

In this research, an efficient technique of computation considered as a modified decomposition method was proposed and then successfully applied for solving the nonlinear problem of the two dimensional flow of an incompressible viscous fluid between nonparallel plane walls. In fact this method gives the nonlinear term Nu and the solution of the studied problem as a power series. The proposed iterative procedure gives on the one hand a computationally efficient formulation with an acceleration of convergence rate and on the other hand finds the solution without any discretization, linearization or restrictive assumptions. The comparison of our results with those of numerical treatment and other earlier works shows clearly the higher accuracy and efficiency of the used Modified Decomposition Method. Keywords: Inclined walls, Jeffery Hamel flow, Nonlinear problem, Velocity profiles, Skin friction, Modified Decomposition Method (MDM).