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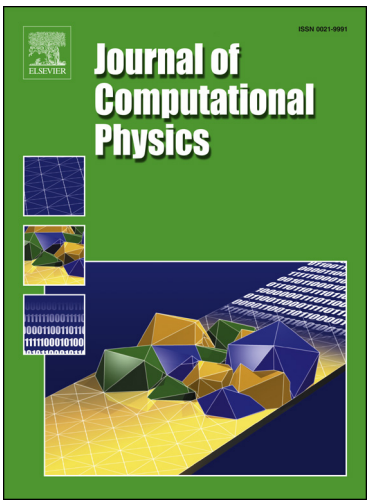

Numerical approach based on the collection of the most significant modes to solve cyclic transient thermal problems involving different time scales

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PII: S0021-9991(18)30592-8
DOI: https://doi.org/10.1016/j.jcp.2018.08.059
Reference: YJCPH 8245

To appear in: *Journal of Computational Physics*

Received date: 14 December 2017
Revised date: 9 July 2018
Accepted date: 31 August 2018

Please cite this article in press as: A. Al Takash et al., Numerical approach based on the collection of the most significant modes to solve cyclic transient thermal problems involving different time scales, *J. Comput. Phys.* (2018), https://doi.org/10.1016/j.jcp.2018.08.059

Highlights

- A new approach is proposed to decrease computational time for cyclic problems involving different time scales.
- The approach is based on the use of pre-computed space-time modes which are further collected in a dictionary.
- For a physical time belonging to the range of the dictionary, the solution can be accurately predicted.
- For a given cycle time, the solution is predicted accurately if the dictionary contains the space-time modes associated with this specific time.