

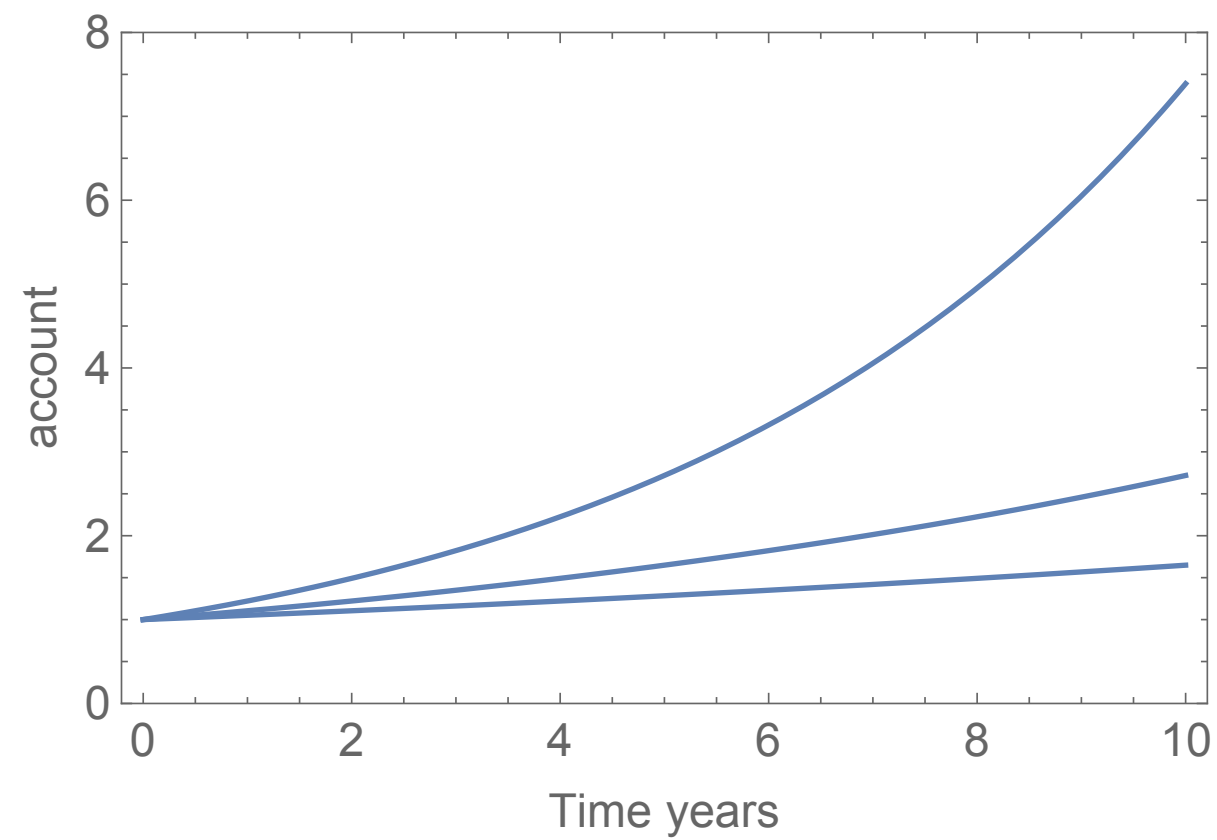
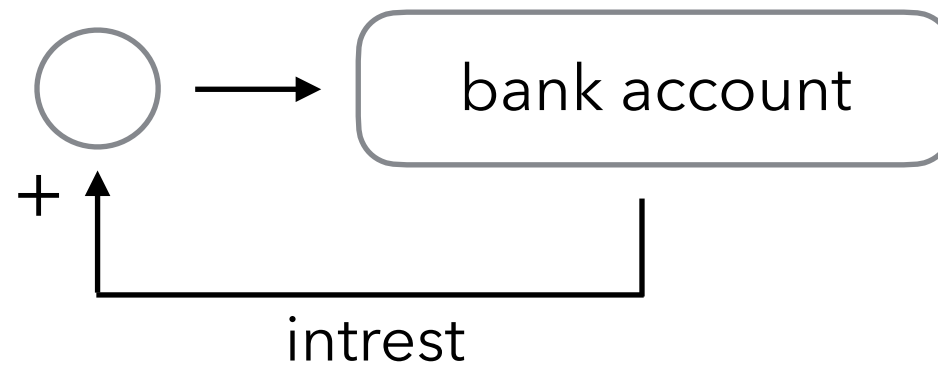
Introduction to the Biosphere-Atmosphere system

