عنوان مقاله:

Numerical solution of transient heat conduction in a railroad rail using reduced basis method

محل انتشار:

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خلاصه مقاله:

In this work numerical solution of transient heat conduction in heattreatment of a railroad rail has been considered. The reduced basismethod (RBM) has been applied to separate solve associatedparameterized PDE. The RBM will decompose the solution process into offline and online stages. In the offline stage problem definition andnumerical solution creating reduced basis will be done. The output ofinterest will be projected to the RB space. In the online stage havingcertain value of input parameters and with rather small computationalcost the output of interest is calculated. Reliability and effectivity of themethod is illustrated using a posteriori error estimation.

کلمات کلیدی:

railroad rail, transient conduction heat transfer, reduced basis method, Greedy algorithm, proper orthogonal decomposition