Generalized S-I-R model

1 Equations

These are the equations for the model:

$$\frac{dE_1}{dt} = \Theta_1 E_1 + \mu_1 R_1 \Lambda_1 R_1 + \delta_1 - \Lambda_1 R_1 - \delta_1$$

$$\frac{dI\_pre_1}{dt} = \Theta_1 I\_pre_1 + \mu_1 E_1$$

$$\frac{dI\_symp\_s_1}{dt} = \Theta_1 I\_symp\_s_1 + \mu_1 I\_pre_1$$

$$\frac{dI\_symp\_m_1}{dt} = \Theta_1 I\_symp\_m_1 + \mu_1 I\_pre_1$$

$$\frac{dI\_asymp_1}{dt} = \Theta_1 I\_asymp_1 + \mu_1 I\_pre_1$$

$$\frac{dHOSP\_m_1}{dt} = \Theta_1 HOSP\_m_1 + \mu_1 I\_symp\_m_1$$

$$\frac{dHOSP\_s_1}{dt} = \Theta_1 HOSP\_s_1 + \mu_1 I\_symp\_s_1$$

$$\frac{dR_1}{dt} = \Theta_1 R_1 + \mu_1 I\_symp\_s_1 + \mu_1 I\_symp\_m_1 + \mu_1 I\_asymp_1 + \mu_1 HOSP\_m_1 + \mu_1 HOSP\_s_1$$

$$\frac{dS}{dt} = \frac{R_1}{N}\delta_1 - \frac{E_1}{N}\delta_1$$