

**SCALABLE QUANTUM INFORMATION THROUGH PROBABILISTIC
PHOTON COUPLING**

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In this talk, I will show two methods to achieve scalable quantum computation in a network based on probabilistic photon connections. The first method is based on a combination of probabilistic photon connection with local deterministic gates, while the second one uses only probabilistic photon gates, while has a smaller but still polynomial scaling efficiency. Some applications of these methods in relevant experimental systems will be briefly mentioned.