③

新文法版理論

量子歴史空間の基底　$\{\,|\nu>\;|\;\nu : \mathbf{R} \mapsto \{0,1\}\,\}$

時刻tでの量子状態が$Z^{\dagger}Z$の固有値$\nu(t)$に属する

量子歴史ベクトル　$\sum_{\nu} \Phi[\nu]|\nu>$

$\Phi[\nu] \in \mathbf{C}$

宇田方程式

$$\frac{i\hbar}{\alpha}\sum_{\nu}\lim_{\varepsilon\to 0}\frac{1}{\varepsilon}\{\Phi[\nu(\square-\varepsilon)]-\Phi[\nu]\}|\nu> = \int_{-\infty}^{\infty} dt\ A\nu(t)|\nu>$$

$$-\int_{-\infty}^{\infty} dt\ \frac{d\nu(t)}{dt}\cdot\frac{\Delta}{\Delta\nu(t)}\Phi[\nu]$$

$$\left[\ \frac{\Delta}{\Delta\nu(a)}\Phi[\nu] \equiv \lim_{\varepsilon\to+0}\frac{\Phi[\nu'']-\Phi[\nu']}{\varepsilon}\right.$$

$$\left[\begin{array}{ll} t<a \ \text{or}\ t\geqq a+\varepsilon & \Rightarrow\ \ \nu'(t)=\nu''(t)=\nu(t) \\ a\leqq t<a+\varepsilon & \Rightarrow\ \ \nu'(t)=0\ \ \text{and}\ \ \nu''(t)=1 \end{array}\right.$$

宇田方程式

$$\boxed{\int_{-\infty}^{\infty} dt\left[\frac{i\hbar}{\alpha}\cdot\frac{d\nu(t)}{dt}\cdot\frac{\Delta}{\Delta\nu(t)}+A\nu(t)\right]\Phi[\nu]=0}$$