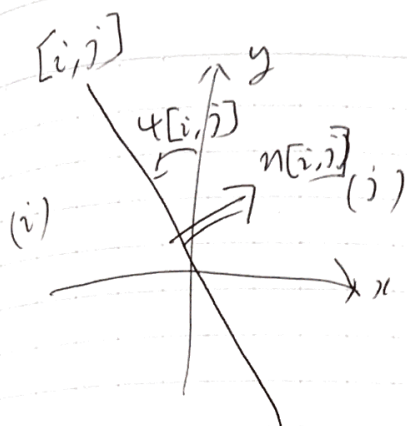




(124)

$$A = \begin{pmatrix} \textcircled{1} & 0 & * & * & 0 & * \\ 0 & \textcircled{1} & * & * & 0 & * \\ 0 & 0 & 0 & 0 & \textcircled{1} & * \end{pmatrix}$$

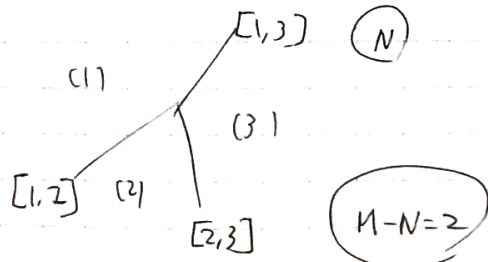
↑ ↑
ヒット ヒット

irreducible かな?
ヒット以外2つに
各行カ非零要素含む

ヒット列: 1, 2, 5
≠ ヒット列: 3, 4, 6

① $N=1, M=3$
 $A = \begin{pmatrix} 1 & a & b \end{pmatrix} \quad a > 0, b > 0$

$$z = \tau_1 = e^{\theta_1} + a e^{\theta_2} + b e^{\theta_3} \quad (k_1 < k_2 < k_3)$$



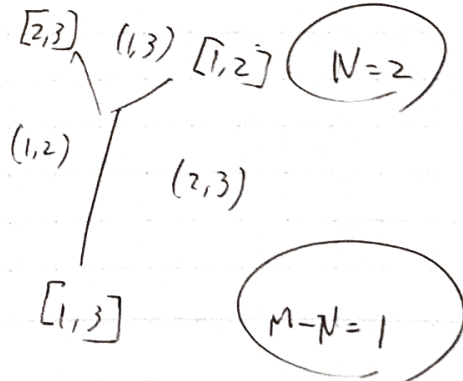
$$\begin{matrix} (N_-, N_+) = (2, 1) \\ \parallel \quad \parallel \\ M-N \quad N \end{matrix}$$

② $N=2, M=3$

$$A = \begin{pmatrix} 1 & 0 & -b \\ 0 & 1 & a \end{pmatrix} \quad a > 0, b > 0$$

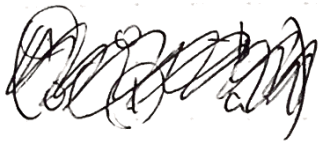
$$z = (k_2 - k_1) e^{\theta_1 + \theta_2} + a(k_3 - k_1) e^{\theta_1 + \theta_3} + b(k_3 - k_2) e^{\theta_2 + \theta_3}$$

$$(N_-, N_+) = (1, 2)$$



$(N^-, N^+) - \text{soliton}$

(1 a b)



$$N^+ = N = 2$$

$$N^- = M - N = 1$$

$\{e_1, \dots, e_N\}$
 $\{g_1, \dots, g_{M-N}\}$

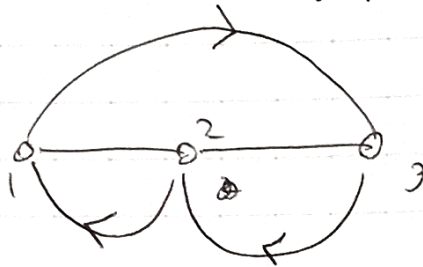
(2, 1) - soliton

pivot: 1, 2

$\{1, 2\}$

non-pivot: 3

$\{2, 3\}$



$$\pi(1) = 3 > 1 \quad \text{excedance}$$

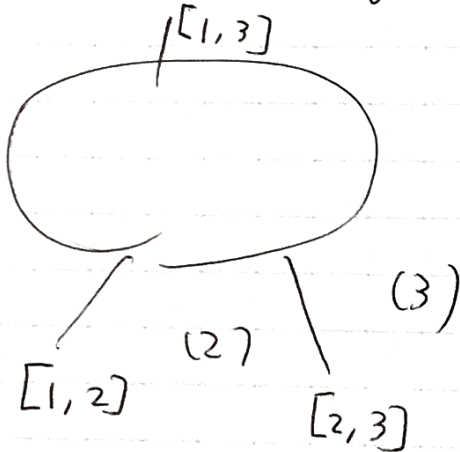
$$\pi(2) = 1 < 2$$

$$\pi(3) = 2 < 3$$

↓

(3 1 2)

Chord diagram



derangement
 不动点のない置換

(1 a)

(1, 1) - soliton

$\{1\}$
 $\{2\}$

$$\pi(1) = 2 > 1$$

$$\pi(2) = 1 < 2$$

excedance

