ICM 1998, Berlin, Aug. 18–27

Abstracts of Short Communications and Posters

Section:

11. Mathematical Physics

1991 MS Classification: 44
Debnath, Joyati, Winona State University, USA

Associated Transforms Through a Mathematical Software System

It is often desirable to compute the inverse of the multidimensional Laplace transform at a single variable. Such an image function at one variable can be obtained by evaluating the associated transform corresponding to certain types of multidimensional Laplace transform through the association of variables. This paper presents some new developments of associated transforms with illustrative examples. The design of a software system for mechanically generating associated transforms for certain functions will be discussed. The architectural design of the software system and an overview of the algorithms will also be presented. The theory of associated transforms and the mathematical software system as developed in this paper will be useful in mathematical sciences, physical sciences and engineering applications.