A Particle Model Explains Special Relativity and Quantum Mechanical Processes in a Classical Way.

Abstract:

A particle model will be presented which explains Special Relativity (SR) and quantum mechanical (QM) effects in a classical way.

It is assumed that elementary particles are built by mass less particles, called 'basic particles', which permanently move (i.e. orbit each other) with the speed of light.

Following this model the relativistic effects of
- dilation and
- contraction

are caused by this fact of the constant speed of the basic particles in relation to a fixed reference frame and by the behaviour of fields in motion. So this model conforms to the Lorentzian interpretation of special relativity.

The mass of elementary particles is caused by the time retardation of the field which binds its constituents to each other in a way that a certain distance is forced. The corresponding calculation yields the parameters of known elementary particles. The change of this binding field in motion causes the
- relativistic increase of their mass
  and in this way also explains the
- mass energy equivalence

which was the most famous detection made by Albert Einstein.

As a consequence of the permanent circular motion which is assumed in this model, quantum mechanical effects can be *classically* understood:

- The interference result of particle scattering at a double slit
- The magnetic moment of the electron (in the first order, with no missing factor of 2 any longer)
- The fact that for the spin of an elementary particle only discrete values are observed
- The dependency of the gyro magnetic relation only from the radius of the particle
- The so called "Zitterbewegung" (zbw) as concluded from the Dirac equation of the electron.

As a result of this 'mechanistic' model of SRT and QM, the points of conflict between both are considerably reduced compared to the conventional understanding of SRT (Einstein interpretation) and QM (Copenhagen interpretation).