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NUMERICAL SOLUTION OF THE FLOW OF A NON-NEWTONIAN REINER-RIVLIN FLUID IN A POROUS ANNULUS

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Abstract

The problem of flow of a non-Newtonian Reiner-Rivlin fluid in a porous annulus by finite difference technique has been discussed. The behaviour of velocity functions has been studied for different sets of values of Reynolds number R, cross-viscous parameter _c and is shown graphically. It is worth mentioning that the numerical technique (generalized Newton-Raphson) is fast conversing and is capable of solving a quite difficult set of non-linear equations to a good degree of accuracy in little iterations.

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Key Words: Flow, Reiner-Rivlin fluid, Porous annulus, Numerical technique.