الاية

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Dedication

This work is dedicated to my parents who taught me what really life means ……

To my beloved country Sudan ……

To my and friends and colleagues with love and respect.

Acknowledgement

No work could be accomplished without the help of Allah

Hencecountless thanks are due to Allah ,and special thanks go later

Dr.Mohamed Hassan Mohamed khabir with who started this work.

My deep thanks also go to my colleagues, my wife, sons and daughters.

My thanks are due to my gross

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Abstract

In this thesis , first of all ,we consider double Laplace Transform method for the solution general Linear second – order partial differential equations

Double Laplace transform is applied to solve the heat ,wave with constant coefficients and a general telegraph and a partial Integrodifferential equations

The scheme is tested through some examples and the result demonstrate reliability and efficiency of the proposed method .

Also we consider wave and heat and convection equations using the Convolution theorem by replacing non-homogeneous terms with double convolution function and by using convolution.

Finally we apply double Laplace transform to solve the new wave, heat equations with non-constant coefficients.

الخلاصة

في هذا البحث ،بداية ، اعتبرنا طريقة تحويل لابلاس الثنائ لحل المعادلات التفاضلية الجزئية . طبق تحويل لابلاس الثنائي لحل معادلات الحرارة والموجة بمعاملات ثابتة ومعادتة التلغراف العامة والمعادتة التفاضلية – التكاملية . الطريقة طبقت عتى بعض الامثلة واظهرت النتائج كفاءة وفعاتية الطريقة المستخدمة . ايضا استخدمنا نظرية الالتفاف تحل معادلات الحرارة والموجة ومعادلة حركة الهواء الافقية بتحويل الحدود غير المتجانسة باستخدام التفاف الدوال الثنائي والالتفاف الفردي .

contents

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