

On acceleration of convergence of series and its application to fluid dynamics

T. K. Sheel

Department of Mathematics
Shahjalal University of Science & Technology
Sylhet 3114, Bangladesh
Email: tksheel@sust.edu

A. Halder

Department of Mathematics
University of Dhaka
Dhaka 1000, Bangladesh
Email: amal_halder@yahoo.com

Abstract

A given acceleration method refines its approximation procedure by progressively absorbing a greater number of terms of a sequence in the transform it employs. In this work Pade approximation and u-transform for acceleration of convergence of a series are investigated. The necessary mathematical formulation for calculation of Pade approximant and u-transformation are performed and routine for its numerical evaluation is developed. The both approximations have been applied to the problems of fluid dynamics. The proposed transformed has been compared with the finite difference method and confirmed better presentation. Further investigations are considered in next work.