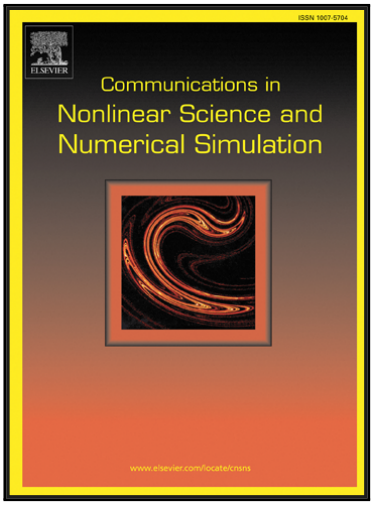

The finite element method for fractional non-local thermal energy transfer in non-homogeneous rigid conductors

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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