UNIVERSITÄT PADERBORN
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**Seminar**

# Measuring and Calculating Quantum States of Light: Two Suggestions


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**Time:** **14:00 – 16:00**
**Location:** **A1**


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## Abstract

# Measuring and Calculating Quantum States of Light
# Two Suggestions

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The effective measurement and accurate calculation of quantum states of light that can be generated by proposed nonlinear optical devices is central to research in quantum optics, and crucial for advances in quantum optical technology. Here we address two suggestions for improvements to existing practice. The first involves the use of "stimulated emission tomography," a proposal that allows for the use of purely classical measurements to do a kind of virtual tomography of quantum states that would be produced by a device if it were operated in the quantum regime. The second has to do with the calculation of quantum correlated photon states when more than one pair of photons may be involved, and relies on a Magnus expansion of the quantum evolution operator rather than more usual Dyson expansions. This seems to more readily recover time-ordering corrections to the biphoton wave function characterizing the entangled photons.