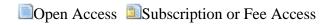PROMOTING ACCESS TO AFRICAN RESEARCH

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Polynomial approximation approach to transient heat conduction with internal heat generation

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Abstract

This work reports polynomial approximation approach to transient heat conduction in a long slab, long cylinder and sphere with linear internal heat generation. It has been shown that the polynomial approximation method is able to calculate average temperature as a function of time for higher value of Biot numbers. This agrees with Keshavarz and Taheri [19] and also shows that their work becomes a special case of ours. The simplified relations obtained in this study can be used for engineering calculations in many conditions.

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