

# Periodic solutions of a second-order iterative differential equation

Houyu Zhao<sup>1</sup>

<sup>1</sup>Chongqing Normal University

May 5, 2020

## Abstract

In this paper, we use Schauder and Banach fixed point theorem to study the existence, uniqueness and stability of periodic solutions of a class of iterative differential equation 
$$\alpha x''(t) + \beta x'(t) + \gamma x(t) = \lambda_1(t)x(t) + \lambda_2(t)x(x(t)) + \dots + \lambda_n(t)x^{[n]}(t) + f(t).$$

## Hosted file

Periodic solutions of a second-order iterative differential equation.pdf available at <https://authorea.com/users/295596/articles/424282-periodic-solutions-of-a-second-order-iterative-differential-equation>