Physics PhD Thesis Template

Subtitle

By

AUTHORS NAME

School of Physics
UNIVERSITY OF BRISTOL

A thesis submitted to the University of Bristol in accordance with the requirements of the degree of DOCTOR IN PHILOSOPHY in the Faculty of Science.

FEBRUARY 7, 2025

Word count: ten thousand and four

Abstract

Here goes the abstract ...

Dedication and acknowledgements

Here goes the dedication...

AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's Regulations and Code of Practice for Research Degree Programmes and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

SIGNED: ..... DATE: .....

TABLE OF CONTENTS

List of Tables

Table **Page**

List of Figures

Figure **Page**

CHAPTER 1

INTRODUCTION

Begins a chapter. Example: When the beloved cellist (Christopher Walken - outstanding) of a world-renowned string quartet receives a life-changing diagnosis, the group's future suddenly hangs in the balance: suppressed emotions, competing egos and uncontrollable passions threaten to derail years of friendship and collaboration. Featuring a brilliant ensemble cast (including Philip Seymour Hoffman, Catherine Keener and Mark Ivanir as the three other quartet members), it is a fascinating look into the world of working musicians, and an elegant homage to chamber music and the cultural world of New York. The music, of course, is ravishing (the score is the work of regular David Lynch collaborator Angelo Badalamenti): A Late Quartet hits all the right notes.

1.1 Section

Begins a section.

1.1.1 Subsection

Begins a subsection.

