

The Hebrew University of Jerusalem , Special Optic Physics Seminar

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Danciger B Building, Seminar room

"On photons and the vacuum state"

Light is just the presence of Photons. Classical waves provide only an approximate representation of light. Recent experimental work (end of 2011) dispels the need for attributing a dualistic nature to light and makes the Bohr`s Complementarity Principle irrelevant.

The length of a Photon is $n\lambda$, n being the number of cycles, and perpendicular to the direction of propagation its cross-section area is $1/4\pi \cdot \lambda^2$. In the absence of Photons, space contains only the ground state (vacuum state) quantized vibrations which we interpret as actually the Dirac`s Sea. The meanings of the Planck`s Constant $\hbar$ and the Fine Structure Constant α are revealed.