

## SELF-EVALUATION EXERCISE 1: Build up the SEIR model

The student will try to construct a SEIR model (Susceptible-Exposed-Infected-Recovered). It can be build up from the SI model. In this model, susceptible animals  $S$  get exposed to pathogens by contact with  $I$  infected animals. Here, there is an incubation period for the pathogen in the exposed animals  $E$  before these  $E$  become infectious/infected  $I$ . The incubation rate is the *incubation period*<sup>-1</sup>. After this incubation period exposed animals  $E$  become infected ( $I$ ). In addition, it is assumed that infected animals ( $I$ ) can recover at a certain recovery rate.