

# Operational matrix to solve Black-Scholes equation for European option by using Block Pulse Functions

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## Abstract

In financial mathematics, the fair price of option can be achieved by solution of parabolic differential equation. The main purpose of this work is presented new direct method to solve Black-Scholes (B-S) equation. By using Block Pulse Functions (BPFs) and its operational matrix of integration, (B-S) equation can be transformed to linear system of Algebra. We demonstrate the accuracy of our method through numerical examples.

## Keywords

Black-Scholes equation, Block Pulse Functions, Operational Matrix, Option Pricing.