Dynamics of the dissipative four-state system University of Hamburg

Yannic Joshua Banthien

April 2025

Abstract

Abstract goes here

Dedication

To mum and dad

Declaration

I declare that..

Acknowledgements

I want to thank...

Contents

1	Introduction	6
2	Chapter 2	7
3	Chapter 3	8
4	Chapter 4	9
5	Conclusion	10
Α	Appendix	11

1 Introduction

This thesis will discuss the dynamics of a quantum mechanical four-state system, which is coupled to a photonic mode in an optical cavity.

2 Chapter 2

The bath correlation function in this case takes the form

$$Q(t) = S(t) + iR(t) = \int_0^\infty \mathrm{d}\omega \frac{J(\omega)}{\omega^2} \coth \frac{\hbar\omega\beta}{2} \Big[(1 - \cos\omega t) + i\sin\omega t \Big] \psi$$

3 Chapter 3

4 Chapter 4

Conclusion

A Appendix