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MEST-The quantum space-time explain some questions of quantum mechanics DAYONG CAO, Beijing Natural Providence Science & Technology Develoment Co., Ltd — The probability of displacement and period of wave are the quantum space-time. The paper explain of the two-slit interference and the uncertainty relation. (1) $S = P(r) = P(\lambda) = f^2$. According to the Benford's law, (2) $T = P(t) = ln(1 + \frac{1}{t}) = \nu$. Among it, S: the quantum space, f: the amplitude, r: the displacement, T: the quantum time, t: the period, ν: the frequence, λ: the wavelength, P(x): the probability function. (3) $E'\psi = i\hbar\frac{\partial\psi}{\partial t}$. (4) $m'\psi = i\hbar\frac{\partial\psi\partial t}{(\partial x)^2}$, equation (3) over equation (4), substituting equation (1) and (2) into it, (5) $E'\psi = m'\psi c'^2 = m'\psi\frac{(\partial f^2)^2}{(\partial\nu)^2}$, getting the energy-wave and mass-wave equation, (6) $E' = i\hbar\frac{\partial f^2}{\partial\nu}$. (7) $m' = i\hbar\frac{\partial\nu}{\partial f^2}$. (8) $\Delta E'\Delta\nu = \Delta E'\Delta t = i\hbar\Delta f^2, (\Delta f^2 \geq \frac{1}{2})$. (9) $\Delta p'\Delta f^2 = \Delta p'\Delta\lambda = i\hbar\Delta f^2, (\Delta f^2 \geq \frac{1}{2})$. Among it, E': the energy of wave, m': the mass of wave, c': the velocity of light, ψ: the Wave Functions, f^2: the probability. Here, the equation (8) and (9) are new uncertainty relation. In the two-slit interference, because (10) $c' = \frac{\lambda}{t} = \frac{f^2}{t}$, so (11) $f^2 = \lambda$(the wavelength), so (12) $\lambda \geq d$(the width of the slits). Measuring the time of light at one slit(1) and its energy at other silt(2) together. And the measuring probability, if (13) $f_1^2 \geq \frac{1}{2}, f_2^2 \geq \frac{1}{2}, f_1^2 = f_2^2, (f_1^2 + f_2^2) \leq 1$, then (14) $f_1^2 = f_2^2 = \frac{1}{2}$.

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