

PHOTON SPIN, WIDTH OF OSCILLATOR ENERGY LEVEL AND GIANT DIPOLE RESONANCE STRUCTURE

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In development of investigation microscopic mechanism of photoabsorption, it was gotten theoretic reasons supporting conception about needle-shaped construction of photon, [1,2], which A.F. Ioffe and N.I. Dobronravov found experimentally near hundred year ago.

Feynman path integral method it has been gotten wave function of oscillator, stepped up, with external periodic force.

In spite of this approach correspond to dipole excitation, result wave function has not define energy, and has not define square full axial moment of inertia.

In this case probability amplitude depends on strength photon electric field and length photon train.

Selection rules for energy may be get, if define excitation energy as square product of strength photon electric field and length photon train.

It may be getting selection rules for projection axial moment of inertia to direct photon motion, [3]. Selection rules for square full axial moment of inertia is not verified.

Result wave function may be useful for description photo-excitation of nucleus giant dipole resonance and its decay: photo-neutron, [4], and photo-proton, [5], reactions.

As result cross photon train define cross-section interaction.

It turns out that half-width of single-particle resonance near four time more than gamma-width decay.

Giant dipole resonance look like collection of Z single-particle resonance with width near 50eV. It integral cross-section reasonably go with sum rule.

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