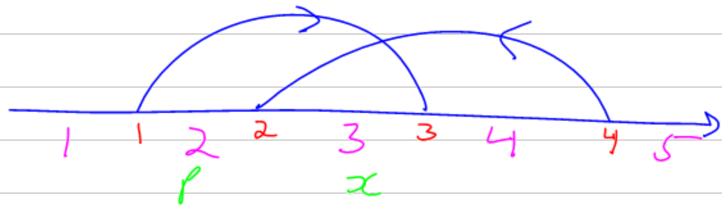

$$R^s_{ij} = T^{s/2} e^{(T^s-1)(p_i - p_j)x_j}$$

$$xp = px - 1 \Rightarrow$$

$$G_{\alpha\beta} = \langle p_\alpha x_\beta \rangle \qquad G_{\alpha,2n+1} = 0$$

& with effect: $G_{1,\beta} = 0$

$$\tilde{G}_{\alpha\beta} = \langle x_\beta p_\alpha \rangle = G_{\alpha\beta} - \delta_{\alpha\beta}$$

X^s_{ij}:

make $B \in M_{2n \times (2n+1)}$

$$\begin{cases} \text{row } i \quad \tilde{G}_{i,\beta} - G_{i+1,\beta} = 0 \iff G_{i\beta} - G_{i+1,\beta} = \delta_{i\beta} \\ \text{row } j \quad \tilde{G}_{j\beta} - G_{j+1,\beta} - (T^s - 1)(G_{i+1,\beta} - \tilde{G}_{i\beta}) = 0 \end{cases}$$

$$\iff T^s G_{j\beta} - G_{j+1,\beta} + (1 - T^s) G_{i+1,\beta} = T^s \delta_{j\beta}$$

$$B = (\phi \mid A) \qquad G = \begin{pmatrix} 0\,0 & 0 \\ D & 0 \\ & 0 \\ & 0 \end{pmatrix} \qquad BG = (I_{2n\times 2n} \mid 0)$$

$$AD = I$$

$$[O_{px}(e^{\lambda(p_i - p_j)x_j}), x_i] = O_{px}(\lambda e^{\lambda(p_i - p_j)x_j} x_j)$$

$$[O_{px}(e^{\lambda(p_i - p_j)x_j}), x_j] = O_{px}(-\lambda e^{\lambda(p_i - p_j)x_j} x_j)$$

(agrees w/ $[p_i - p_j, x_i + x_j] = 0$)

$$\Rightarrow -G_{\alpha,i} + \tilde{G}_{\alpha,i+1} = (T^s - 1)\tilde{G}_{\alpha,j+1} \qquad \tilde{G} = G - I$$

$$-G_{\alpha,j} + \tilde{G}_{\alpha,j+1} = (1 - T^s)\tilde{G}_{\alpha,j+1} \Rightarrow -T^{-s} G_{\alpha,j} + G_{\alpha,j+1} = \delta_{\alpha,j+1}$$

$$-G_{\alpha,i} - G_{\alpha,j} + \tilde{G}_{\alpha,i+1} + \tilde{G}_{\alpha,j+1} = 0 \Rightarrow -G_{\alpha,i} - G_{\alpha,j} + G_{\alpha,i+1} + G_{\alpha,j+1} = \delta_{\alpha,i+1} + \delta_{\alpha,j+1}$$

$$GB = S \qquad G = SB^{-1} = (BS^{-1})^{-1}$$