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On the buckling and post-buckling of core-shell cylinders under thermal loading

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Highlights

- Theoretical analyses were conducted to find curvature-related key parameters for pattern selection in core-shell soft cylinders under thermal loading.
- Transition from subcritical to supercritical bifurcation was captured both analytically and numerically.
- Curvature and modulus effects on pattern formation are quantified by a new dimensionless parameter C_t .
- A 3D shell/solid coupled finite element model was applied for post-buckling analysis from a quantitative standpoint.
- Tracing of post-buckling evolution was performed by a path-following continuation technique.

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