

# Frequency comb application for the coherent control of trapped ions



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Yet to be decided

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I would like to dedicate this thesis to my loving grandparents.

## **Acknowledgements**

And I would like to acknowledge ...

# Abstract

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## Introduction to Trapped Ion Quantum Information

1.1 Quantum computation requirements

1.2 Advantages of trapped Ion

# Chapter 2

## Trap ions

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2.2 Helical resonator

# Chapter 3

## Ytterbium Ion

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## Laser stabilization

### 4.1 PDH lock

### 4.2 Iodine setting lock

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## Frequency comb and Quantum control

- 5.1 Introduction of frequency comb
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## My Conclusions

Here I put my conclusions ...

# Appendix A: Picosecond Pulse Generation and Characterization

# Appendix B: Two-Level Ultrafast Rabi Oscillation



# Appendix C: Ultrafast Optical Bloch Equations

# References