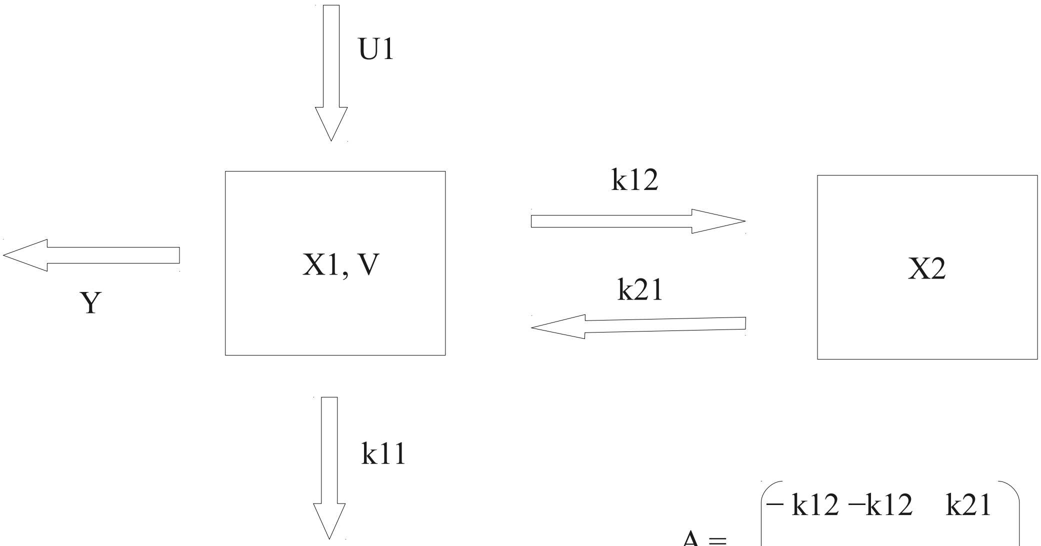
Sensitivity analysis.



$$A = \begin{pmatrix} -k12 - k12 & k21 \\ k12 & -k21 \end{pmatrix} \qquad B = \begin{pmatrix} 1 \\ 0 \end{pmatrix}$$

$$\dot{X}1 = U1 - X1 * k12 - X1 * k11 + X2 * k21$$
$$\dot{X}2 = X1 * k12 - X2 * k21$$

$$C = \begin{pmatrix} 1/V & 0 \\ 0 & 0 \end{pmatrix} \qquad D = \begin{pmatrix} 0 \\ 0 \end{pmatrix}$$

$$\lambda' = A \cdot \lambda + H \cdot X$$
$$\eta = C \cdot \lambda + V \cdot X$$

k11:

$$\lambda1' = (-k11 - k12) \cdot \lambda1 + k21 \cdot \lambda2 - X1$$
$$\lambda2' = k12 \cdot \lambda1 - k21 \cdot \lambda2$$
$$\eta = 1/V \cdot \lambda1$$

$$H = \begin{pmatrix} -1 & 0 \\ 0 & 0 \end{pmatrix} \qquad V = \begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$$

k12:

$$\lambda1' = (-k11 - k12) \cdot \lambda1 + k21 \cdot \lambda2 - X1$$
$$\lambda2' = k12 \cdot \lambda1 - k21 \cdot \lambda2 + X1$$
$$\eta = 1/V \cdot \lambda1$$

$$H = \begin{pmatrix} -1 & 0 \\ 1 & 0 \end{pmatrix} \qquad V = \begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$$

k21:

$$\lambda1' = (-k11 - k12) \cdot \lambda1 + k21 \cdot \lambda2 + X2$$
$$\lambda2' = k12 \cdot \lambda1 - k21 \cdot \lambda2 - X2$$
$$\eta = 1/V \cdot \lambda1$$

$$H = \begin{pmatrix} 0 & 1 \\ 0 & -1 \end{pmatrix} \qquad V = \begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix}$$

V:

$$\lambda1' = (-k11 - k12) \cdot \lambda1 + k21 \cdot \lambda2$$
$$\lambda2' = k12 \cdot \lambda1 - k21 \cdot \lambda2$$
$$\eta = 1/V \cdot \lambda1 - X1/V^2$$

