

Albert Einstein

Eine neue Bestimmung der Moleküldimensionen

Diss. ETH No. ?

ALBERT EINSTEIN

EINE NEUE BESTIMMUNG DER
MOLEKÜLDIMENSIONEN

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EINE NEUE BESTIMMUNG DER
MOLEKÜLDIMENSIONEN

A dissertation submitted to attain the degree of

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(Dr. sc. ETH Zurich)

presented by

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To Mileva

ABSTRACT

English abstract here.

ZUSAMMENFASSUNG

Deutsche Zusammenfassung hier.

ACKNOWLEDGEMENTS

I would like to thank . . .

CONTENTS

1	INTRODUCTION	1
2	A CHAPTER	3
3	SUMMARY	5
A	APPENDIX	7
	BIBLIOGRAPHY	9

NOTATION

FREQUENTLY USED SYMBOLS

E energy

m rest mass

p impulse

PHYSICAL CONSTANTS

c speed of light in vacuum, $c = 299\,792\,458\,\text{m s}^{-1}$

(CODATA 2014 [1])

INTRODUCTION

*Sapere aude! Habe Mut, dich deines eigenen
Verstandes zu bedienen!*

— Immanuel Kant

Die ältesten Bestimmungen der wahren Grösse der Moleküle hat die kinetische Theorie der Gase ermöglicht, während die an Flüssigkeiten beobachteten physikalischen Phänomene bis jetzt zur Bestimmung der Molekülgrössen nicht gedient haben. . . .

A CHAPTER

The true logic of this world is in the calculus of probabilities.

— James C. Maxwell

Maxwell [2] derived some very useful equations for electromagnetic fields:

$$\nabla \cdot \vec{D} = \rho \quad (2.1)$$

$$\nabla \cdot \vec{B} = 0 \quad (2.2)$$

$$\nabla \times \vec{E} = -\frac{\partial \vec{B}}{\partial t} \quad (2.3)$$

$$\nabla \times \vec{H} = \vec{j} + \frac{\partial \vec{D}}{\partial t} \quad (2.4)$$

The energy–momentum relation, eq. (2.5), is one of *my* important results:

$$E^2 = m^2 c^4 + (pc)^2 \quad (2.5)$$

Write units like this: 5 μm .

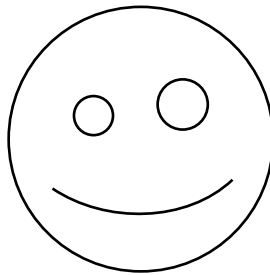


FIGURE 2.1: A lovely face.

3

SUMMARY

I dream my painting and I paint my dream.

— Vincent van Gogh

Summary here.



APPENDIX

Here be dragons.

BIBLIOGRAPHY

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2. Maxwell, J. C. A Dynamical Theory of the Electromagnetic Field. *Philosophical Transactions of the Royal Society of London* **155**, 459 (1865).

CURRICULUM VITAE

PERSONAL DATA

Name	Albert Einstein
Date of Birth	March 14, 1879
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Citizen of	Switzerland

EDUCATION

1896 – 1900	Eidgenössisches Polytechnikum, Zürich, Switzerland <i>Final degree:</i> Diploma
1895 – 1896	Aargauische Kantonsschule (grammar school) Aarau, Switzerland <i>Final degree:</i> Matura (university entrance diploma)
– July 1894	Luitpold-Gymnasium (grammar school) Munich, Germany

EMPLOYMENT

June 1902 –	Technical Expert, III Class <i>Federal Office for Intellectual Property,</i> Bern, Switzerland
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PUBLICATIONS

Articles in peer-reviewed journals:

1. Einstein, A. Über die von der molekularkinetischen Theorie der Wärme geforderte Bewegung von in ruhenden Flüssigkeiten suspendierten Teilchen. *Annalen der Physik* **322**, 549 (1905).
2. Einstein, A. Zur Elektrodynamik bewegter Körper. *Annalen der Physik* **322**, 891 (1905).

Conference contributions:

3. Einstein, A. *Implications of a fixed vacuum speed of light in Relativity* Oct. 2–6, 1905 (1st Conference on Special Relativity, Zurich, Switzerland).