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Existence and Ulam stability results for nonlinear hybrid implicit Caputo fractional differential equations. (English) [Zbl 1474.34063](#)
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Summary: In this paper, we study the existence, uniqueness and estimate of solutions for nonlinear hybrid implicit Caputo fractional differential equations by using the contraction mapping principle and the generalization of Gronwall's inequality. After that, we also establish the Ulam stability for the problem at hand. Finally, an example is given to illustrate this work.

MSC:

- [34A09](#) Implicit ordinary differential equations, differential-algebraic equations Cited in 10 Documents
- [34A08](#) Fractional ordinary differential equations
- [34D10](#) Perturbations of ordinary differential equations
- [47N20](#) Applications of operator theory to differential and integral equations

Keywords:

implicit fractional differential equations; Caputo fractional derivatives; fixed point theorems; existence; uniqueness; Ulam stability

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