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USE MULTIGRID METHOD FOR RESOLUTION DIFFUSION EQUATION

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Abstract

Multigrid Method are know as very fast solvers for a large class of discretized partial differential equations. In this paper, we discuss the numerical computation of approximations to the solution of elliptic partial differential equations (Stationary diffusion equation with Dirichlet boundary conditions) by using Multigrid Method. The paper focuses on algorithms that opered on the whole of the space grid, the algorithm based on *V*-cycle technique is written on **Matlab**, his theretical convergence properties are analysed by Fourier mode analysis, and his numerical results is investigated. We display numerical results obtained when we execute our software for resolution stationary diffusion equation with Dirichlet boundary condition, an comparison of our numerical results and numerical results extract of Phillips and Schmidt article's achieved.