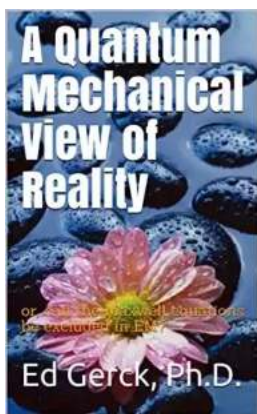


# Can the Maxwell Equations Be Excluded in Electromagnetism?

Electromagnetism is a fundamental aspect of physics that governs the behavior of electric and magnetic fields. At the core of this field lies the Maxwell Equations, a set of four interrelated equations that describe how these fields interact with charges and currents.

The Maxwell Equations, formulated by Scottish physicist James Clerk Maxwell in the 19th century, revolutionized our understanding of electromagnetism. These equations united the laws of electricity and magnetism and predicted the existence of electromagnetic waves, eventually leading to the development of modern technologies such as radio, television, and wireless communication.

However, some scientists and theorists have posed the question: Can the Maxwell Equations be excluded in electromagnetism? This controversial idea challenges the very foundation of our understanding of electromagnetism and opens up new possibilities for theoretical advancements.



## A Quantum Mechanical View of Reality: or, can the Maxwell equations be excluded in EM?

by Ed Gerck(Kindle Edition)

★★★★★ 5 out of 5

Language	: English
File size	: 1734 KB
Text-to-Speech	: Enabled
Screen Reader	: Supported
Enhanced typesetting	: Enabled
X-Ray	: Enabled
Lending	: Enabled
Print length	: 28 pages



## The Argument Against Maxwell Equations

Those who argue for the exclusion of the Maxwell Equations argue that these equations are not the ultimate description of electromagnetism. They claim that there might be deeper underlying principles and mechanisms yet to be discovered that can better explain electromagnetic phenomena.

The proponents of this viewpoint believe that the Maxwell Equations might be mere approximations, valid only under certain conditions. They propose alternative theories such as quantum electrodynamics or string theory, which aim to provide a more comprehensive and accurate description of electromagnetism.

Additionally, the exclusion of the Maxwell Equations could potentially lead to the development of new theoretical frameworks that unite electromagnetism with other fundamental forces such as gravity. This would bring us closer to a theory of everything, a unified theory that encompasses all the fundamental forces of nature.

## The Counterarguments

On the other side of the debate, many scientists argue that the Maxwell Equations cannot be excluded in electromagnetism. These equations have withstood rigorous testing and experimentation over the years, consistently providing accurate predictions and explanations for a wide range of electromagnetic phenomena.

The Maxwell Equations have been successfully used in various applications, from electrical engineering to the design of advanced electronic devices. They form the

basis of our current technological advancements and are widely regarded as one of the most successful scientific theories ever formulated.

Moreover, the Maxwell Equations have been mathematically proven to be self-consistent. They are deeply intertwined and provide a comprehensive framework for understanding the behavior of electromagnetic fields. Excluding these equations would require proposing alternative theories that can replicate their predictive power and mathematical elegance.

## **The Future of Electromagnetism**

The question of whether the Maxwell Equations can be excluded in electromagnetism remains an open and active area of research. Scientists and theorists continue to explore alternative theories and examine the limitations and assumptions of the current mathematical framework.

While some may argue for their exclusion, it seems unlikely that the Maxwell Equations will be completely discarded in the near future. The scientific community acknowledges their robustness and the significant role they have played in advancing our understanding of electromagnetism.

However, this debate serves as a reminder that scientific theories are always open to scrutiny and revision. As our knowledge and technologies evolve, we may discover new principles and equations that better explain the complexities of electromagnetism, further enriching our understanding of the universe.

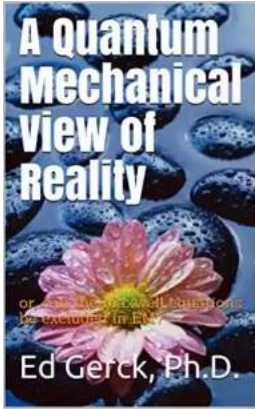
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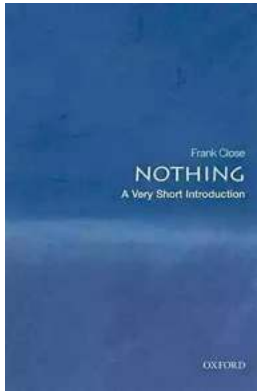
By requiring variations in all directions to equal zero (the variational principle), one can obtain the Euler-Lagrange equation both in SR and in the Schroedinger equation regime (non-SR QM) -- as well-known -- leading to RQM (SR + QM), and QFT as well-known.

This extends, not contradicts,  $F = ma$ , Newton's law, and also obeys the Euler-Lagrange equation, going beyond Newton.

Thus, EM and GR will logically have to be extended too, to follow QM and also the Euler-Lagrange equation, going beyond Newton

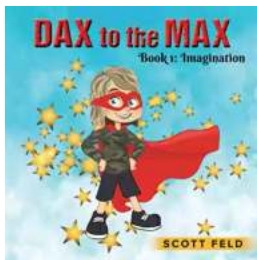
Therefore, the Euler-Lagrange equation is so comprehensive, in small and large scales, that is likely to explain whatever we find at any scale, including dark matter, dark energy, and gravity.

The mathematical version is published in a separate (see [14]). This is a more textual version available, publicly, from lectures and student experience. This book, going beyond the epsilons and deltas of Newtonian continuity, fits a graduate students' gap in physics, the Nature-defined channel, which cannot be conveyed mathematically, entirely, thus creating a more complete picture.



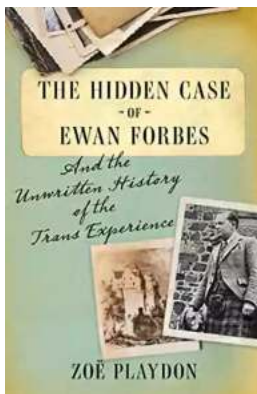
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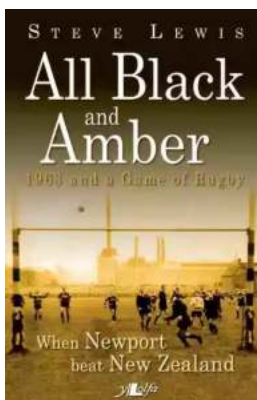
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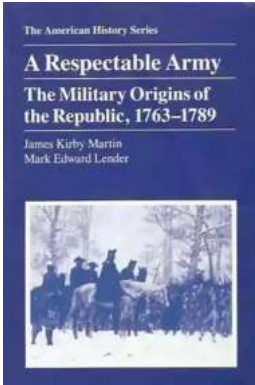
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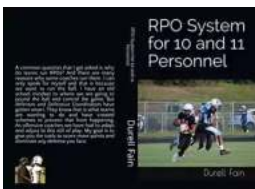
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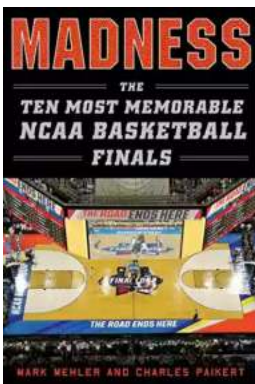
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