$$\mathbb{C}^{p|q}$$

$$\mathbb{C}$$

$$\int_{d\zeta}^{\mathbb{C}^{0|1}} \bar{\zeta}\,\zeta = 1$$

$$\mathbb{C}^{p|q} \underset{\text{Fock}}{=} \frac{{}^{z}_{0}\!\urcorner + \zeta^{z}_{1}\!\urcorner}{{}_{0}\!\urcorner \in \mathbb{C} \ni {}_{1}\!\urcorner}$$

$$\mathbb{1}_{z|\zeta} = \frac{dzd\zeta}{\pi}\, e^{-\nu \underbrace{z\bar{z}+\zeta\bar{\zeta}}} = \frac{dzd\zeta}{\pi}\, e^{-\nu\zeta\bar{\zeta}}\, e^{-\nu z\bar{z}} = \frac{dzd\zeta}{\pi}\, \underbrace{1-\nu\zeta\bar{\zeta}}\, e^{-\nu z\bar{z}}$$

$$\int_{dz/\pi}^{\mathbb{C}^{1|0}} \int_{d\zeta}^{\mathbb{C}^{0|1}} e^{-\nu \underbrace{z\bar{z}+\zeta\bar{\zeta}}} = \int_{dz/\pi}^{\mathbb{C}^{1|0}} \int_{d\zeta}^{\mathbb{C}^{0|1}} \underbrace{1-\nu\zeta\bar{\zeta}}\, e^{-\nu z\bar{z}} = \int_{dz/\pi}^{\mathbb{C}^{1|0}} \int_{d\zeta}^{\mathbb{C}^{0|1}} e^{-\nu z\bar{z}} - \nu \int_{dz/\pi}^{\mathbb{C}^{1|0}} \int_{d\zeta}^{\mathbb{C}^{0|1}} \zeta\,\bar{\zeta}\, e^{-\nu z\bar{z}}$$

$$= 0 + \nu \int_{dz/\pi}^{\mathbb{C}} e^{-\nu z\bar{z}} = \nu \int_{2rdr}^{0|\infty} \int_{dt/2\pi}^{0\downarrow_{\pi}} e^{-\nu r^2} = \nu \int_{d\varrho}^{0|\infty} e^{-\nu\varrho} = \nu \left[\frac{-\nu\varrho e}{-\nu}\right]_{\varrho=0}^{\varrho=\infty} = -\left[e^{-\nu\varrho}\right]_{\varrho=0}^{\varrho=\infty} = 1$$

$${}^{z|\zeta}\mathcal{P}_{w|\omega} = e^{\nu \underbrace{z\bar{w}+\zeta\bar{\omega}}}$$

$${}^{z|\zeta}\mathcal{P}_{w|\omega} = \sum_{0\leqslant n} \overbrace{z^n}\,\overbrace{\bar{w}^n} + \sum_{0\leqslant n} \overbrace{\zeta z^n}\,\overbrace{\bar{\omega}\bar{w}^n} = \sum_{0\leqslant n} \frac{\nu^n}{n!}\, z^n\,\bar{w}^n + \sum_{0\leqslant n} \frac{\nu^{n+1}}{n!}\, z^n\,\zeta\,\bar{w}^n\,\bar{\omega}$$

$$= e^{\nu z\bar{w}} + \nu\zeta\,\bar{\omega}\, e^{\nu z\bar{w}} = \underbrace{1+\nu\zeta\bar{\omega}}\, e^{\nu z\bar{w}} = e^{\nu\zeta\bar{\omega}}\, e^{\nu z\bar{w}} = e^{\nu \underbrace{z\bar{w}+\zeta\bar{\omega}}}$$

$$\mathcal{P}^{\nu}\,\mathbb{1} = P^{\nu\ 00}\mathbb{1} - \frac{1}{\nu}\, P^{\nu\ 11}\mathbb{1} + \zeta\, P^{\nu\ 10}\mathbb{1}$$

$$d\,\mu^{\nu}_{z|\zeta} = \frac{dzd\zeta}{\pi}\, \underbrace{1-\nu\zeta\bar{\zeta}}\, e^{-\nu z\bar{z}}$$

$${}^{z|\zeta}\mathcal{K}^{\nu}_{w|\omega} = \underbrace{1+\nu\zeta\bar{\omega}}\, e^{\nu z\bar{w}}$$

$${}^{z|\zeta}\overbrace{\mathcal{P}^{\nu}\mathbb{1}} = \int_{dw}^{\mathbb{C}^{1|0}} \int_{d\omega}^{\mathbb{C}^{0|1}} {}^{z|\zeta}\mathcal{K}^{\nu}_{w|\omega}\ {}^{w|\omega}\mathbb{1}$$

$${}^{z}\overbrace{P^{\nu}\mathbb{1}} = \int_{\nu dw/\pi}^{\mathbb{C}^{1|0}} e^{-\nu w\bar{w}}\, e^{\nu z\bar{w}}\, e^{\ w}\mathbb{1}$$

$$\int\limits_{d\omega}^{\mathbb{C}^{0|1}} \underbrace{1-\nu\zeta\bar{\zeta}}\,\underbrace{1+\nu\zeta\bar{\omega}}\,\overbrace{{}^{00}\mathbb{J}+\omega\,{}^{10}\mathbb{J}+\bar{\omega}\,{}^{01}\mathbb{J}+\omega\bar{\omega}\,{}^{11}\mathbb{J}}$$

$$=\int\limits_{d\omega}^{\mathbb{C}^{0|1}} \underbrace{1+\nu\zeta\bar{\omega}-\nu\zeta\bar{\zeta}}\,\overbrace{{}^{00}\mathbb{J}+\omega\,{}^{10}\mathbb{J}+\bar{\omega}\,{}^{01}\mathbb{J}+\omega\bar{\omega}\,{}^{11}\mathbb{J}}=\nu\,{}^{00}\mathbb{J}+\nu\zeta\,{}^{10}\mathbb{J}-\,{}^{11}\mathbb{J}$$

$$\Longrightarrow\ {}^{z|\zeta}\overbrace{\mathcal{P}^{\nu}\mathbb{J}}=\int\limits_{dw/\pi}^{\mathbb{C}^{1|0}} {}^{-\nu w\bar{w}}e\,{}^{\nu z\bar{w}}e\,\overbrace{\nu\,{}^{00}\mathbb{J}+\nu\zeta\,{}^{10}\mathbb{J}-\,{}^{11}\mathbb{J}}$$

$$=\int\limits_{\nu dw/\pi}^{\mathbb{C}^{1|0}} {}^{-\nu w\bar{w}}e\,{}^{\nu z\bar{w}}e\,\overbrace{{}^{00}\mathbb{J}+\zeta\,{}^{10}\mathbb{J}-\frac{1}{\nu}\,{}^{11}\mathbb{J}}={}^{z}\overbrace{P^{\nu 00}\mathbb{J}}-\frac{1}{\nu}\,{}^{z}\overbrace{P^{\nu 11}\mathbb{J}}+\zeta\,{}^{z}\overbrace{P^{\nu 10}\mathbb{J}}$$

$$\mathcal{P}^{\nu}\,\overbrace{{}_{0}\mathfrak{I}+\zeta_{1}\mathfrak{I}}={}_{0}\mathfrak{I}+\zeta\,{}_{1}\mathfrak{I}$$

$$\text{LHS}\ =\ P^{\nu}\,{}_{0}\mathfrak{I}+\zeta\,P^{\nu}\,{}_{1}\mathfrak{I}=\ \text{RHS}$$