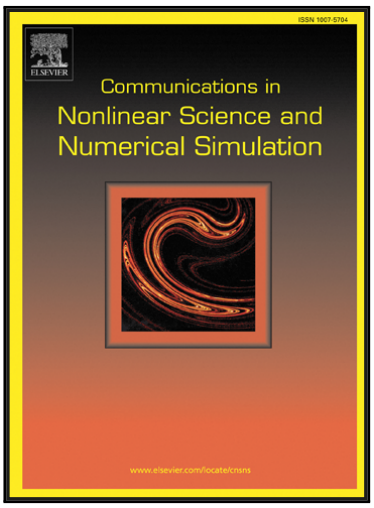

Bifurcations of periodic motion in a three-degree-of-freedom vibro-impact system with clearance

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Highlights

- Co-dimension-one and Co-dimension-two smooth bifurcations of periodic motion of a three-degree-of-freedom vibro-impact system with clearance are studied by applying the explicit critical criterion without using eigenvalues calculation.
- The existence of the grazing periodic motion of the vibro-impact system and the discontinuous grazing bifurcation behavior is studied based on the compound normal form map near the grazing point.
- The discontinuous jumping phenomenon and the co-existing multiple solutions near the grazing bifurcation point are revealed.

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