

## *Abstract*

Couette flows of Maxwell fluid with non-integer order derivative in the sense of Caputo and Atangana Baleanu derivative operators with non-singular kernel under the slip boundary condition are investigated. The flow of the fluid is produced by the motion of a bottom flat plate. To obtain the expressions for exact velocity field and shear stress semi analytic method along with the integral transforms is used. The obtained solutions are organized in simple forms in terms of certain generalized functions, that can be engaged to obtain the known solutions from the literature. The control of the new non-integer order derivative parameter on the velocity field and shear stress is investigated, moreover, a comparative study with an older model, is analyzed by graphical illustrations.