

## MTPJ Update December 2021

This quarter has seen one paper published on wave-particle duality and videos completed on the whole of Ring Theory.

### Wave-particle duality explained within a pre-fermion framework

The success in explaining almost all the features of the universe using a hypothetical pre-fermion framework is extended in the paper to include how light can be observed as both a particle and a wave.

The explanation is that light is emitted in two parts that are intimately linked at emission and observation. The photon travels within an initially spherical expanding shell whose changes in width reflect the loss of energy due to the density of the background through which it moves.

All points on the shell travel at the local light speed resulting in a distorted shell surface, with some points trapped where local light speed is zero. The photon moves randomly and non-locally within the shell because the background is always excluded from some of the shell volume.

The initial width of the shell is set by the photon emission frequency but increases as the shell expands and loses energy.

Observation is either due to the photon stacking, so that its velocity becomes zero, the shell width becomes zero as it evaporates and the photon loses frequency to the shell components reflecting the energy loss to that point or alternatively the shell is disrupted and the photon moves to a random pre-existing point on the shell where its velocity will be zero.

The former observation is particulate with no probability involved whereas the latter is wave-like. The shell is composed of the gap created between merged meon pairs in the background that do not themselves travel but that transmit the wave, as occurs in water waves.

It may be possible to prove this light hypothesis in a slit experiment that disrupts the shell and causes the photon not to arrive at the observing screen.

### Videos

The videos are a set of 33 which cover the whole of Ring Theory.

There is a new Youtube channel being created to enable the videos to be watched, but an early set may be uploaded to the site [everythingexplained.co.uk](http://everythingexplained.co.uk) in the interim.

A new paper is being prepared which is expected to clarify how the excess charge-related energy in a charged lepton is expressed. It was thought to be as a small anomalous magnetic moment for a stationary loop, but it appears that it is more likely to be a part of the energy required to bind a charged chain into a loop, and so could have a bearing on the ease with which loops change frequency.

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