Magnetohydrodynamic Counter Rotating Flow and Heat Transfer in a Truncated Conical Container

Authors
A Bendjaghlouli, DE Ameziani, B Mahfoud, L Bouragbi

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Description
T0= mean temperature,[Th Tc⁄ 2] U= dimensionless velocity vector u, v, w= dimensionless radial, axial, azimuthal velocity components α= thermal diffusivity of the fluid, m2⁄s β= thermal expansion coefficient, 1⁄K γ= aspect ratio (H⁄R) Θ= dimensionless temperature ν= kinematic viscosity of the fluid, m2⁄s μ0= magnetic permeability, H⁄m λ= thermal conductivity, w⁄m· C ρ= density of the fluid, kg⁄ m3 σ= electric conductivity, Ω⁄ m Φ= dimensionless electric potential Ω= angular velocity, rad⁄s τ= dimensionless time