Notes from the course on:

COURSE

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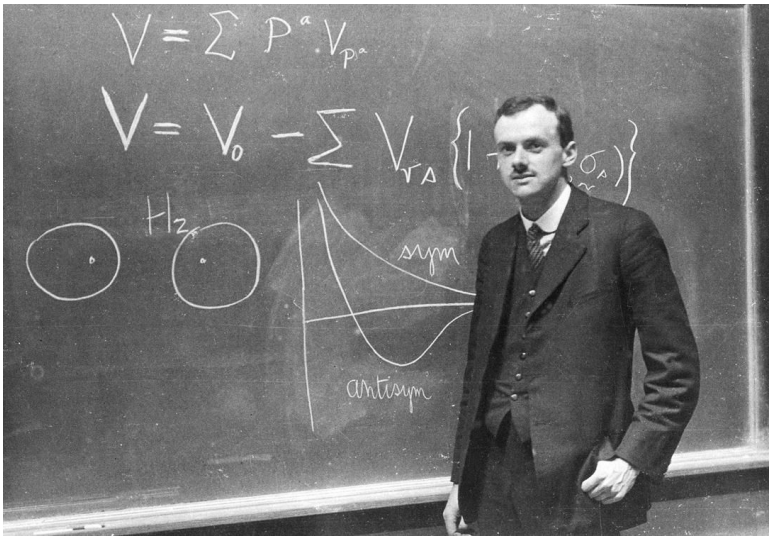

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It is more important to have
beauty in one's equations than
to have them fit experiment.

P. A. M. Dirac

Preface

In this document I aim to collect my notes based on the material from the course "**COURSE**", taught by Prof. — and attended at the *University of Turin* in the academic year —. I also include references to various books (more or less useful depending on the desired level of depth). These notes are a rewritten version of the notes I took during the lectures, so the main source is the material presented by the professor. However, textbooks are essential for a full understanding of the topics. During the course, several books were recommended (listed in the Bibliography), and I will try to indicate the corresponding references at the beginning of each chapter.

The course should be regarded as the first part of a broader programme on QFT. For this reason, it stops at a certain point, and the remaining fundamental topics are covered in the course "Foundations of Quantum Field Theory".

These notes should clearly be understood as personal, neatly rewritten lecture notes. Any oversights, mistakes, or inaccuracies are due to my own limitations. Moreover, I wrote these notes mainly to "explain" the subject to myself, so some sections may appear overly detailed or, conversely, too superficial depending on the reader. In any case, I hope they may still be useful to someone. I also hope that I have managed to produce a clear and well-structured document.

Sometimes I may not explicitly reference a particular textbook or past course; in such cases, I am referring to my own notes on that topic. A collection of my notes is available on my personal GitHub page: gCembalo.github.io.

Any error or typo can be reported to my personal email:
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Chapter 1

Introduction

Bibliography

[1] John Iliopoulos and Theodore N. Tomaras. *Elementary Particle Physics*. Oxford University Press, 2021.