Universitatea din București
Facultatea de Fizică

Prenume NUME

TITLE OF THE THESIS

Master Thesis

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Contents

Introduction

Write a short introduction to your thesis after you finish writing. Describe briefly the contents of each chapter. An example is provided below from my thesis.

In chapter **??** we review the basic concepts from classical Hamiltonian dynamics which are useful to the characterisation of chaotic dynamics.

In chapter **??**, after a brief review of the principles of quantum mechanics, we discuss the nearest neighbour distributions and their relation to the non-integrability.

Chapter **??** is devoted to a detailed description of the numerical procedures and to the analysis method of the level distributions performed with the aid of a `Python` program.

Chapter **??** presents the main results of our investigations. We discuss …

In the last chapter, the main conclusions of our work are summarised.

Chapter 1

Example chapter

This is an example chapter.

1.1 Math and formulae

For inline math use $t_h i^s$ or $t_{hi} s$ —the recommended option is the first one–. Inline math should be used for short expressions or when referring to functions, $f(x)$ or variable names like x.

For unnumberd equations use

$$\mathcal{S} = \int_{t_0}^{t_1} \mathcal{L} \, \mathrm{d}t$$

and

$$\delta \mathcal{S} = 0.$$

For numbered equations use

$$i\hbar \frac{\mathrm{d}A_H(t)}{\mathrm{d}t} = [A_H(t), H]. \tag{1.1}$$

1.1.1 Details

If you use a label for something, like an equation, you can reffer to it later in text, see eq. (1.1). For more details regarding the Heisenberg picture of Quantum Mechanics, see [1, 2] and also the lecture notes [3, 4]. Equation (1.1) reminds us of Hamilton's equations

$$\dot{q}_k = [q_k, H], \qquad \dot{p}_k = [p_k, H].$$

An other important picture of Quantum Mechanics is the Schrödinger one. In this formulation the observables are time independent and the states are evolving in time. The time evolution is given by the well-known Schrödinger equation

$$i\hbar \frac{\partial}{\partial t} \left| \Psi \right\rangle = H \left| \Psi \right\rangle .$$

If you have a very long formula, you can split it like this

$$\begin{aligned}(1+x)^n = 1 + nx + \frac{n\left(n-1\right)}{2!}x^2 \\ + \frac{n\left(n-1\right)\left(n-2\right)}{3!}x^3 \\ + \frac{n\left(n-1\right)\left(n-2\right)\left(n-3\right)}{4!}x^4 \\ + \dots\end{aligned} \tag{1.2}$$

Definitions and theorems

Definition (Joint probability)**.** Given two events A and B, their joint probability, $P(A \cap B)$, is the probability of the two events to occur simultaneously.

Theorem (Pythagorean theorem)**.** *This is a theorem about right triangles and can be summarised in the next equation*

$$x^2 + y^2 = z^2$$

1.2 Tables

Table 1.1: Angular momentum

Type	Commutation relations	Eigenvalues	
General	$[J_i, J_j] = i\hbar\varepsilon_{ijk}J_k$	$\vec{J}^2 \left|jm\right\rangle = j(j+1)\hbar^2 \left|jm\right\rangle$	$J_z \left|jm\right\rangle = m\hbar \left|jm\right\rangle$
Orbital	$[L_i, L_j] = i\hbar\varepsilon_{ijk}L_k$	$\vec{L}^2 \left|lm\right\rangle = l(l+1)\hbar^2 \left|lm\right\rangle$	$L_z \left|lm\right\rangle = m\hbar \left|lm\right\rangle$
Spin	$[S_i, S_j] = i\hbar\varepsilon_{ijk}S_k$	$\vec{S}^2 \left|sm\right\rangle = s(s+1)\hbar^2 \left|sm\right\rangle$	$S_z \left|sm\right\rangle = m\hbar \left|sm\right\rangle$

1.3 Figures

Figure 1.1 shows a simple figure. Two figures side by side in fig. 1.2.

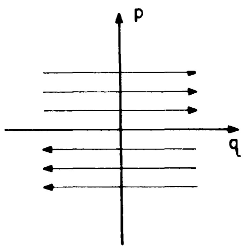
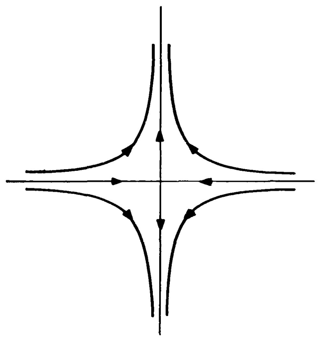
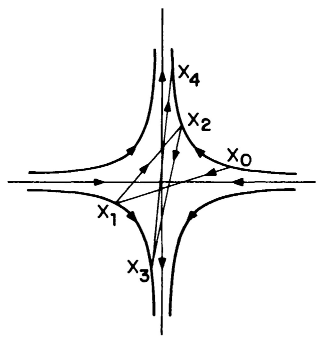


Figure 1.1: Parabolic fixed point



(a) Hyperbolic fixed point



(b) Hyperbolic-with-reflection fixed point

Figure 1.2

Chapter 2

Conclusions

In this thesis we have studied ...

Write conclusions here.

Bibliography

[1] Paul Adrien Maurice Dirac. *The Principles of Quantum Mechanics 4th ed (The International Series of Monographs on Physics no 27)*. Oxford: Clarendon Press, 1967.

[2] J.J. Sakurai and J. Napolitano. *Modern Quantum Mechanics*. Addison-Wesley, 2011. ISBN: 9780805382914.

[3] Virgil Băran. *Quantum Mechanics - Lecture notes*. 2016.

[4] Roxana Zus. *Quantum Mechanics - Exercises*. 2016.