

THE NEUTRON AND THE
STRUCTURED ATOM MODEL



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A NEW PERSPECTIVE BY K. STRANG

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James Chadwick discovered the neutron in 1932. Prior to that only the positively charged proton and negatively charged electron had been discovered but apart from the hydrogen atom, the mass of other atoms could not be explained by these particles alone. By introducing the neutral neutron which has an equivalent mass (only slightly greater) than the proton, and adding the weak and strong nuclear forces to the electro-magnetic forces between the charged particles, the solar system model of the atom was considered complete.

This model which has provided huge explanatory power in chemistry and biology is not the last word in physics. See the section seven on the website which delves into the problems of this model in more depth. One of the problems highlighted is that it spawned the standard model of particle physics which I believe is incoherent.

A recent model is the Structured Atom Model (SAM) which is more elegant and which avoids the contradictions inherent in the standard model. The proponents of this model consider the neutron to be a combination of protons and electrons and not a fundamental particle. The slight weight difference between the proton and neutron makes more sense and so radioactive decay they hypothesise is predictable.

Here are some quotes from *The Nature of the Atom* by Kaal, Otte, Sorensen and Emming on the fractal structure of the atom, the unnecessary and confusing ‘spin’ in the standard model and also replacing the weak nuclear force with an electromagnetic force.

‘ We identified the growth pattern the nucleus adheres to when growing in size and number of nucleons. This patterns is fractal in nature and is made up of icosahedrons that are connected.’ [p xiv]

and;

‘ What do we see when we look at the structure of an atom in SAM and its spin? A deuteron would be like a bar, or a stick, with two charged poles. So, in an external field we would expect a rotational component (it turns) , also known as magnetic nuclear

resonance. A helium nucleus would have two of those perpendicular to one and other, cancelling out the moment due to the perfect shape of the tetrahedron. The same thing is true of the carbon nucleus . . . Spin is based on an independent particle model and quantum mechanics, simply adding up the values is possible there. SAM is no such model, we therefore consider the spin of the Standard Model to be irrelevant for SAM’ [p 95-96]

and;

‘[the usual definition of radioactivity decay] is an intrinsic property, a chance-based (random) decay at the atomic level. As we do not think quantum theory applies to SAM we have to keep tis as an open question. However, we have seen the importance of structure in the nucleus and how it influences its overall stanility. The weak force from our point of view is not a real force since there is little more than an electromagnetic interaction between the nucleus and the environment.’ [p 147]

Fractal geometry provides a method of integrating different structures or patterns at all scales within a coherent whole.

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