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Effect of Suction/Injection on the Entropy Generation of Third Grade Fluid with Convective Cooling

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Abstract: Effect of suction/injection on the rate of entropy generation of third grade fluid with convective cooling is analysed in this work. The highly non-linear boundary value problems obtained from the governing equations are solved by Adomian decomposition method (ADM). Some plots are presented to explain the influence of pertinent parameters on fluid motion, temperature, entropy generation and irreversibility ratio. From the results it is shown that suction/injection and third grade fluid parameters reduce fluid velocity across the channel, and increase in suction/injection parameter enhances fluid temperature while convective cooling parameter reduces it. Entropy generation is enhanced by suction/injection parameter at the lower wall but reduces it at the upper wall.

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