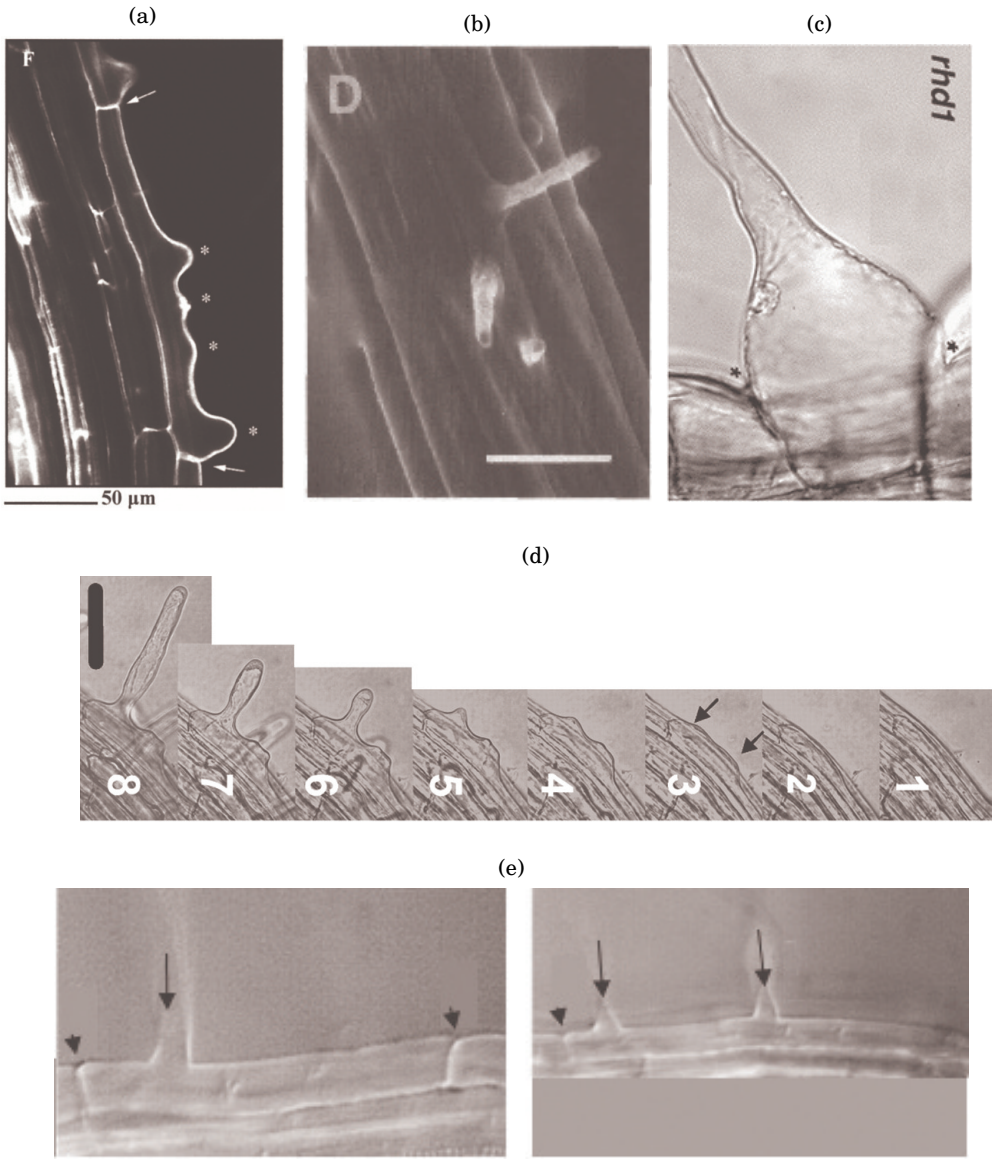

FIGURE 1.1. (a) A mutant RH cell. Asterisks show multiple sites of RH initiation in a single root hair cell (indicated by the arrows). Figure reproduced from [5]. (b) Hair-forming cell with three RH initiation locations. The bar represents $50\mu m$. Figure reproduced from [3]. (c) Large bump in mutant *rhd1*. Figure reproduced from [1]. (d) Mutant overexpressing gene *ROP2*; from right-hand to left-hand, numbers indicate progressive snapshots at different times. RH initiation sites are indicated by the arrows. The bar represents $75\mu m$. Figure reproduced from [2]. (e) Mutants affected by auxin. On the left-hand side, RH site is farther away from the apical end (left arrow cap); on the right-hand side, multiple RH locations (arrows). Figure reproduced from [4].

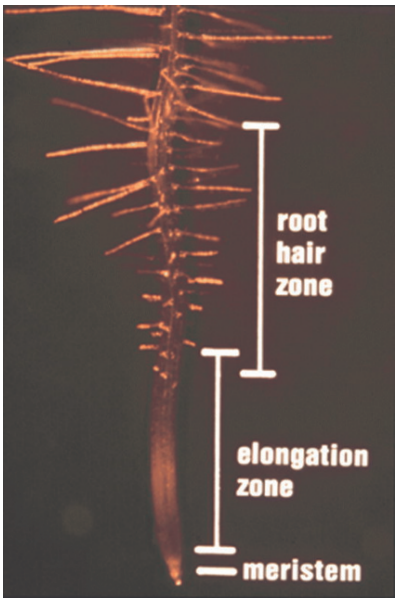

FIGURE 1.2. Developmental zones of an Arabidopsis root. Figure reproduced from [1].

Appendix A

Begins an appendix

BIBLIOGRAPHY

[1] C. GRIERSON AND J. SCHIEFELBEIN, *The Arabidopsis Book*, American Society of Plant Biologist, 2002.

[2] M. JONES AND N. SMIRNOFF, *Nuclear dynamics during the simultaneous and sustained tip growth of multiple root hairs arising from a single root epidermal cell*, J. of Exp. Bot., 57 (2006), pp. 4269–4275.

[3] J. D. MASUCCI AND J. W. SCHIEFELBEIN, *The rhd6 mutation of arabidopsis thaliana alters root-hair initiation trhough an auxin- and ethylene-associated process*, Plant. Physiol., 106 (1994), pp. 1335–1346.

[4] R. PAYNE AND C. GRIERSON, *A theoretical model for rop localisation by auxin in arabidopsis root hair cells*, PLoS ONE, 4 (2009), p. e8337. doi:10.1371/journal.pone.0008337.

[5] S. RIGAS, G. DEBROSSES, K. HARALAMPIDIS, F. VICENTE-ANGULO, K. A. FELDMAN, A. GRABOV, L. DOLAN, AND P. HATZPOULOS, *Trh1 encondes a potassium transporter required for tip growth in arabidopsis root hairs*, The Plant Cell, 13 (2001), pp. 139–151.