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RESEARCH ARTICLE

MHD rotating flow of a Maxwell fluid with Arrhenius activation energy and non-Fourier heat flux model

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Abstract

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Abstract

In the present work, the effects of the transfer of heat, as well as the mass phenomenon of a Maxwell fluid in revolving flow over a unidirectional stretching surface are discussed. The result of the magnetic field within the boundary layer is considered. In the energy equation, the heat flux model of non-Fourier Cattaneo–Christov is employed. The customized Arrhenius function for energy activation is used. By using the transformation strategy, nondimensional expressions are achieved. To predict the highlights of the current effort, the result of the emerging nonlinear differential structure is calculated with the aid of the shooting procedure as well as the Runge–Kutta Fehlberg procedure. The influence of

