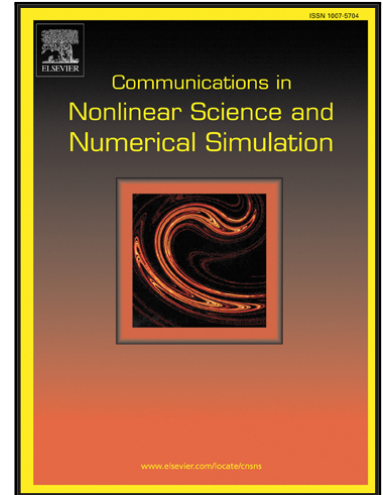


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Nonlinear analysis and characteristics of inductive galloping energy harvesters

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Highlights

- An aerodynamic electromagnetic energy harvester is proposed and its nonlinear distributed-parameter model is constructed.
- Parametric analysis is elaborately performed to investigate the effects of magnet placement, electromagnetic coupling coefficient, and internal resistance of coil on the cut-in speed of instability and the output performance of the harvester system.
- The optimal external load resistance is determined and this optimal value changes with the key parameters.
- The present study offers a theoretical significance in guiding and designing the aerodynamic electromagnetic energy harvesters.

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