

(2)

$$E_2 E_3 E_{32}$$

$$= \begin{pmatrix} & & \\ & & \\ & & \end{pmatrix} \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ e_{31} & e_{32} & 1 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 & 0 \\ e_{31} & 1 & 0 \\ e_{31} & e_{32} & 1 \end{pmatrix}$$

(1)

$$\cancel{E_3 E_1 E_2}$$

$$= \begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & e_{31} & 1 \end{pmatrix} \begin{pmatrix} 1 & 0 & 0 \\ e_{21} & 1 & 0 \\ e_{31} & 0 & 1 \end{pmatrix} \begin{pmatrix} 1 & 0 & 0 \\ e_{31} & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

$$= \begin{pmatrix} & & \\ & & \\ & & \end{pmatrix} \begin{pmatrix} 1 & 0 & 0 \\ e_{21} & 1 & 0 \\ e_{31} & 0 & 1 \end{pmatrix}$$

$$= \begin{pmatrix} 1 & 0 & 0 \\ e_{21} & 1 & 0 \\ e_{21}e_{32} & e_{32} & 1 + e_{31} \end{pmatrix}$$

$\therefore A=LU$ is better than $EA=U$