

Title: Slip effect on an unsteady MHD stagnation-point flow of a micropolar fluid towards a shrinking sheet with thermophoresis effect

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Abstract: The effect of slip and thermophoresis on an unsteady magnetohydrodynamic stagnation-point-flow micropolar fluid with heat and mass transfer towards a shrinking sheet has been investigated. The governing equations are reduced to a system of non-dimensional partial differential equations by using similarity transformation, before being solved numerically using the Keller-box method. The effects of various physical parameters on the velocity, microrotation, temperature, and concentration profiles as well as the reduced skin friction, the reduced Nusselt number, and the reduced Sherwood number are analyzed and discussed graphically. It is found that the concentration boundary layer thickness decreases with increasing values of the thermophoresis. Comparison with previously published results under the limiting cases is made and found to be in excellent agreement.