

The observer does nothing more than disturb; by transforming  $\Psi$  into a statistical set, the dual structure of quantum mechanics is measured.

The exponential divergence of trajectories causes chaos, which is different from  $\Psi$ .

No sé si essent contradictori i extremista es poden assolir grans fites a nivell de deduccions o associacions a partir de la pròpia lògica, però em pregunto si l'adjectiu "trencador" aplicat a un estil propi de fer coses o a idear camins de recerca s'ha d'atribuir a un sistema de treball adquirit amb el temps. O cal haver-hi nascut?

The arrow of time has a before and an after associated with it.

Dissociar la mort de l'eternitat.

Ending up depending on or becoming accomplices of nature to find a home to live in (the planet).

MORE ABOUT CHAOS:

Premises:

$$\sum_n u_n | \alpha \rangle = u_1 \cdot \alpha + u_2 \cdot \alpha + \dots + u_n \cdot \alpha$$

$$\langle u_i | u_j \rangle = \delta_{ij} = 1 \text{ si } i = j$$

$$\langle u_i | u_j \rangle = \delta_{ij} = 0 \text{ if } i \neq j$$

$| u_i \rangle \langle u_j |$  likewise.

We assume that  $u_n = (a, b, c)$  i  $\widetilde{u}_n = (-a, -b, -c)$  and  $\langle u_n | \widetilde{u}_n \rangle = 1$  for the fulfillment of orthonormality (in linearly independent vectors or canonical basis in a group). It also happens in

$$\sum_n | u_n \rangle \langle \widetilde{u}_n | = \sum_n | \widetilde{u}_n \rangle \langle u_n | = 1$$

The scalar product of 2 vectors always gives a number.

Next we express F as a wave function =  $\sum_n c_n \cdot u_n$

Liouville and Hamilton equation as

$$|\rho(t)\rangle = \sum_n | u_n \rangle e^{-iL_n t} \langle u_n | \rho(t_0) \rangle$$

$$\Psi(t) = \sum_n | u_n \rangle e^{-iE_n t/\hbar} \langle u_n | \psi(t_0) \rangle \text{ respectively.}$$

Each new "t" represents another representation of  $\psi(t)$ . When  $n \rightarrow \infty$ , the results are more statistically reliable; it is as if we measured the Schrödinger equation "n" times: for each "n",  $\hat{H} \cdot \psi(t) = E \cdot \psi(t)$ . Chaos is fulfilled when

$$\psi_{n+1}(t) = U_t \cdot \psi_n(t_0)$$

Knowing that (a b c)  $\begin{pmatrix} \alpha_{11} & \alpha_{12} & \alpha_{13} \\ \alpha_{21} & \alpha_{22} & \alpha_{23} \\ \alpha_{31} & \alpha_{32} & \alpha_{33} \end{pmatrix} = (d e f)$

where “d” “e” and “f” are the results of  $\psi_{n+1}(t)$ .

assuming that (a b c) are the functions of  $\psi_n(t_0)$  from 1 to n (ex: n=3) and the matrix can be  $n \times n$ ,  $n \times m$ ....

$\sum_n \psi_n(t_0) \cdot \alpha_{n1}$  where each  $\alpha_{nm} = e^{k \cdot E_{nm}}$  where  $k = -it/\hbar$  [assuming both if  $n=m$  and if  $n \neq m$  but always  $n < m$ ],

The higher the n, the more certain  $\psi_{n+1}(t) = U_t \cdot \psi_n(t_0)$ .

$\langle u_n | \psi(t_0) \rangle$  as exponentials are numbers. We recall Kronecker and also

$$\int_{-\infty}^{\infty} \varphi(x) \varphi(x)^* \cdot dx = 1$$

we have that  $|u_n\rangle$  it is what provides the “function” terms (remember  $F = \sum_n c_n \cdot u_n$ ).

$$\psi(t)_{n+1} = \sum_{n=1}^{\infty} |u_n\rangle e^{\frac{-iE_{nm} \cdot t}{\hbar}} \langle u_n | \psi(t_0)_n \rangle$$

Then, adding and normalizing:

$$U_t \cdot \sum_{n=1}^{\infty} N' \cdot \psi(t_0)_n \rightarrow \psi(t_0)_{n+1}$$

We can measure from  $t=0$  until the time we want.

Because of the submission to which I have been subjected, sometimes voluntary and sometimes forced, I have acquired a docile temperament. I have a heightened sense of who

commands and who obeys. In the presence of qualified people, the only thing I can do is learn.

They depend on many events: "n/p"

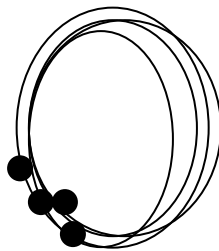
Random

Chaos

They are separated by a small border.

Statistical guidelines; no. of observations of a single event:

etc.



Determinist: Newton

Random: Universe and initial premises.

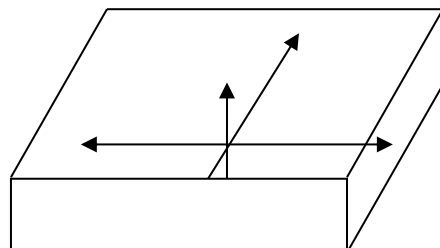
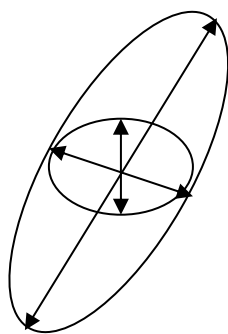
Let's take a rugby ball as the object of study:

Or also a tile:

SM

SL

SM



**Vibrational rotation** : when we rotate using the S axis we find that the rotation is less homogeneous than using the L axis as a reference.