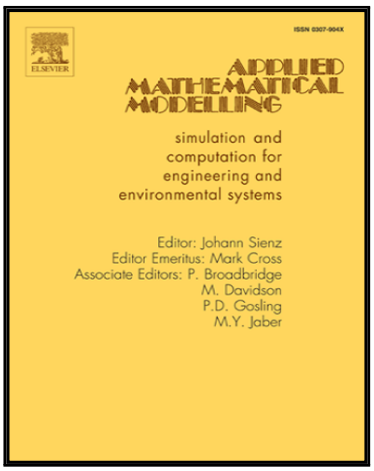

Asymptotic limit cycle of fractional van der Pol oscillator by homotopy analysis method and memory-free principle

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Highlights

- An approach is proposed to solve asymptotic LC of fractional vdP oscillator.
- The Caputo-type fractional derivative is tackled by a memory-free principle.
- Hence, the homotopy analysis method can then be applied efficiently.
- It is applicable to both weakly and strongly nonlinear problems.
- It is capable of tracking unstable LC for any given fractional order.