

Base rate of accidents λ_0
 Current rate of accidents λ_{A_t}
 Rain causes accidents.

$$\lambda_{A_t} = \lambda_0 + R$$

But what's R? It could be:

- 1) $R = c * [\text{inches of rain in last } H \text{ hours}]$, free parameter c
- 2)

$$R = \sum_{i=0} c e^{-(t-i)}$$

where i is the time of the ith raindrop, and t is the current time. Each raindrop increases the likelihood of an accident and decays with time. Free parameter c

- 3)

$$R = c * d\lambda_r/dt$$

where λ_r is the current rate of rainfall

- 4) ?
- 5) A linear combination of any of the above