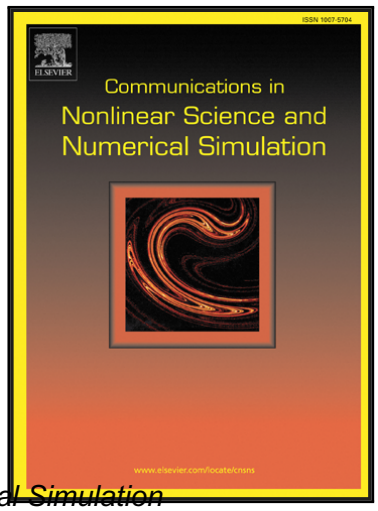

Response enhancement in an oscillator chain

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Highlights

- An analysis of capture into resonance in an oscillator chain with a nonlinear actuator (the Duffing oscillator) is provided.
- An effect of slow modulation of the natural and external frequencies of the actuator on the occurrence of autoresonance in the entire array is investigated.
- Explicit asymptotic solutions describing capture into resonance and escape from it are derived.
- Numerical simulations prove a good agreement between the analytical and numerical (exact) results.