Quantum Gravity and Superconductivity II

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In my first paper, Quantum Gravity and Superconductivity, I made two significant proposals. One, rather tongue in cheek, I proposed a method in which the extent to which an individual is deluded defines whether or not that individual is a crackpot. I termed this the Delusion Index. Two, I proposed the Painleve type III equation as the background for developing a quantum theory of magnetic induction and of gravity.

1 A Brief Review

The basic equation,in time plus one space dimensions, was given as;

$$\frac{d\mathbf{E}^{\dagger}}{dx} = \frac{d\mathbf{B}^{\dagger}}{dt} + \frac{d^2\mathbf{B}_{\gamma}^{\dagger}}{dx^2} + \epsilon\frac{d\mathbf{B}_{\gamma}^{\dagger}}{dx}$$

In the first paper I did not show from first principles how this develops into a full d+1 covariant theory. We wrote down the covariant theory as;

$$\partial\!\!\!/\mathbf{G}_{\mu}^{\dagger} = \partial\!\!\!/\mathbf{B}_{\mu}^{\dagger} + \frac{\partial\!\!\!/^2\mathbf{B}_{\mu}^{\dagger}\gamma_{\mu}}{n+2m} + \epsilon_{\mu}\partial\!\!\!/\mathbf{B}_{\mu}^{\dagger}\gamma_{\mu}$$

in the conjugate case. I have no intention, at the moment, of showing precisely how we derive the full 4 dimensional theory from first principles simply because it is time consuming. Except to say that this works.

2 The Beginning Of A New Chapter In Physics.

I suggested that the theory is in some sense quantized in a manner that evokes the Dirac quantisation condition as

$$\frac{n}{2}\partial\!\!\!/\mathbf{G}_{\mu} = \frac{n}{2}\partial\!\!\!/\mathbf{B}_{\mu} + \frac{\partial\!\!\!/^2\mathbf{B}_{\mu}\gamma_{\mu}}{2+\frac{4m}{n}} + \frac{n}{2}\epsilon_{\mu}\partial\!\!\!/\mathbf{B}_{\mu}\gamma_{\mu}$$

without the need for magnetic monopoles. The quantisation condition that we have discovered here arises completely as a consequence of the interaction between the magnetic field and the background Painléve type III spacetime.

3 The Einstein Tensor

Gravity is quantized, in a sense, in a similar manner to electromagnetism. We write the equation;

$$\not{\partial}\mathbf{M}_w^{\dagger} = \not{\partial}\mathbf{T}_{\triangle} + \frac{\not{\partial}^2\mathbf{T}_{\triangle}\mathbf{v}_{\mu}}{n+2m} + \hat{v}_{\mu}\not{\partial}\mathbf{T}_{\triangle}\mathbf{v}_{\mu}$$

where $\mathbf{T}_{\triangle}$ is a 4x4 energy-momentum tensor that is equivalent to the Einstein energy-momentum tensor in D = d+1 spacetime. In case the reader is wondering, yes, we use the Dirac operator on the energy-momentum tensor where we multiply each element of the tensor by a 2x2 matrix. The reason for this is that the equivalent tensor which we have written as $\mathbf{T}_{\triangle}$ has a non-commutative operator counterpart $\mathbf{T}_{\nabla}$ which interacts with the external environment via quantum fields.

4 Disclaimer

Dear reader, I would sincerely ask you to be patient with my claims. I have every intention of providing you with enough background information to form your own opinion on my theory/hypotheses.

5 Previous Analogues/References

Also see the online **M.I.T lectures on the Classical Model Of A Superconductor**, in particular the Two Fluid Model.

The PHD thesis by Mårten Sjöström on Hysteresis **Modelling Of High Temperature Superconductors** is also particularly useful.

The lectures by Terry P. Orlando (M.I.T, 2003) on superconductivity.

Also, The Conceptual Basis Of QFT by Gerard t'Hooft.

There is a lot of literature out there that the reader can use.

6 Special Reference

There is a paper by A.R. Hadjesfandiari, **Field Of The Magnetic Monopole** in which he discusses the Paul Dirac perspective on electromagnetic field strength tensor stated as;

$$\mathbf{F}_{\alpha\beta} = \partial_{\alpha}A_{\beta} - \partial_{\beta}A_{\alpha} + 4\pi\mathbf{G}_{\alpha\beta}$$

What we are doing here is in effect to write something similar, without the extra tensor, which we write down schematically as;

$$\mathbf{F}_{\alpha\beta} + \partial_{\beta}A_{\alpha} = G_{\alpha\beta}^{\dagger}$$

Or, a much clearer statement - clearer in terms of showing the not-so-evident stochastic behaviour

$$\mathbf{F}_{\alpha\beta} = \frac{\partial_\beta^2 A_\alpha \gamma_\alpha}{n + 2m} - \lambda_\beta \partial_\beta A_\alpha \gamma_\alpha$$

where $\mathbf{F}_{\alpha\beta}$ is the usual Maxwell tensor, as are the derivatives the usual terms. However, we introduce new terms λ_β, $G^\dagger_{\alpha\beta}$ and γ_α which we will make clear in following work. Here is my email: petercchindove@msn.com. Scant reward for reading this far.