A simple solution to the Thomas equation

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Abstract

In this paper, I describe a simple solution to the Thomas equation. The paper ends with "The End"

Introduction

The Thomas equation is

$$\frac{\partial^2 u(x,y)}{\partial x\,\partial y} + \alpha\frac{\partial u(x,y)}{\partial x} + \beta\frac{\partial u(x,y)}{\partial y} + \gamma\frac{\partial u(x,y)}{\partial x}\frac{\partial u(x,y)}{\partial y} = 0$$

A simple solution to the Thomas equation

When

$$a\gamma + \beta \neq 0$$

a simple solution to the Thomas equation is

$$u(x,y) = a\left(x - \frac{\alpha}{a\gamma+\beta}y\right) + b$$

where

a and b are constants of integration

The End