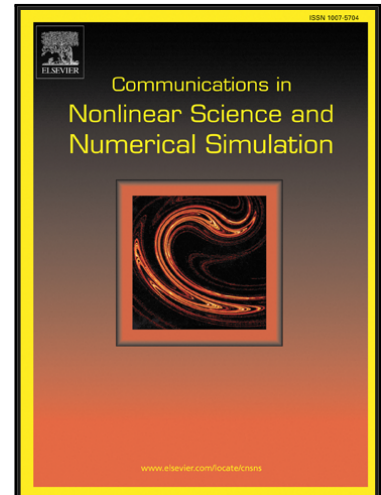


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Imperfect Testing of Individuals for Infectious Diseases: Mathematical Model and Analysis

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1 **Highlights**

- 2 • A model that considers both sensibility and sensitivity of disease testing
3 is proposed based upon a classical SIR model.
- 4 • Imperfect testing is shown to have an impact on the size of the epidemic
5 and the cost of treatment.
- 6 • The analysis provides disease control insights by formulation of epidemic
7 thresholds based on the basic reproduction number.

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