Hall and Heat Transfer Effects on the Steady Flow of a Sisko Fluid

Tasawar Hayat[a], Khadija Maqbool[a], and Saleem Asghar[b]

[a] Department of Mathematics, Quaid-i-Azam University, Islamabad-44000, Pakistan
[b] Department of Mathematical Sciences, COMSATS, Institute of Information Technology, H-8, Islamabad-Pakistan

Reprint requests to T. H.; Fax.: +92-51-2601171; E-mail: pensy_t@yahoo.com

Z. Naturforsch. **64a,** 769 – 782 (2009); received June 23, 2008 / revised January 12, 2009

This investigation is concerned with the flow and heat transfer analysis between two disks rotating about non-coaxial axes normal to the disks. The constitutive equation of an incompressible Sisko fluid is used. The fluid is electrically conducting and the Hall effect is taken into account. Analytic solutions of the governing nonlinear problem is obtained by homotopy analysis method (HAM). The graphs are presented and discussed. Finally a comparison is made between the results of viscous and Sisko fluids.

Key words: Sisko Fluid; Nonlinear Problem; HAM Solution; Heat Transfer.