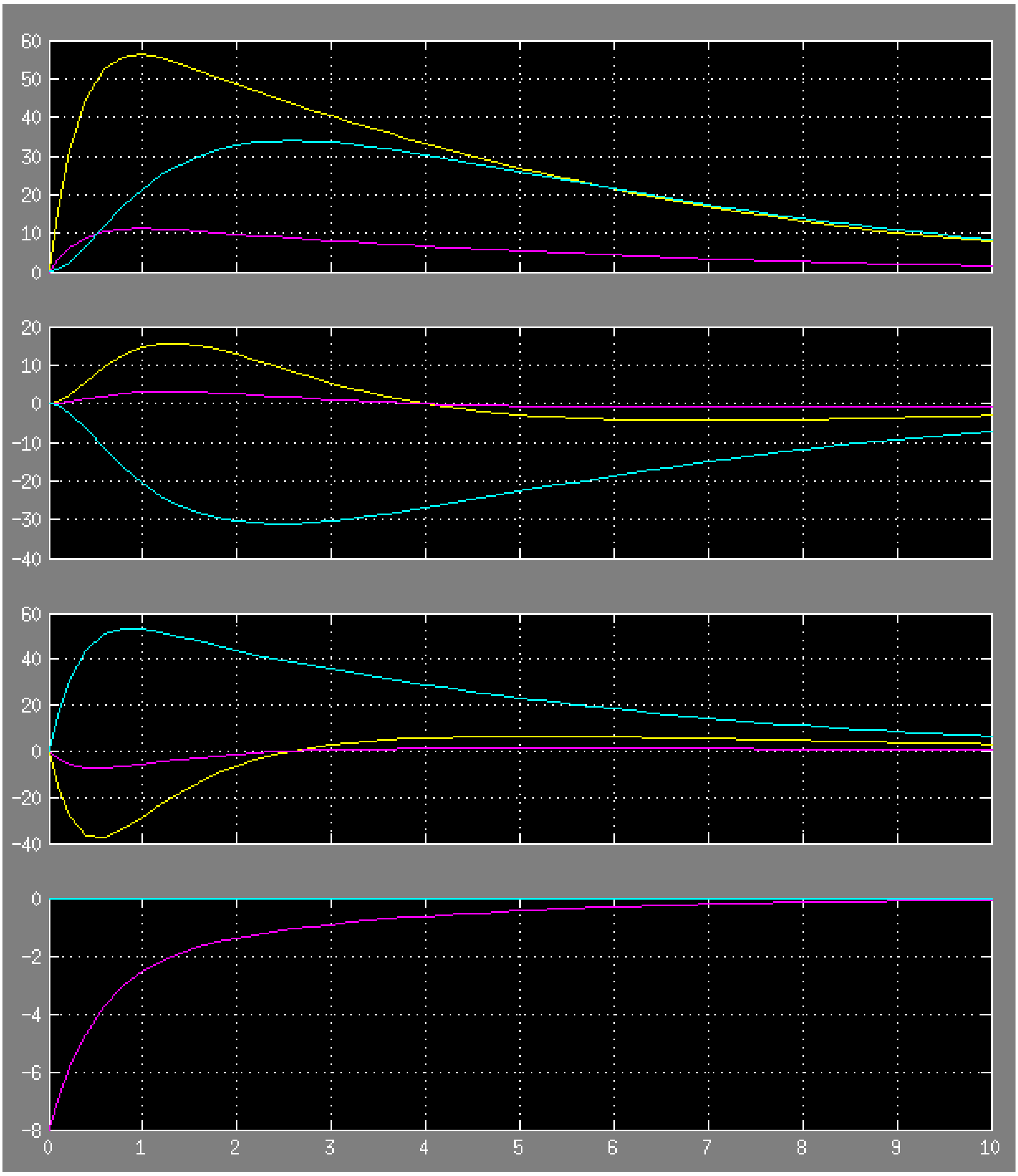
$$H = \begin{pmatrix} 0 & 0 \\ 0 & 0 \end{pmatrix} \qquad V = \begin{pmatrix} -1/V^2 & 0 \\ 0 & 0 \end{pmatrix}$$

k11

k21

k12

V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-4
-6
-8
0 1 2 3 4 5 6 7 8 9 10