

Problems and the Philosophy Inherent in Modern Physics

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Greetings,

It is interesting to note that as we approach the close of the twentieth century that the state of physics is, IMHO, much worse off than it was at the same point last century. No, I don't mean we don't know more, clearly we do. But the advances in knowledge appears superficial, based upon *"a reverse engineering"* approach rather than a first principles attempt at understanding underlying principles. Now what do I mean by this, here are some examples:

- What is inertia?
- How does QM integrate into GR?
- Why is the mass of an electron or proton the values they are?
- Why do we have to renormalize?
- Why do the quantum states we observe exist?
- Why do we even have quantum states?
- Why doesn't an electron orbit "decay" into the proton? Our basic EM theory says it should.
- What is the quantity we call temperature, and what are its fundamental units in terms of the basic properties of mass, length, time {MLT}?
- What is the quantity we call charge, and what are its fundamental units in terms of the basic properties of mass, length, time {MLT}?

• ... etc.

These are all difficult questions. But, the community simply shrugs and says "it just is" or "it doesn't matter", we get by just fine without such answers, but do we?

I think it is this attitude, which I designate as a "modernist" after (Neil Bohr), that has resulted in the growing unhappiness that is driving the younger set to question/re-examine /re-access the very basis of this philosophy (which it clearly is). It is, with a straight face, very difficult to deny that there is something very physical about the state that we have come to call "empty space". So whether we call it space-time, zero point energy (ZPE), quantum foam, strings/superstrings, loop space, or (a)ether, there is something that can manifest it presence (which in it most basic form is energy). So here are my questions:

- What's the hang-up with considering the possibility that such a medium in space is physically real?
- What are the consequences of if such a medium did exist?
- Could we begin to answer any of the above questions?
- If we could, while remaining within the observational science, is there something wrong with such an approach?

A nice discussion (not arguments) on these issues might prove useful.

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