# Report on the Evaluation of Chapter 41 Retrospect: Classical Electron Radius in "The Grand Unified Theory of Classical Physics" by Dr. Randell L. Mills

Prepared by

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June 26, 2021

## Executive Summary

In my analysis, I verified calculations and equations involving the radius of the electron and Fourier transforms found in Chapter 41 of the book “The Grand Unified Theory of Classical Physics” (January 2020 edition) by Dr. Randell L. Mills. There is a remarkable agreement between the equations found in the chapter and the equations I get from my calculations. I verified that all the equations found in the chapter from 41.1 through 41.12 were in fact true.

## Purpose

Electron scattering experiments support the nature of bound electrons as atomic orbitals of the classical GUTCP model, and the data is inconsistent with the probabilistic point-particle model of the quantum mechanics of Schrödinger and Born. The radius of the electron according to quantum mechanics is zero. But the GUTCP minimum classical electron radius is given by the Compton wavelength bar. Putting r=0 into the magnetic energy equation gives its energy as infinity, in violation of the well-known Special Relativity result of $mc^2$.

The equation for radiation scattering of the electron is found here in Chapter 41. In GUTCP, the Fourier transform of the atomic orbital is zero, and so does not radiate, in agreement with observation. In contrast, the electron described by a Schrödinger one-electron wave function radiates, in contradiction to observation (see Chapter 40). Many experimental results (scattering of electrons by helium atoms, the Davisson-Germer experiment, the electron g-factor, the Lamb shift, etc.) all verify that the electron is in an atomic orbital with the GUTCP calculated radius. In contrast, quantum mechanics based on Born and Schrödinger has failings in each case just listed. Also, the Schrödinger solutions for the hydrogen-atom exclude the existence of energy levels below the ground state, whereas the GUTCP theory predicts levels below the ground state, which are known as hydrinos and are discussed earlier in the GUTCP book. Data given earlier in the GUTCP book proves that the Schrödinger-Born model is incorrect, since it is inconsistent with known experimental findings. The GUTCP two-dimensional function for a bound electron is shown to be the correct description of the electron, not the one-dimensional delta function model (with zero volume and infinite mass-density) of Schrödinger and Born. The GUTCP model of the electron is correct since there is such close agreement between it and the experimental observations and theoretical predictions.

## Calculations

I have verified that Equation 41.1 and its value are correct.

I have also verified that Equations 41.2 is correct.

I have shown that Equation 41.4's value is correct.

I have shown that Equations 41.5-41.6 are correct.

And I have verified that Equations 41.9-41.12 are correct.

## Conclusion

I was able to verify the results of Chapter 41 in excellent agreement with my own calculations and derivations of equations. I successfully reproduced all of the equations, derivations, and calculations found in Chapter 41.

I find my results and calculations to be confirmation that the derivations and equations of Chapter 41 are indeed valid, reproducible, and accurate.