R B Duncan Press

Scientific Letter

A Forum for Independent Voices

December, 2003 Edition

(R B Duncan Press homepage)

Quantum Theory vs General Relativity
by Daniel P. Fitzpatrick Jr.

(Reprinted with permission from a letter to Norm)

Many skeptics are correct in their assumption that our peer group - via their present methods - will not find a link between general relativity and quantum mechanics.

The reason is this:

Complementarity Principle

in physics, tenet that a complete knowledge of phenomena on atomic dimensions requires a description of both wave and particle properties. The principle was announced in 1928 by the Danish physicist Niels Bohr. Depending on the experimental arrangement, the behaviour of such phenomena as light and electrons is sometimes wavelike and sometimes particle-like; *i.e.*, such things have a wave-particle duality (*q.v.*). It is impossible to observe both the wave and particle aspects simultaneously. Together, however, they present a fuller description than either of the two taken alone. (see also *Index*: wave-particle duality)

In effect, the complementarity principle implies that phenomena on the atomic and subatomic scale are not strictly like large-scale particles or waves (*e.g.*, billiard balls and water waves). Such particle and wave characteristics in the same large-scale phenomenon are incompatible rather than complementary. Knowledge of a small-scale phenomenon, however, is essentially incomplete until both aspects are known.

There is an actual **REVERSAL** between the way things work in the microcosm and macrocosm - **Milo Wolff** recently proved this.

In the microcosm it works like this:

De Broglie waves around a closed loop, such as would be associated with electrons circling nuclei in atoms, can persist only if the undulations fit evenly around the loop; otherwise they cancel themselves out. This requirement causes the electrons in atoms to select only particular configurations, or states, among the many that would otherwise be available.

The response of the wave properties of a particle to an external force follows a basic law of quantum mechanics that, in its mathematical form, is known as the Schrödinger equation.

The de Broglie wavelength formula gets reversed. - This even troubled de Broglie:

In 1923, while still a graduate student at the University of Paris, Louis de Broglie published a brief note in the journal *Comptes rendus* containing an idea that was to revolutionize our understanding of the physical world at the most fundamental level. He had been troubled by a curious "contradiction" arising from Einstein's special theory of relativity.

First, he assumed that there is always associated with a particle of mass m a periodic internal phenomenon of frequency f [f, rather than the traditional Greek letter "nu", is used here for purposes of compatibility with web browsers]. For a particle at rest, he equated the rest mass energy mc^2 to the energy of the quantum of the electromagnetic field hf. That is,

$$mc^2 = hf$$

where h is Planck's constant and c is the speed of light.

De Broglie noted that relativity theory predicts that, when such a particle is set in motion, its total relativistic energy will *increase*, tending to infinity as the speed of light is approached. Likewise, the period of the internal phenomenon assumed to be associated with the particle will also increase (due to time dilation). Since period and frequency are inversely related, a period increase is equivalent to a *decrease* of frequency and, hence, of the energy given by the quantum relation hf. It was this apparent incompatibility between the tendency of the relativistic energy to increase and the quantum energy to decrease that **troubled** de Broglie.[1] [footnote].

The de Broglie wavelength formula can never be removed from the microcosm and actually gets reversed out here and in the macrocosm.

(More massive things are related to lower frequencies - not higher - out here and in the macrocosm)

For instance as an electron drops closer and closer to the massive nucleus, the light it emits goes toward the blue wavelength.

In the macrocosm light from more massive areas goes toward the red wavelength.

Believe it or not, Norm, our quantum mechanics peers have evidently still not caught on to this yet.

There are thousands of references on the net where quantum people are equating higher massed items (out here) with a higher frequency.

All of this is pointed out in my Theory Of Everything book --- you get a blue shift when approaching a higher mass, not a red shift as in the macrocosm.

Also in my Theory Of Everything book is the fact that you cannot take the deBroglie wavelength formula out of the microcosm and apply it to items in the macrocosm where exactly the reverse is true

Return to RB Duncan Press homepage

Comments or complaints about anything on this site???
post to: Daniel P. Fitzpatrick Jr.

Over 4 Decades of Daniel P. Fitzpatrick's Books, Papers and Thoughts

Over 4 Decades of Fitzpatrick's Books, Papers & Thoughts http://www.amperefitz.com/4.decades.htm