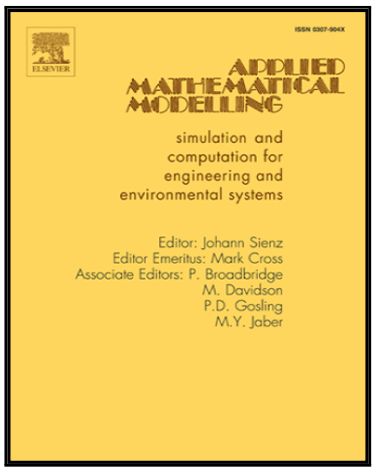


# Free vibration analysis of carbon nanotube-reinforced functionally graded composite shell structures

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**Highlights**

- Free vibration analysis of nanocomposite shells reinforced by carbon nanotubes.
- High order model based on a discrete double directors shell model.
- Uniform (UD) and three graded distributions of (CNTs) are considered.
- The performance of the present model is highlighted by numerical examples.