

A GENERAL RESULT ON ASYMPTOTIC INTEGRATION OF
IMPULSIVE DIFFERENTIAL EQUATIONS

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Abstract

There is hardly any work about asymptotic integration of differential equations under impulse effect. We consider second order nonlinear impulsive differential equations with fixed moments of impulses. By using principal and nonprincipal solutions we find an asymptotic representation of the solutions depending on a parameter.

Keywords: fixed point theory, impulsive differential equations, principal and nonprincipal solutions, asymptotic integration

References

- [1] S. Rogovchenko, Y. Rogovchenko, Asymptotic behaviour of solutions of second order nonlinear differential equations, *Portugal. Math.* **57** (2000) 17-33.
- [2] T. Ertem, A. Zafer, Asymptotic integration of second-order nonlinear differential equations via principal and nonprincipal solutions, *Appl. Math. Comput.* **219** (2013) 5876-5886.

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