

$$P_m = \begin{cases} \frac{1}{m!} \left(\frac{\lambda}{\mu}\right)^m P_0, & 0 \leq m \leq c \\ \frac{1}{c^{m-c} c!} \left(\frac{\lambda}{\mu}\right)^m P_0, & c \leq m \leq K \end{cases}$$

$$\sum_{n=0}^K P_n = 1$$

$$\lambda_n = \begin{cases} \lambda, & 0 \leq n < K \\ 0, & n \geq K \end{cases}$$

$$\mu_n = \begin{cases} n\mu, & 1 \leq n \leq c \\ c\mu, & c \leq n \leq K \end{cases}$$

we find that:

$$\sum P_n = 1 \rightarrow \sum_{n=0}^{c-1} P_n + \sum_{n=c}^K P_n = 1$$

$$\sum_{n=0}^{c-1} \frac{1}{n!} \left(\frac{\lambda}{\mu}\right)^n P_0 + \sum_{n=c}^K \frac{1}{c^{n-c} c!} \left(\frac{\lambda}{\mu}\right)^n P_0 = 1$$

$$P_0 = \left[\sum_{n=0}^{c-1} \frac{1}{n!} \left(\frac{\lambda}{\mu}\right)^n + \sum_{n=c}^K \frac{1}{c^{n-c} c!} \left(\frac{\lambda}{\mu}\right)^n \right]^{-1}$$