

# Impulsive differential equations with variable times

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## Abstract

In this paper, Schauder-Tychonoff's fixed point theorem and the notion of upper and lower solutions are used to investigate the existence of solutions for first order impulsive equations.

**Keywords:** Impulsive equations; upper and lower solutions; fixed point.

## References

- [1] J. Dugundji and A. Granas, *Fixed point Theory*, Springer-Verlag, New York, 2003
- [2] V. Lakshmikantham, D.D. Bainov and P.S.Simeonov, *Theory of impulsive Differential Equations*, World Scientific, Singapore, 1989