

Distribution Theory Applied to the Solution of Partial Differential Equations

Srinath Kailasa ^{*}
University College London

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Abstract

In this document I summarise some of the main applications of the theory of distributions for the solution of partial differential equations via the method of ‘fundamental solutions’. I begin by introducing the key concepts behind the idea of the method of distributions, with the goal of solving the Laplace and Heat equations using these ideas. Furthermore, this document also includes a ‘scratch pad’ section, in which I provide further examples and proofs of the applications of these ideas.

1 Distributions and Test Functions

2 Fundamental Solutions

3 Scratch Pad

^{*}srinath.kailasa.18@ucl.ac.uk