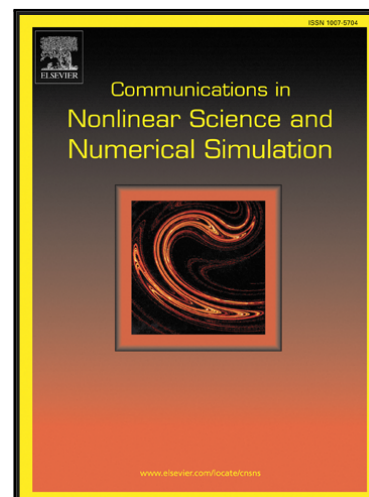


Accepted Manuscript

The finite element method for fractional non-local thermal energy transfer in non-homogeneous rigid conductors

Massimiliano Zingales , Giuseppe Failla

PII: S1007-5704(15)00149-5
DOI: [10.1016/j.cnsns.2015.04.023](https://doi.org/10.1016/j.cnsns.2015.04.023)
Reference: CNSNS 3541



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

Received date: 3 March 2015
Revised date: 24 April 2015
Accepted date: 27 April 2015

Please cite this article as: Massimiliano Zingales , Giuseppe Failla , The finite element method for fractional non-local thermal energy transfer in non-homogeneous rigid conductors, *Communications in Nonlinear Science and Numerical Simulation* (2015), doi: [10.1016/j.cnsns.2015.04.023](https://doi.org/10.1016/j.cnsns.2015.04.023)

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

PAPER HIGHLIGHTS

- A new fractional-order temperature equation for non-homogeneous conductor is presented in the course of the paper
- A numerical method based upon the Finite Element Method to solve fractional-order non-local problems has been formulated in the paper.
- Numerical solutions of the temperature equations in non-homogeneous conductors are presented for 1D and 2D domains.
- A numerical comparison of the proposed finite element method with already used fractional finite difference method has been reported in the paper to challenge the validity of the method

Download English Version:

<https://daneshyari.com/en/article/7155337>

Download Persian Version:

<https://daneshyari.com/article/7155337>

[Daneshyari.com](https://daneshyari.com)