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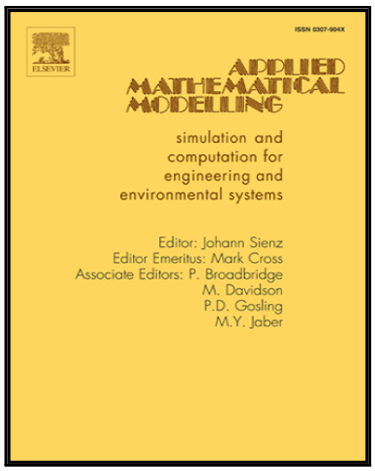

Qualitative properties of solutions in the time differential dual-phase-lag model of heat conduction

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Highlights

- Rich analysis of the time-differential dual-phase-lag model of heat conduction
- Uniqueness with delay times $\tau_T > 0$ and $\tau_q \geq 0$.
- Appropriate continuous dependence estimates for $0 \leq \tau_q \leq 2\tau_T$ and $0 < 2\tau_T < \tau_q$.
- Theorem of influence domain: specific estimations for the speed of signal propagation.
- Exponential decay estimates for the amplitude of the steady-state vibrations.

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