

## سمینار هفتگی گروه اطلاعات کوانتومی

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# Quantum optical metrology: the lowdown on high- $N00N$ states

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### Abstract

Quantum states of light, such as squeezed states or entangled states, can be used to make measurements (metrology) with a precision that far exceeds what is possible classically, and also exceeds what was once thought to be possible quantum mechanically. Quantum optical metrology has received a boost in recent years with an influx of ideas from the rapidly evolving field of optical quantum information processing. Both areas of research exploit the creation and manipulation of quantum-entangled states of light. We will review some of the recent theoretical and experimental advances in this exciting new field of quantum optical metrology, focusing on examples that exploit a particular two-mode entangled photon state the High- $N00N$  state.

### References

- [1] J. P. Dowling, Cont. Phys. **49**, 125 (2008).