# Entropy optimized Darcy-Forchheimer slip flow of Fe3O4-(CH2OH)2 nanofluid past a stretching / shrinking rotating disc: Application to electric machines

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## Abstract

The present article reveals the extent of effectiveness available from the investigation on entropy generation, thermal radiation, viscous dissipation on Darcy-Forchheimer convective slip flow of Fe3O4-(CH2OH)2 nanofluid past stretching/shrinking rotating disk subject to suction. The concepts of different parameters and their effects on velocity, temperature, entropy generation number and Bejan number profiles have been elaborated in this explanatory paper. The explanations using graphs and numerical tables help smoothen the understanding and strengthen the interpretations of the results of the study. The major eye-catching outcome of the study is that the augmented slip parameter undermines the tangential velocity and fluid suction invites a diminutive radial velocity as well as temperature distribution due to stretching/shrinking rotating disk. Enhanced Reynolds number peters the entropy generation number out for stretching rotating disk which was the goal of the study to be accomplished.
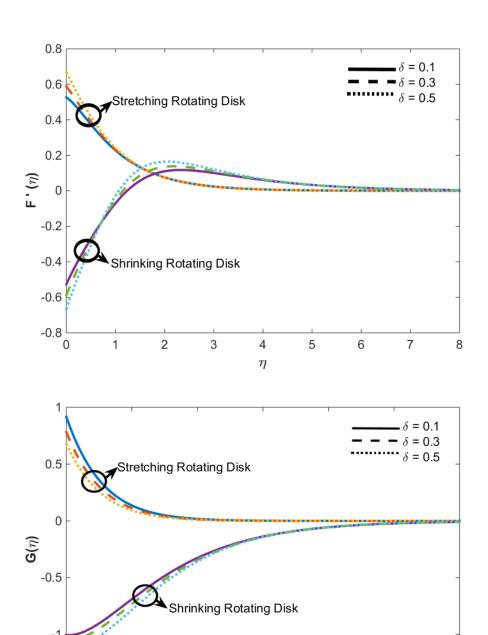
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`Manuscript (28. 04. 2020).pdf` available at https://authorea.com/users/317550/articles/447613-entropy-optimized-darcy-forchheimer-slip-flow-of-fe3o4-ch2oh-2-nanofluid-past-a-stretching-shrinki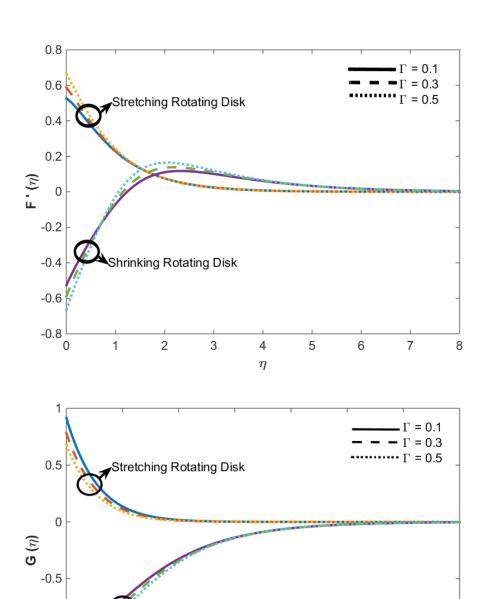ng-rotating-disc-application-to-electric-machines