عنوان مقاله:

Using Laguerre polynomials as a basis for a new differential quadrature methodology to solve magneto-hydrodynamic (MHD) fourth-grade fluid flow

محل انتشار:

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خلاصه مقاله:

The addition of an application of a new version of the Differential Quadrature Method is the purpose of this work. The new method, tracing Laguerre polynomials, is applicable to test functions whose purpose is to establish the DQM weighting coefficients, focussing on the use of the DQM in investigating solving nonlinear differential equations numerically for the representation of the steady incompressible flow problem of a fourth-grade non-Newtonian fluid magnetic field between two stationary parallel plates. A series of graphs are used to demonstrate the ways a range of important physical parameters influence the velocity profile. The level of agreement when comparing a small number .of grid points in the new technique with analytical solutions is remarkably high

کلمات کلیدی:

MHD fluid, fourth-grade fluid, Laguerre polynomials, Differential quadrature method