

## Free Convection from a Perforated Spinning Cone with Heat Generation, Temperature-Dependent Viscosity and Partial Slip

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**Abstract :** The problem of free convection from a perforated spinning cone with viscous dissipation, temperature-dependent viscosity, and partial slip was studied. The boundary layer velocity and temperature profiles were numerically computed for different values of the spin, viscosity variation, inertia drag force, Eckert, suction/blowing parameters. The partial differential equations were transformed into a system of ordinary differential equations which were solved using the fourth-order Runge-Kutta method. This paper considered the effect of partial slip and spin parameters on the swirling velocity profiles which are rarely reported in the literature. The results obtained by this method was compared to those in the literature and found to be in agreement. Increasing the viscosity variation parameter, spin, partial slip, Eckert number, Darcian drag force parameters reduce swirling velocity profiles.

**Keywords :** free convection, suction/injection, partial slip, viscous dissipation

**Conference Title :** ICAMNA 2017 : International Conference on Applied Mathematics and Numerical Analysis

**Conference Location :** Cape Town, South Africa

**Conference Dates :** November 02-03, 2017