

## **Dual solutions in nanofluids passing a moving plate with thermal radiation and stability analysis**

### **ABSTRACT**

The present study deals with the flow and heat transfer in nanofluids over a moving plate in the presence of thermal radiation. The governing boundary layer equations in the form of nonlinear partial differential equations are transformed into a system of nonlinear ordinary differential equations by using the similarity transformations method. Then, the obtained equations are solved numerically using the bvp4c function in MATLAB. Numerical results show that dual solutions exist for certain range of the controlling parameter. Stability analysis is employed to identify which solution is stable and valid physically. Results from the stability analysis show that the first solution is stable and physically realizable while the second solution is unstable and not physically realizable.

**Keyword:** Dual solutions; Nanofluids; Moving plate; Stability analysis

