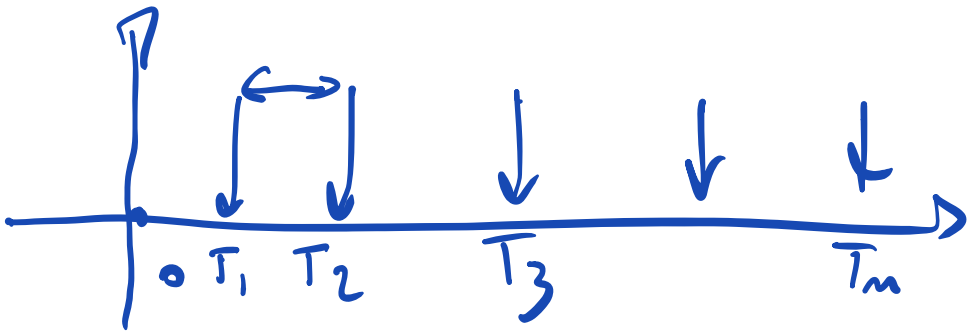
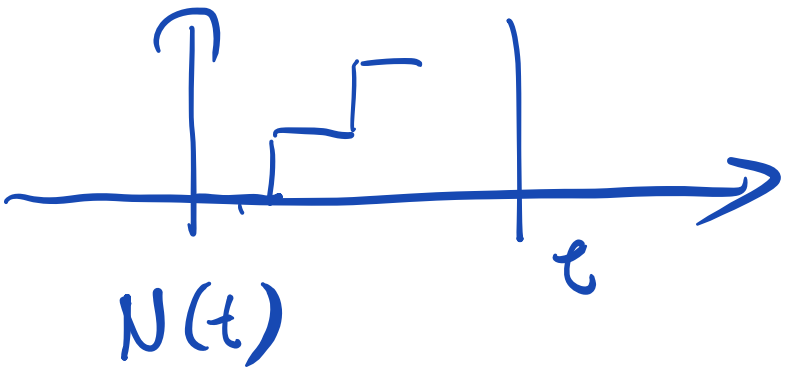
Poisson Process



$$T_n - T_{n-1} \sim \exp(\lambda)$$

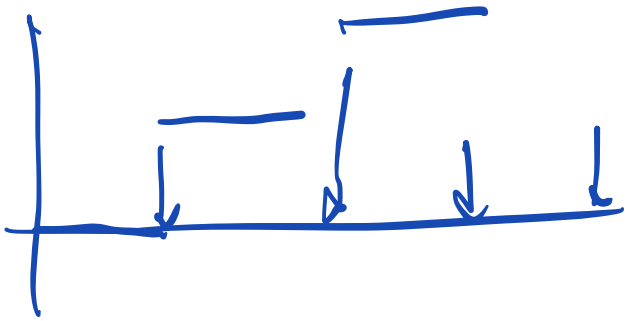
$X_n = T_n - T_{n-1}$ X_n are iid



$$N(t) = \sum_n \mathbb{1}_{\{T_n \le t\}}$$

$N(t)$

Points $[0,t)$



$N(\tau,t)$

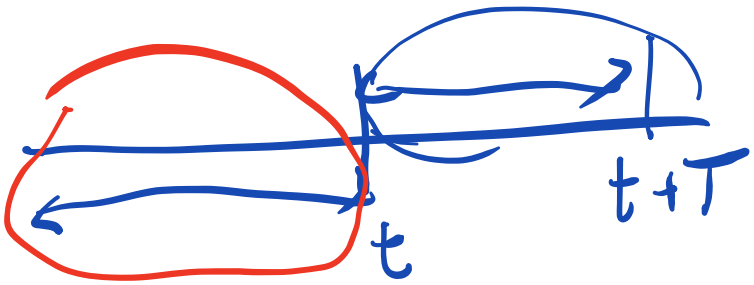
$[\tau,t)$

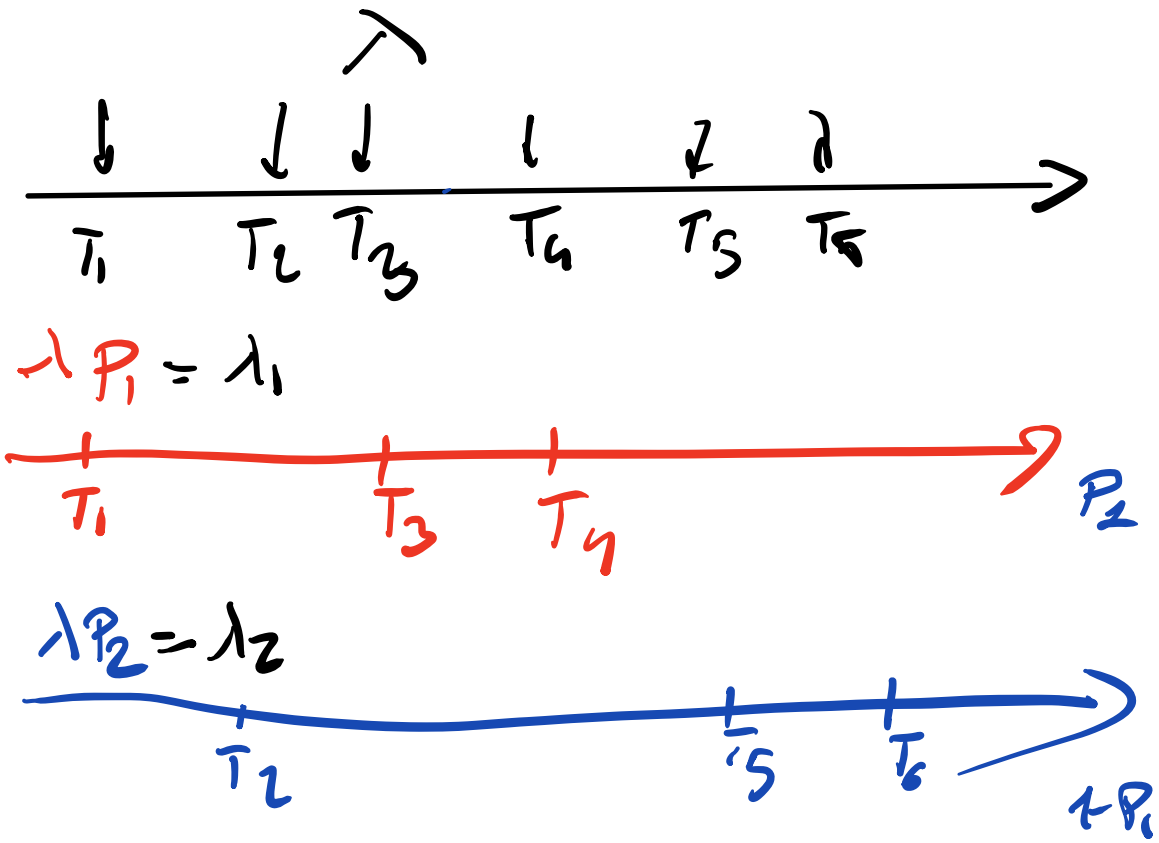
→ multiple events are negligible $t>\tau$

→ $N(\tau,t) \sim N(\tau+\theta, t+\theta)$ $\forall\theta$

→ $N(\tau,t)$ indep $N(\tau_1,t_1)$

as long as $[\tau,t)$ and $[\tau_1,t_1)$ do not overlap.




λ
T1
T2
T3
T4
T5
T6
λP1 = λ1
T1
T3
T4
P2
λP2 = λ2
T2
T5
T6
λP1