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Initial value problems of first order fractional differential equations via monotone iterative techniques

In this presentation, I'll discuss the definitions and properties of fractional integrals, fractional derivatives and minimal and maximal generalized normal solutions of initial value problems of first order fractional differential equations via the monotone iterative techniques. Motivated by the logistic type population models with heterogeneous environments governed by order ordinary differential equations, we provide an example on the existence of nonnegative minimal and maximal generalized normal solutions of initial value problems of first order fractional differential equations with logistic type population models. The nonlinearities involved in the logistic type population models may not be continuous.