Kucche, Kishor D.; Mali, Ashwini D.
Initial time difference quasilinearization method for fractional differential equations involving generalized Hilfer fractional derivative. (English) Zbl 1449.34022

Summary: We present the quasilinearization method with initial time difference for nonlinear fractional differential equations (FDEs) involving generalized Hilfer fractional derivative under various conditions on the nonlinear function involved in the right hand side of the equation. An essential comparison result concerning lower and upper solutions is obtained for this generalized FDEs without demanding the Hölder continuity assumption.

MSC:

34A08 Fractional ordinary differential equations
26A33 Fractional derivatives and integrals
34A12 Initial value problems, existence, uniqueness, continuous dependence and continuation of solutions to ordinary differential equations
34A45 Theoretical approximation of solutions to ordinary differential equations

Keywords:
generalized Hilfer fractional derivative; quasilinearization method; initial time difference; comparison theorems

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