

$$\frac{dS}{dt} = \beta c \frac{I}{N}$$

$$\implies f := \beta c = \frac{I}{N} \left( \frac{dS}{dt} \right)^{-1}$$

$$R^2 = 1 - \frac{\sum_i (y_{true,i} - y_{pred,i})^2}{\sum_i (y_{true,i} - y_{true,i}^-)^2}$$