

Homework 5

- 1) $(-2.77, -2.48, 6) \longleftrightarrow (-4.77, -4.48, 8)$
 $(-0.77, -2.48, 6) \longleftrightarrow (-2.77, -4.48, 8)$
 $(-0.77, -2.48, 8) \longleftrightarrow (-2.77, -4.48, 10)$
 $(-2.77, -2.48, 8) \longleftrightarrow (-4.77, -4.48, 10)$
 $(-2.77, -4.48, 6) \longleftrightarrow (-4.77, -6.48, 8)$
 $(-0.77, -4.28, 6) \longleftrightarrow (-2.77, -6.28, 8)$
 $(-0.77, -4.28, 8) \longleftrightarrow (-2.77, -6.28, 10)$
 $(-2.77, -4.28, 8) \longleftrightarrow (-4.77, -6.28, 10)$
 $(-1.77, -6.28, 7) \longleftrightarrow (-3.77, -8.28, 9)$

$$Wf = 0$$

$$W = \begin{bmatrix} 13.21 & 12.41 & -22.16 & 11.83 & 11.11 & -19.84 & -28.62 & -26.88 & 48 \\ 2.13 & 3.45 & -6.16 & 6.86 & 11.11 & -19.84 & -16.62 & -26.88 & 48 \\ 2.13 & 3.45 & -7.7 & 6.86 & 11.11 & -24.8 & -22.16 & -5.84 & 80 \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ & & & & & & & & \\ 6.672 & 11.45 & -15.93 & 23.67 & 40.69 & -56.52 & -26.39 & -45.86 & 63 \end{bmatrix} \begin{bmatrix} f_{11} \\ f_{12} \\ f_{13} \\ f_{21} \\ f_{22} \\ f_{23} \\ f_{31} \\ f_{32} \\ f_{33} \end{bmatrix} = 0$$

$$\text{SVD}(W)$$

$$F = \begin{bmatrix} -0.689 & 0.541 & -0.308 \\ -0.219 & 0.203 & -0.046 \\ -0.206 & -0.068 & -0.017 \end{bmatrix}$$

$$E = \begin{bmatrix} -0.689 & 0.541 & 0.308 \\ -0.219 & 0.203 & 0.046 \\ 0.206 & 0.068 & -0.017 \end{bmatrix}$$

$$2) E = K^T F K$$

$$K = \begin{bmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

 \Rightarrow

$$E = \begin{bmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

$$\begin{bmatrix} -0.689 & 0.541 & -0.308 \\ -0.219 & 0.203 & -0.046 \\ -0.206 & -0.068 & -0.017 \end{bmatrix}$$

$$\begin{bmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$