1 Model Explanation

The SIRRe model is encapsulated by the following adjustment to the Kendrick-McCormack equations:

$$\frac{dS}{dt} = -\beta SI + \gamma I$$

$$\frac{dI}{dt} = \beta SI - \gamma I - \nu I + \mu R$$

$$\frac{dR}{dt} = \gamma I - \mu dR$$

$$\frac{dD}{dt} = \nu I$$

$$\frac{dRe}{dt} = \mu R$$

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syms m n g b

% Jacobian of SIRRe model, b = beta * s
J(g, b, n, m) = [0  -b+g   0 0 0;
                 0 -b-g-n  m 0 0;
                 0    g   -m 0 0;
                 0    n    0 0 0;
                 0    0    m 0 0;];
[V, D] = eig(J)
```