

Difference schemes for delay Schrödinger equation

Deniz Agirseven¹

¹ *Department of Mathematics, Trakya University, Edirne, Turkey*
denizagirseven@trakya.edu.tr

Abstract: In the present paper, the first and second order of accuracy stable difference schemes for the Schrödinger equation with time delay in a Hilbert space are presented [1]. Theorems on stability estimates for the solution of these difference schemes are established by using approaches of [2]. The application of theorems on stability of the approximate solution of difference schemes for the three types of delay Schrödinger partial differential problems is provided. Additionally, some illustrative numerical results are given.

Keywords: Schrödinger differential equations, difference schemes, stability estimates

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