

FLOW OF A MAXWELL FLUID BETWEEN TWO SIDE WALLS INDUCED BY A CONSTANTLY ACCELERATING PLATE

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The unsteady flow of a Maxwell fluid induced by a constantly accelerating plate between two side walls perpendicular to the plate is studied. Exact solutions for the velocity field are established by means of the Fourier sine transforms. The adequate tangential stresses are also determined. The similar solutions for a Newtonian fluid are obtained as limiting cases of our solutions. In the absence of the side walls, the similar solutions for the unsteady flow over an infinite flat plate are recovered.

Key words: Maxwell fluid, constantly accelerating plate, side walls, velocity field.