2. QKD–2: Attenuated laser

Use Poisson distribution

$$p(k) = \left(\frac{\langle N \rangle^k}{k!} \right) e^{-\langle N \rangle}$$

you may approximate the exponential function using taylor expansion

$$N_{photon} = \langle N \rangle \cdot f \cdot t$$

$$E = \hbar \omega$$

3. Cavity-based quantum memory

Slide 11 from the lecture on May 31st

$$T_{CAVITY} = L/c$$

$$\eta = T^K$$

4. Hong-Ou-Mandel interference – 1

Hint: Use binomial expansion when expressing the output state in photon-number basis

$$(a+b)^n = \sum_{k=0}^{n} \binom{n}{k} a^k b^{n-k}$$