

**Definition** (Continuous-time dynamical system). A dynamical system on  $\mathbb{R}^n$  may be defined by a function

$$f : \mathbb{R}^n \rightarrow \mathbb{R}^n.$$

A trajectory of a dynamical system is a function  $x : \mathbb{R} \rightarrow \mathbb{R}^n$  such that

$$\dot{x}_t = f(x_t).$$

We use the notation  $\dot{x}$  to abbreviate  $dx/dt$ .