

# ECC2025: Simulation Parameters

Ruixuan Zhao, Guitao Yang, Peng Li, and Boli Chen

This is a supplementary document for the conference paper “**A Multi-hop Sensor Network-based State Estimation for Discrete-time Linear Systems with Dynamic Communication Graphs**” published at the European Control Conference 2025.

$$A = \begin{bmatrix} 0 & 1.2 & 0 & 0 & 0 \\ -1.1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & -1 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 0 & -1.1 \end{bmatrix},$$

$$C_1 = [1 \ 0 \ 0 \ 0 \ 0], \ C_2 = [0 \ 0 \ 1 \ 0 \ 0],$$

$$C_3 = [0 \ 0 \ 0 \ 0 \ 1].$$

$$L_1 = [-0.70 \ -1.00 \ -1.10 \ -0.85]^\top,$$

$$L_2 = [-0.70 \ -0.88 \ -1.10 \ -0.70]^\top,$$

$$L_3 = [-1.40 \ -1.60]^\top,$$

$$G_1 = \begin{bmatrix} 0.70 & 1.20 & 0 & 0 \\ -0.10 & 0 & 0 & 0 \\ 0 & 0 & 1.10 & 1.20 \\ 0 & 0 & -0.25 & 0 \end{bmatrix},$$

$$G_2 = \begin{bmatrix} 0.70 & 1.00 & 0 & 0 \\ -0.12 & 0 & 0 & 0 \\ 0 & 0 & 1.10 & 1.00 \\ 0 & 0 & -0.30 & 0 \end{bmatrix}, G_3 = \begin{bmatrix} 0.30 & 0 \\ 0 & 0.50 \end{bmatrix},$$

$$H_1 = \begin{bmatrix} 89.00 & 230.00 & -88.00 & -230.00 \\ -10.00 & -25.00 & 10.00 & 26.00 \end{bmatrix},$$

$$H_2 = \begin{bmatrix} 89.00 & 191.6667 & -88.00 & -191.6667 \\ -12.00 & -25.00 & 12.00 & 26.00 \end{bmatrix},$$

$$H_3 = [1.5625 \ -0.5625].$$