



The effect of temporal jitter on single photon indistinguishability

THESIS

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Abstract

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Chapter 1

Introduction

1.1 Context

1.2 Guide through the chapters

Chapter 2

Theory

- 2.1 Timing Jitter of an Electronic Signal**
- 2.2 Electro Optic Modulators**
- 2.3 Group Velocity Dispersion and Time Broadening effect on Optical Pulses**
- 2.4 Second Order Correlation function**
- 2.5 Single Photon Sources**
- 2.6 Hong Ou Mandel Interference**

Chapter 3

TCSPC Measurements on pulses from cascaded EoMs

3.1 Description of the experimental setup

3.2 Coincidence counts and normalization routine

3.3 Analysis of the resulting intensity correlation function

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Chapter 4

Ti:Sa Pulse Characterization

4.1 TCSPC and HBT measurement analysis

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4.2.1 SNSPD's Detector Response function not solvable

4.3 Troubleshooting : Practices to obtain a better set of measurements

Chapter 5

Single Photon Source Experiments

- 5.1 QD excitation with cascaded EoMs shaped light**
- 5.2 QD excitation using Ti:Sa light pulses**

Chapter 6

Conclusions and outlook