
Summary: In this paper, we study the oscillation of fractional neutral differential equation

$$D_t^\alpha [a(t) D_t^\alpha (x(t) + p(t) x(\tau(t))) + f(t, x(\sigma(t))) = 0, t \geq t_0 > 0, 0 < \alpha < 1,$$

where $D_t^\alpha (\cdot)$ denotes the modified Riemann-Liouville derivative with respect to the variable $t$. Some new oscillation criteria for the equation are obtained through the reduction of order and generalized Riccati transformation.

MSC:

34K37 Functional-differential equations with fractional derivatives
34K11 Oscillation theory of functional-differential equations
34K40 Neutral functional-differential equations
34A08 Fractional ordinary differential equations

Keywords:
oscillation; fractional differential equations; modified Riemann-Liouville derivative

Full Text: DOI