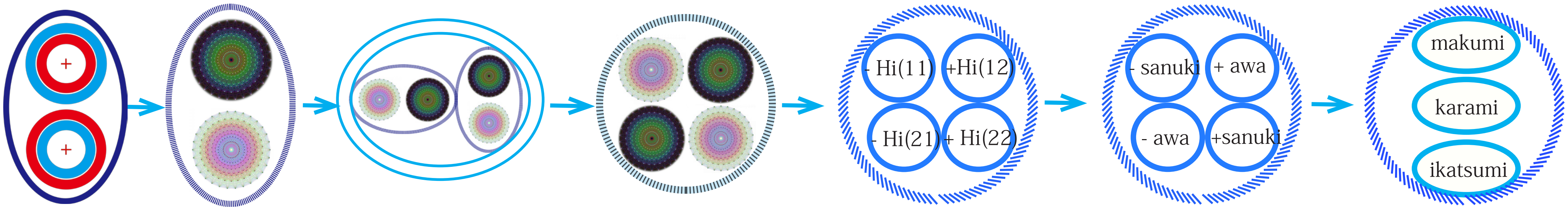

$$\left\langle {}^{\propto}_{\partial} Ma^{\pm}_{D0} \middle| {}^{\propto}_{\partial} Ka^{\pm}_{D} \right\rangle \rightarrow \left\langle sHI^{\pm Ma}_{D\sqrt{-1}} \middle| sHI^{\pm Ka}_{D\sqrt{-1}} \right\rangle \rightarrow \left(sHI^{-Ma}_{D\sqrt{-1}} \quad \middle| sHI^{+Ka}_{D\sqrt{-1}} \right) \begin{pmatrix} sHI^{-Ka}_{D\sqrt{-1}} \\ sHI^{+Ma}_{D\sqrt{-1}} \end{pmatrix} \rightarrow \begin{pmatrix} \boxed{sHI^{-Ma}_{D\sqrt{-1}}}_{11} & \boxed{sHI^{+Ka}_{D\sqrt{-1}}}_{12} \\ \boxed{sHI^{-Ka}_{D\sqrt{-1}}}_{21} & \boxed{sHI^{+Ma}_{D\sqrt{-1}}}_{22} \end{pmatrix} \rightarrow \begin{pmatrix} \boxed{Hi^{-Ma}_{D1}}_{11} & \boxed{Hi^{+Ka}_{D1}}_{12} \\ \boxed{Hi^{-Ka}_{D1}}_{21} & \boxed{Hi^{+Ma}_{D1}}_{22} \end{pmatrix} \rightarrow \begin{pmatrix} \boxed{Fu^{-sanuki}_{D2}}_{11} & \boxed{Fu^{+awa}_{D2}}_{12} \\ \boxed{Fu^{-awa}_{D2}}_{21} & \boxed{Fu^{+sanuki}_{D2}}_{22} \end{pmatrix} \rightarrow \boxed{\begin{matrix} {}^{makumi}_{amana} Mi^{\pm}_{D3} \\ {}^{karami}_{amana} Mi^{\pm}_{D3} \\ {}^{ikatsumi}_{amana} Mi^{\pm}_{D3} \end{matrix}}$$

$e \equiv$ *Napier's constant*

$i \equiv$ *imaginary numbers*

$\pi \equiv$ *Circumference Rate*

$e^{i\pi} = -1$

$i^2 = -1$

$e = 2.71828$

We guarantee the existence of imaginary numbers by matching complex numbers with entities

$e, i, \pi, 0, 1$

$e^{ix} = \cos x + i \sin x$

$e^{i\pi} + 1 = 0$

$$e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \frac{x^4}{4!} + \cdots$$

$$\lim_{n \to \infty} \left(1 + \frac{1}{n}\right)^n$$

$$\lim_{h \to 0} \frac{e^h - 1}{h} = 1$$

$$\frac{d}{dx} e^x = e^x$$

$$e = \exp 1 = \sum_{n=0}^{n=\infty} \frac{1}{n!}$$

$$e^{ix} = 1 + \frac{ix}{1!} + \frac{(ix)^2}{2!} + \frac{(ix)^3}{3!} + \frac{(ix)^4}{4!} + \cdots$$

$e =$ *Analytic constant.*

$i =$ *Algebraic number*

$\pi =$ *Geometric constant*

$\exp x = e^x =$ *exponential* x

$\ln x = \log_e x =$ *logarithmus naturalis* x

$\lg x = \log_2 x$

euler $\rightarrow$ *wave function* $\quad \varphi(x,t) = A\exp(i(kx - \omega t)) \downarrow$

j

wave function $\quad \varphi(x,t) = A\cos(kx - \omega t) + iA\sin(kx - \omega t)$

$\uparrow$

wave function $\quad \dfrac{1}{c^2}\dfrac{\partial^2 \varphi}{\partial t^2} = \dfrac{\partial^2 \varphi}{\partial x^2}$

wave function $\quad \varphi(x,t) = Ae^{i(kx - \omega t)}$

$$e^{i\pi} = -1$$

$$e^{i\pi} = -1 = \left(\sqrt{-1}\right)^2 = (i)^2 =^{+Ma}_{-Ka} \left\langle sHi^{ma}_{D\sqrt{-1}} \middle| sHi^{ka}_{D\sqrt{-1}} \right\rangle^{\circledcirc}$$

unitary group

$$\left\langle sHi^{-Ma}_{D\sqrt{-1}} \right|^2 \otimes \left| sHi^{+Ka}_{D\sqrt{-1}} \right\rangle^2 \Rightarrow 1 \equiv {}^{Ma}_{Ka} Hi^{\pm}_{D1}$$

bra – ket notation

The mathematical structure of "integer 1" was indicated by L Euler, but it informed the mysterious beautiful figure of "Number 1".

It is understood that we need "Latent-Phenomenon-bio-physical-propety" to clarify further structure of "integer 1".

https://kamu-number.com/

(3-3) Dimension 1 : Unitary group U (1) and Dimension 1 (see Arakamichi (3-4))