Math326

Non linear dynamics

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Contents

Introduction

Nonlinear Dynamics ≡ Dynamical systems We are interested in systems which change over time

Two types of dynamical system of interest:

1. Continous dynamical systems defined by ode s
2. Discrete dynamical systems defined by a map

Examples of Continuous Dynamical Systems

1. Exponential growth and decay Consider

$$\text{Consider } \dot{x} = \lambda x \quad x \in R$$