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Nonlocal vibrations and potential instability of monolayers from double-walled carbon nanotubes subjected to temperature gradients

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Highlights

- Equations of motion of thermally affected membranes of DWCNTs are established.
- A nonlocal Fourier model is developed for the heat conduction through nanotubes.
- The variations of vdW forces are linked to the variation of deflections of DWCNTs.
- The critical temperature change is obtained via continuous-based NRBM and NHOBM.
- Roles of crucial factors on free vibration of nanosystem are explained methodically.

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