Lecture Autumn 2024

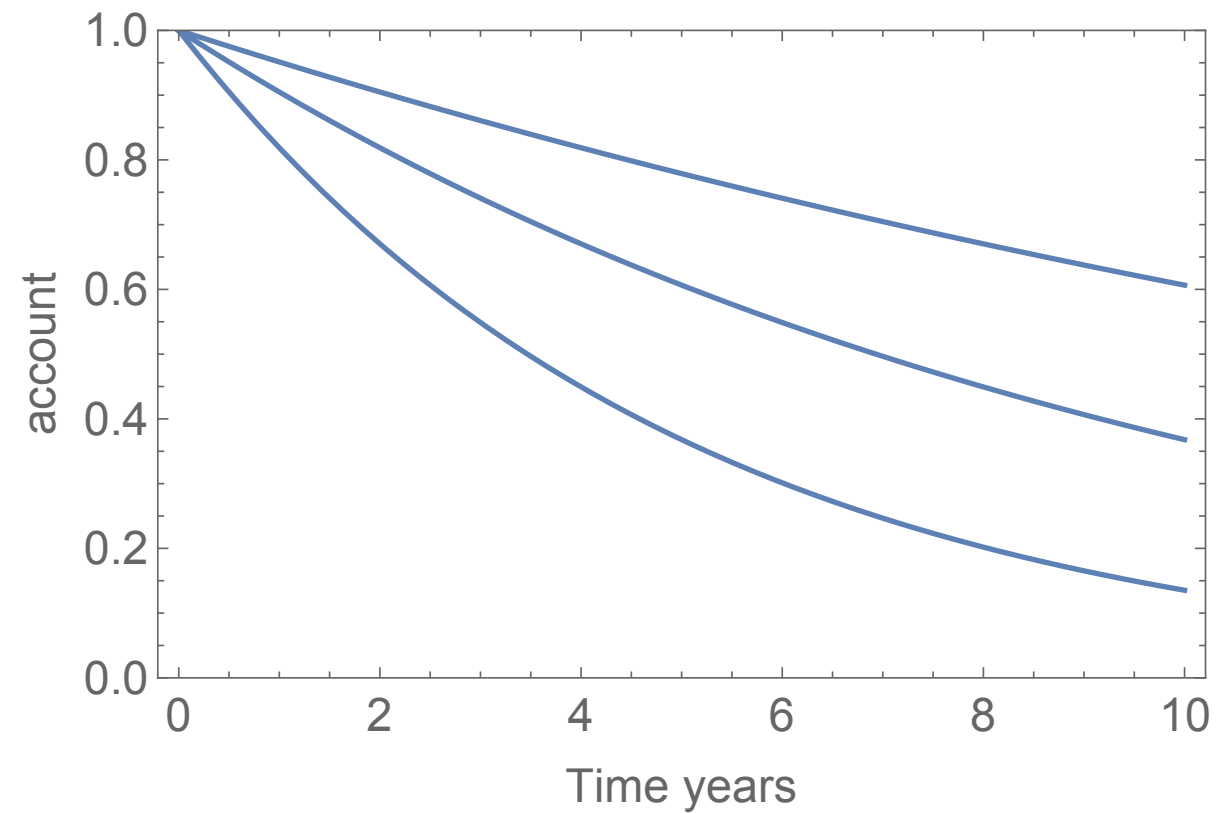
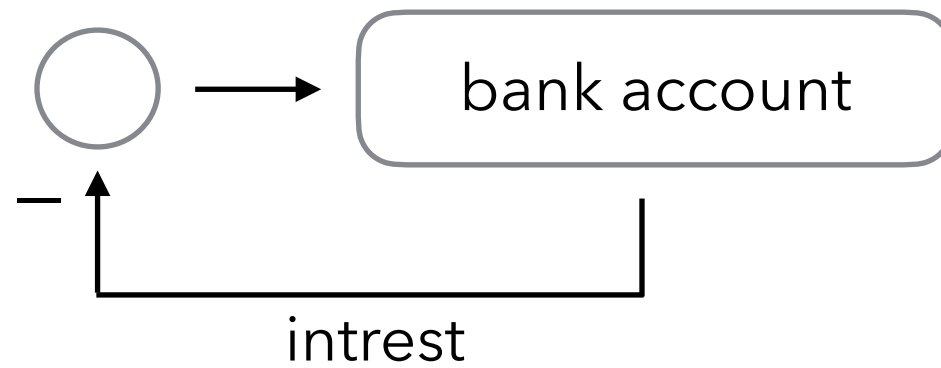
Steffen M. Noe

