# Application of Differential Transform Method in the MHD Flow of a Micropolar Fluid Between Two Porous Disks

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## A B S T R A C T

The model of steady and axisymmetric flow in a porous medium filled with a micropolar fluid between two disks is analytically discussed. The system of highly nonlinear partial differential equations of velocity and microrotation are reformed into a non-dimensional form by using appropriate similarity transformation. The estimated solution of such equations is calculated by using the differential transform method (DTM), which gives the output in the series form. The influence of the micropolar parameter, Reynolds number, and magnetic field parameter on the velocity and microrotation profiles are discussed in detail and presented graphically. The numerical values of skin friction and couple stress is compared with previously published results. To check the accuracy and validity of the method, the results obtained by DTM are compared with the results obtained by numerical methods.

**Keywords:** Differential Transform Method; Porous Disks; Magnetohydrodynamics; Micropolar Fluids.