The PHYSICAL CONSTANTS

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Contents

Preface

Since venturing into this mathematical field, I was struck by the apparent confusion in all physical constants and their units. Life would be so much easier if we could *cross-calculate* between the physical properties and scientific fields.

Properties such as permittivity, magnetic constant, electricity, etc. are far too obscure. Planck's universal energy constant (h) actually has incorrect units. The magnetic field constant (B) is the reciprocal of the relative charge capacity (RC) and should therefore be redundant. Heat capacity coefficients exist but there are no such coefficients for charge. Etc.

It never occurred to me that a satisfactory resolution was possible until I began my work on Newton's laws of orbital motion as they apply to the atom. Just as it never occurred to me that everything in nature is simply electrical and magnetic charge and energy.

Throughout my life, every publication I have referred to offers approximate (and frequently incorrect) values for all constants. Some of the more overt publications actually apply '±' tolerances in brackets to show how clever they are! In fact, *genuine* constants should be absolute and inflexible just as is the case for all of the mathematical laws of natural science.

I have always believed that all physical constants must apply equally to everything in nature, encompassing all scientific fields. This view has now turned out to be true. There is indeed one simple solution.

The historical units can all be resolved accurately from only six primary values (four constants and two ratios), all of which are accurately known. We no longer need to qualify constants with '±'. It is for this reason that I have derived values for all such constants accurate to 15 significant figures, except where absolute accuracy requires less. I leave it up to you to round them off if preferred. Remember, approximations frequently lead to inaccuracy and faulty conclusions.

However, if we go back to basics, and reset the four basic constants (magnetic & electrical charge, time and distance) to unity at the neutronic condition, there are now only three constants, all of which are ratios, and every physical constant we know today can be accurately derived from just these three.

Chapter 2 of this book has therefore been divided into two parts (A & B) to differentiate between the values (and their units) as we understand them today and those based upon the neutron:

Part A: of Chapter 2 applies to everyday calculations.
It provides all the constants and their formulas based upon historical values and units that we've been taught in schools and universities; Coulomb, kilogram, metre and second. These values and their units were established by physicists and administrators that were not aware of the true nature of particle physics and therefore do not correspond to reality.

Part B: of Chapter 2 is exactly the same (in all respects) as Part A except for the formulas and values, which are here based upon the neutron. Its units are therefore; Coulomb, Gilbert, metre and second; the values of which are reset with the neutronic condition representing unity. This part of Chapter 2 has been provided for information only, but it constitutes the future; *actual reality*.

I do not claim that everything in this publication is true and exact, merely that it represents the best and most useable collection of natural constants compiled to date. Please let me know of any errors or omissions, and I shall update this publication accordingly.

Apart from my discovery of the nature of the neutron, this compilation of physical constants is the work of which I am most delighted, because, like the neutron, it is all mine and it will make my future work so much easier.

Keith Dixon-Roche 2018-2020

1 Introduction

The physical constants are the most important tool in the evaluation and description of natural laws. And the most important natural law is; 'everything in the universe is *energy*', which is currently described thus:

kinetic: $KE = \frac{1}{2}.m.v^2$

static (potential): $PE = m.a.R$ $(a = v^2/R)$

Where 'm' above represents what is currently referred to as mass, but is actually magnetic charge (refer to Chapter 3.2). However, I realise that this is a giant leap of faith for most of us to take along with all the other revelations described here, so I shall continue in this book to refer to 'm' as mass; but to me; 'm' will always represent magnetic charge.

Temperature is not an *actual* unit of measurement; it is a contrived property to define the kinetic energy of the electrons in an atom's innermost shell. This can be demonstrated by the replacement of the age-old method for calculating gas pressure; "$p.V = n.R_i.\underline{T}$" with an alternative calculation method using electron energy (refer to Chapter 3.4.3).

In fact, all physical properties can be established using the kinetic energy of electrons, you simply need to know how.

My values and units are based upon four primary constants (mass [magnetic charge], electrical charge, distance and time), two primary ratios (static and dynamic) and an as-yet unresolved universal constant (refer to Chapter 3.5.1).

None of this work would have been possible without the discovery of the neutronic radius (R_n), which is the primary unit of distance. When united with the neutronic period (t_n), mass (m - magnetic charge) and electrical charge (e), these constants and their formulas provide us with all we need to accurately calculate all physical constants and variables.

All properties can be established simply by looking at the units you need and multiplying or dividing the constant appropriate value for each.

The level of accuracy established for the primary constants has permitted the mathematical prediction of all physical properties with absolute accuracy and reliability; there is no need for '±' tolerances.

Chapter 2; Parts A & B

References within Chapter 2 apply only to the part concerned.
For example;
A reference to Table 2.7 in Part A applies only to that Table in Part A,
Or;
A reference to Table 2.7 in Part B applies only to that Table in Part B.

Part A:

This part of the chapter contains the constants that are based upon the primary values that were established historically, and that we recognise today:
Mass (m) based upon the mass of an electron:
m_e = 9.1093897E-31 kg
Electrical charge (e) based upon the elementary charge unit:
e = 1.60217648753E-19 C
Distance (d) based upon the neutronic radius:
d = 2.81793795383896E-15 m
Time (t) based upon the neutronic period:
t = 5.90596121302193E-23 s

Part B:

This part of the chapter is based upon the same primary values (as above) but reset to unity at the neutronic condition:
Magnetic charge (m) is set as the magnetic charge of an electron (the Gilbert has been selected for its unit of measurement):
m = 1 G
Electrical charge (e) based upon the elementary charge unit:
e = 1 C
Distance (d) based upon the neutronic radius:
d = 1 m
Time (t) based upon the neutronic period:
t = 1 s
To clarify: the *names* of the units of measurement for Coulomb, metre and second have been retained but their values have been reset to unity at the neutronic condition; e.g.;
1 metre in part B = 2.81793795383896E-15 metres in Part A.