

HW 9: Due tomorrow

Lab 5: Due Wednesday

OH next week: Ehsan — Bainer 2071
Tuesday 19th 3-5 PM
Jason Weds. 20th 11-12 AM
Bainer 2095 Thurs. 21st 2-3 PM

Final Exam Friday 22nd 3:30 PM

- 2 hrs
- open notes: anything you have written Cartyed
or anything I have written in
lecture notes
- no electronic devices
- MC, T/F, Short & long answers
- Comprehensive

Eigenvalues

$$s_{1,2} = -8.5 \pm 17.6i$$

stable, oscillating

$$s_3 = -2.1$$

stable, no oscillation

$$s_4 = 3.1$$

unstable, no oscillation

Eigenvectors

$$\begin{matrix} \mathbf{P}_3 \\ \mathbf{P}_7 \\ \mathbf{P}_9 \\ \mathbf{P}_{17} \end{matrix} \begin{bmatrix} -0.102 \pm 0.249i \\ 0.960 \\ -0.002 \pm 0.003i \\ 0.087 \pm 0.601i \end{bmatrix}$$

$$\begin{bmatrix} 0.161 \\ 0.984 \\ -0.034 \\ -0.662 \end{bmatrix}$$

$$\begin{bmatrix} 0.090 \\ -0.996 \\ -0.023 \\ -0.017 \end{bmatrix}$$

Phasor Plot



