



Eduardo V. Flores

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Education:

BS (Physics), NYU Polytechnic Institute
PhD (Theoretical Physics), University of Michigan

Research Expertise:

Elementary Particle Physics | Foundations of Quantum Physics

I study the paradoxes of quantum physics, a theoretical problem. Quantum physics numerical predictions are outstanding at all the available energy levels. However, the same is not true about the interpretation of quantum physics. Standard quantum theory contains a paradox known as the wave-particle duality paradox, that is, how the same object could sometimes be extended as to produce wave motion yet when detected it is a dot on a screen. This paradox might be symptomatic of a theory with intrinsic problems or a theory with an incorrect interpretation of its results. The mathematical success of quantum mechanics points to a problem with the interpretation of the theory. My present research is a quest to resolve the wave-particle duality paradox. The importance of finding a model that would explain this paradox is to open a new frontier in our understanding of the microscopic world. Another reason for my interest is its connection with quantum gravity. Quantum gravity is the major problem in theoretical particle physics. In my work I am proposing that the solution to the quantum gravity problem is linked to the solution of the wave-particle duality paradox.

Recent Publications:

Flores E (2010) Ether, the theory of relativity and quantum mechanics, Space, Time and Spacetime, Physical and Philosophical Implications of Minkowski's Unification of Space and Time, (V Petkov, Ed.) XII Springer.

Flores EV, De Tata JM (2010) Complementarity Paradox Solved: Surprising Consequences. Foundations of Physics, 40:1731-1743.

Buonpastore R, Flores E, Knoesel E (2010) Diffraction of Coherent Light with Sinusoidal Amplitude by a Thin-Slit Grid. Optics 121:1009-1012.