Hands on session

Positive feedback



Negative feedback



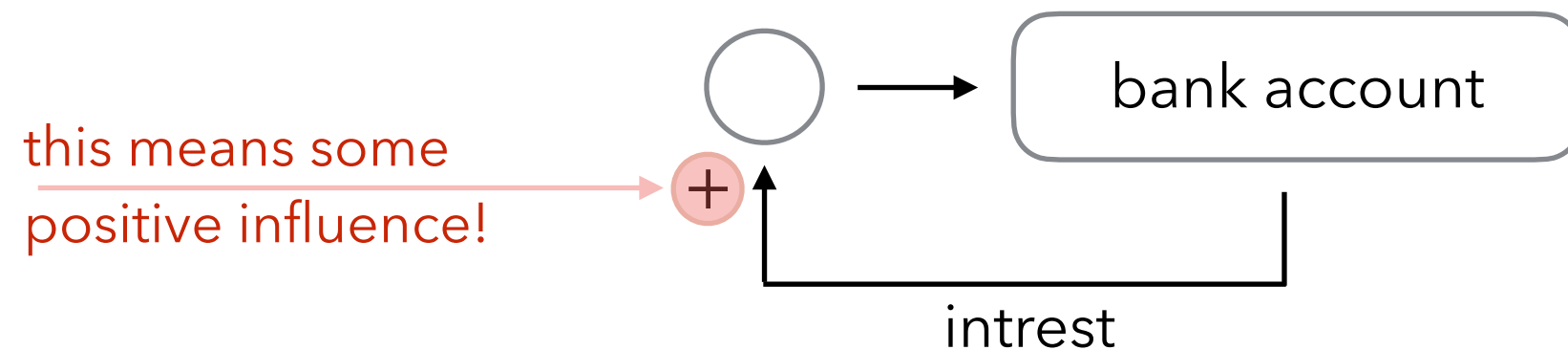
What happened to our bank account?

We generated a limitless growth (**positive feedback or feed forward**) and a limitless loss (**negative feedback**).

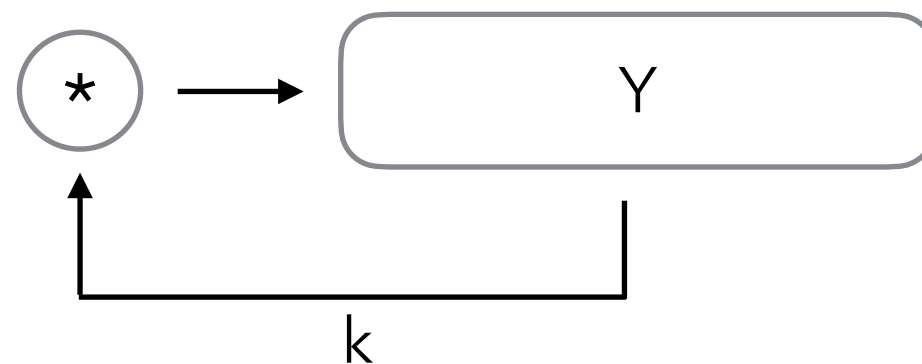
The systems dynamic was not linear anymore. The dependency on the size of the stock made the system acting with an exponential response.

How to translate from a graphics to equations

Let's try to understand why the system had an exponential behaviour!



First, let's simplify the system a bit for easier use:



Lecture