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:

\[ \frac{dE^\dagger}{dx} = \frac{dB^\dagger}{dt} + \frac{d^2B^\dagger}{dx^2} + \epsilon \frac{dB^\dagger}{dx} \]

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:

\[ \frac{\partial G^\dagger_\mu}{\partial B^\dagger_\mu} = \frac{\partial B^\dagger_\mu}{\partial B^\dagger_\mu} + \frac{\partial B^\dagger_\mu \gamma_\mu}{n + 2m} + \epsilon \frac{B^\dagger_\mu \gamma_\mu}{n} \]

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

\[ \frac{n}{2} \phi G_\mu = \frac{n}{2} \phi B_\mu + \frac{\phi^2 B_\mu \gamma_\mu}{n + 2m} + \frac{n}{2} \epsilon \phi B_\mu \gamma_\mu \]

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 Painlevé type III spacetime.
3 The Einstein Tensor

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

$$\mathcal{P}_w = \mathcal{P}_T + \mathcal{T}^\Delta v_{\mu} + \mathcal{T}_{\mu}$$

where $T_\Delta$ 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 $T_\Delta$ has a non-commutative operator counterpart $T_\nabla$ 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;

$$F_{\alpha\beta} = \partial_\alpha A_\beta - \partial_\beta A_\alpha + 4\pi G_{\alpha\beta}$$

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

$$F_{\alpha\beta} + \partial_\beta A_\alpha = G^I_{\alpha\beta}$$
Or, a much clearer statement - clearer in terms of showing the not-so-evident stochastic behaviour

\[ F_{\alpha\beta} = \frac{\partial^2 A_{\alpha\gamma\alpha}}{n + 2m} - \lambda_{\beta} \partial_\beta A_{\alpha\gamma\alpha} \]

where \( F_{\alpha\beta} \) is the usual Maxwell tensor, as are the derivatives the usual terms. However, we introduce new terms \( \lambda_{\beta}, G_{\alpha\beta}^1 \) and \( \gamma_{\alpha} \) which we will make clear in following work. Here is my email: peterchindove@msn.com. Scant reward for reading this far.