

Poisson

Count independent events over equal time intervals. \rightarrow therefore we have a series of integers. What is the approximate probability the sample mean exceeds the sample median? Intervals have to have enough observations and there need to be enough time intervals.

If the mean is between 0 and $\ln(2) = 0.693$, the probability of seeing 0 events is lower than $\frac{1}{2} \rightarrow$ median is 0 and less than the mean.

If the mean $\ln(2)$ and 1, the median is 1 and greater than the mean. For mean between n and $n+1$, boundary approaches $n + \frac{2}{3} \approx 70\%$

note: $\lambda - \text{Log}(2) \leq \text{median} < \lambda + \frac{1}{3}$