

$$\mathbb{C}_2^{\mathfrak{V}} \xrightarrow{\sim} \mathbb{R}_3^{\mathfrak{V}}$$

$$\begin{array}{c|c} & \\ \hline \alpha & \beta \\ -\bar{\beta} & -\alpha \end{array} = \begin{array}{c|c|c} 0 & i(\beta - \bar{\beta}) & \beta + \bar{\beta} \\ \hline i(\bar{\beta} - \beta) & 0 & 2i\alpha \\ -(\beta + \bar{\beta}) & -2i\alpha & 0 \end{array}$$

$$\tilde{X} \star \tilde{Y} = X \tilde{\star} Y$$

$$\begin{array}{c|c} & \\ \hline \alpha & \beta \\ -\bar{\beta} & -\alpha \end{array} = \begin{array}{c|c|c} 0 & \varepsilon(\beta - \bar{\beta}) & \delta(\beta + \bar{\beta}) \\ \hline \varepsilon(\bar{\beta} - \beta) & 0 & \varkappa\alpha \\ -\delta(\beta + \bar{\beta}) & -\varkappa\alpha & 0 \end{array}$$

$$\Rightarrow 2\varepsilon\delta = \varkappa: \quad \delta\varkappa = 2\varepsilon: \quad \varepsilon\varkappa = -2\delta \Rightarrow \varepsilon^2 = -1: \quad \delta^2 = 1$$

$$u|v|w \begin{array}{c|c|c} 0 & (\beta - \bar{\beta})i & \beta + \bar{\beta} \\ \hline (\bar{\beta} - \beta)i & 0 & 2\alpha i \\ -(\beta + \bar{\beta}) & -2\alpha i & 0 \end{array} = v\underbrace{\bar{\beta} - \beta}_{}i - w\underbrace{\beta + \bar{\beta}}_{}|u\underbrace{\beta - \bar{\beta}}_{}i - 2w\alpha i|u\underbrace{\beta + \bar{\beta}}_{} + 2v\alpha i$$