Quantum theory of light

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What is quantum?

- A quantum (plural: quanta) is the smallest discrete unit of a phenomenon. For example, a quantum of light is a photon, and a quantum of electricity is an electron. Quantum comes from Latin, meaning "an amount“. If something is quantifiable, then it can be measured.
- In physics, a quantum is the minimum amount of any physical particle that has entropy. The fundamental notion that a physical property can be "quantized" is referred to as "the hypothesis of quantization".
- Entropy is the measure of a system's thermal energy per unit temperature that is unavailable for doing useful work. Because work is obtained from ordered molecular motion, the amount of entropy is also a measure of the molecular disorder or randomness of a system.

Quantum Theory :

1. The quantum theory of light was proposed by Einstein in 1905. It states that light travels in bundles of energy and each bundle is known as a photon. Each photon carries a quantity of energy equal to the product of the frequency of vibration of that photon and Planck's constant.
2. Niels Bohr and Max Planck, two of the founding fathers of Quantum Theory, each received a Nobel Prize in Physics in 1922 and 1919 respectively for their work on quanta. Einstein is considered the third founder of Quantum Theory because he described light as quanta in his theory of the Photoelectric Effect, for which he won the 1921 Nobel Prize.

Black body

Black body radiation

Thank You