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EFFECT OF MHD ON PERISTALTIC TRANSPORT OF A PSEUDOPLASTIC FLUID IN AN ASYMMETRIC CHANNEL WITH POROUS MEDIUM

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Abstract

The present paper deals with the peristaltic flow of a conducting pseudoplastic fluid in an asymmetric channel with porous medium has been studied under the assumptions of long wavelength and low Reynolds number. The channel asymmetry is generated by the movement of peristaltic waves with speed c but with different phase and amplitudes on the flexible walls of the channel. The expressions for stream function, axial velocity, pressure gradient and pressure rise over a wavelength are obtained using perturbation technique. The effects of various parameters on the velocity and pressure rise are discussed with the help of graphs. It is noticed that the velocity decreases with the increase of magnetic Parameter M.

Key Words : *Peristaltic transport, Pseudoplastic fluid, Porous medium, MHD, Asymmetric channel.*