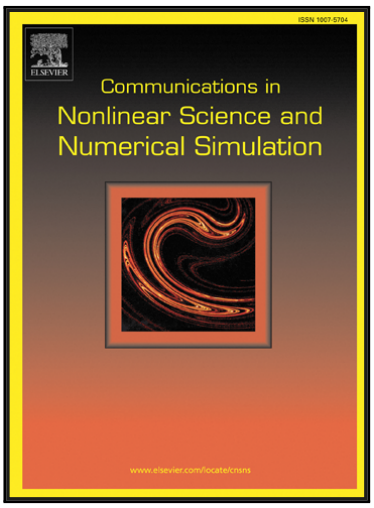

Creation and mobility of self-trapped electronic states in nonlinear chains

A.R.C. Buarque, W.S. Dias

PII: S1007-5704(18)30120-5
DOI: 10.1016/j.cnsns.2018.04.009
Reference: CNSNS 4501

To appear in: *Communications in Nonlinear Science and Numerical Simulation*

Received date: 24 December 2017
Revised date: 29 March 2018
Accepted date: 4 April 2018

Please cite this article as: A.R.C. Buarque, W.S. Dias, Creation and mobility of self-trapped electronic states in nonlinear chains, *Communications in Nonlinear Science and Numerical Simulation* (2018), doi: 10.1016/j.cnsns.2018.04.009

Highlights

- The phase diagram reveals a rich phenomenology, with five regimes related to electronic states mobility;
- Self-trapped electronic states can exhibit an unidirectional branch migrating to the left or the right side of chain;
- In a strong electron-phonon regime, the wave-packet describes a self-trapped regime in which remains fully localized at initial site;
- The proper tunning of electric field for the management of the creation and mobility of selftrapped electronic states through the lattice.