The Jacobi method is a matrix iterative method used to solve the equation Ax=b for a known square matrix A of size n × n and known vector b or n length.

Jacobi's method is used extensively in finite difference method (FDM) calculations, which are a key part of the quantitative finance landscape. The Black-Scholes PDE can be formulated in such a way that it can be solved by a finite difference technique. The Jacobi method is one way of solving the resulting matrix equation that arises from the FDM. The algorithm for the Jacobi method is relatively straightforward. We begin with the following matrix equation:

Ax=b

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