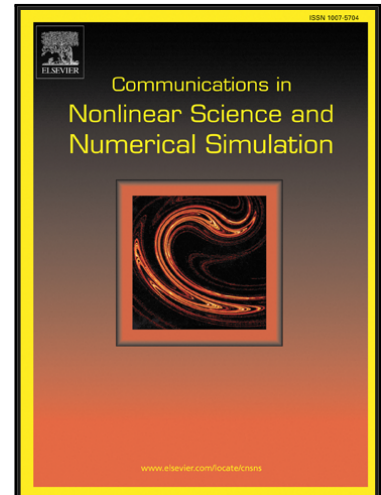


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Effects of a soft-core Coulomb potential on the dynamics of a hydrogen atom near a metal surface

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Highlights

- Effects of a soft-core potential approximation in the dynamics of a Coulomb atomic system.
- System: Rydberg hydrogen atom near a metallic surface subjected to an electric field.
- Differences in the nature of rectilinear motions have a crucial effect in the dynamics.
- Bifurcations of periodic orbits are different in the real system and in the softened one.
- The ionization basins are better identified in the real potential.

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