Norbert Schwarzer

The World Formula

A Late Recognition of David Hilbert's Stroke of Genius

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The World Formula: A Late Recognition of David Hilbert's Stroke of Genius

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Dedication

To the victims of ignorant politicians.
We will not forget. We will not forgive.

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Repetition

Use

Acknowledgment

Thank you, reader, for your interest in my work!

About the Book

No, David Hilbert's work "on the fundaments of physics" [$\alpha \leftrightarrow \omega$] is not unknown. This is—by no means—what we meant to say when stating in the title of this book that here we intend to give a fairly "late recognition" to his work. In fact, there was a lot recognition over the past decades already. But the true meaning of Hilbert's work, and thus his true stroke of genius, obviously was not discovered yet. It seems that Hilbert had already written down the world formula over 100 years ago.

Even though this author still considers the book a draft, we think that it is time to bring it out, simply because we want to have some basis for discussion.

After a brief motivation, thereby reprinting one of the stories which actually brought this author to start working on this book in the first place, we will derive a, or rather write down, the world formula. If truth be told, this apparently huge task isn't much more than representing the Einstein–Hilbert action [$\alpha \leftrightarrow \omega$], which already contained it all. We only needed to dig a little bit deeper than Einstein and Hilbert had done.

Then, directly from the Einstein–Hilbert action we will extract the theory of relativity, quantum theory, thermodynamics (here meaning the second law of thermodynamics), the principle forces of evolution, interaction, and more.

Surprisingly, in connection with evolution, it is thereby found that the second law of thermodynamics fundamentally hides the basic driving forces of evolution, which means evolution comes with the second law of thermodynamics and the second law comes with evolution. That is not an option for the two, but a must.

Or still shorter: "Life and death belong together and are coded in only one metric term."

Taking the old wisdom of many ancient natural religions, this actually is not very new, though, but still it appears to be a nice finding if one sees it in an equation coming out from something as fundamental as the Einstein–Hilbert action.

Finally, we will consider a variety of potential applications, show how to derive the classical quantum equations from Hilbert's formula, and present a list of project ideas using a world formula approach.

Reference

[$\alpha \leftrightarrow \omega$] D. Hilbert, Die Grundlagen der Physik, Teil 1, *Göttinger Nachrichten*, 1915, 395–407.

Surely the reader had come across situations where he would have given his life to get the "final answer", the reason for our existence, a Theory of Everything, a true World Formula that contains it all… So did the author of this book. There was this deep-seated and forever unquenchable thirst for fundamental explanations on the one hand, and then there was this very special motivation from somebody else who needed this knowledge, on the other: "How to explain the world to my dying child?" Perhaps this provided the driving force to actually start this million-mile-long journey with the first small—and very tentative—step.

Considering all the efforts taken, money spent, disputes fought, papers and books written, and conferences held, it is almost shocking to find that, in principle, the World Formula was already there. It was David Hilbert who wrote it down during World War I in November 1915. The complexity of the math involved was not the only thing that obscured what should have been obvious. This book explains why apparently only very few people had realized his immortal stroke of genius.

The only thing Norbert Schwarzer considers important enough to be known about him is that he does not consider himself important. Dr. Schwarzer has published a variety of papers, mainly in the fields of basic research and application of contact mechanical approaches for laminates, composites, and layered materials. Because of the need for better stability prediction and socioeconomic models, he started to apply concepts from theoretical physics in more down-to-earth fields such as materials science, school transport, and sales market analysis. Some of this work has finally led to ideas for the improvement of the original theoretical concepts.

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