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A note on fuzzy differential equations. (English) Zbl 1100.34500

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The effect of the forcing term on the solution of fuzzy differential equations is studied. Several examples are given to show that the fuzzy solution strongly depends on the forcing term. A solution to a fuzzy inclusion is proposed and is illustrated by an example.

Reviewer: [Ahmed Hegazi \(Mansoura\)](#)

MSC:

34A12 Initial value problems, existence, uniqueness, continuous dependence and continuation of solutions to ordinary differential equations Cited in 71 Documents

Keywords:

fuzzy differential equations; differential inclusions

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References:

- [1] Bhaskar, T.G.; Lakshmikantham, V.; Vasundhara Devi, Revisiting fuzzy differential equations, *Nonlinear anal.*, 58, 351-358, (2004) · [Zbl 1095.34511](#)
- [2] Buckley, James J.; Feuring, Thomas, Fuzzy differential equations, *Fuzzy set. syst.*, 110, 43-54, (2000) · [Zbl 0947.34049](#)
- [3] Diamond, P., Brief note on the variation of constants formula for fuzzy differential equations, *Fuzzy set. syst.*, 129, 65-71, (2002) · [Zbl 1021.34048](#)
- [4] Diamond, P., Stability and periodicity in fuzzy differential equations, *IEEE T. fuzzy syst.*, 8, 853-890, (2000)
- [5] Diamond, P.; Kloeden, P., *Metric spaces of fuzzy sets*, (1994), World Scientific Singapore · [Zbl 0843.54041](#)
- [6] Hüllermeier, E., An approach to modelling and simulation of uncertain systems, *Int. J. uncertain. fuzz., knowledge-based systems*, 5, 117-137, (1997) · [Zbl 1232.68131](#)
- [7] Kaleva, O., Fuzzy differential equations, *Fuzzy set. syst.*, 24, 301-317, (1987) · [Zbl 0646.34019](#)
- [8] Kaleva, O., The Cauchy problem for fuzzy differential equations, *Fuzzy set. syst.*, 35, 389-396, (1990) · [Zbl 0696.34005](#)
- [9] Lakshmikantham, V.; Mohapatra, R.N., *Theory of fuzzy differential equations and inclusions*, (2003), Taylor & Francis London · [Zbl 1072.34001](#)
- [10] Negoita, C.V.; Ralescu, D.A., *Applications of fuzzy sets to system analysis*, (1975), Birkhauser Basel · [Zbl 0326.94002](#)
- [11] Puri, M.L.; Ralescu, D.A., Differentials of fuzzy functions, *J. math. anal. appl.*, 91, 552-558, (1983) · [Zbl 0528.54009](#)

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