

$$\nu > 2$$

$$\int_{d\zeta} {}^{10}\mathbb{C}_{|1} \bar{\zeta} \zeta = 1$$

$${}^{1|0}\mathbb{C}_{<1|1} \Delta_{\bar{w}}^2 \check{C} = \frac{z|\zeta \eta \in {}^{1|0}\mathbb{C}_{<1|1} \Delta_{\bar{w}} \mathbb{C}}{\int_{dz/\pi} \int_{d\zeta} {}^{1}\mathbb{C}_{|1} {}^{10}\mathbb{C}_{|1} \overbrace{1 - z\bar{z} - \zeta\bar{\zeta}}^{\nu-1} z|\zeta \eta z|\zeta \eta < +\infty}$$

$$\overbrace{1 - z\bar{z} - \zeta\bar{\zeta}}^{\nu-1} = \overbrace{1 - z\bar{z}}^{\nu-1} + \overbrace{\nu-1} \bar{\zeta} \zeta \overbrace{1 - z\bar{z}}^{\nu-2}$$

$$\text{LHS} = \overbrace{1 - z\bar{z}}^{\nu-1} \overbrace{1 - \frac{\zeta\bar{\zeta}}{1 - z\bar{z}}}^{\nu-1} = \overbrace{1 - z\bar{z}}^{\nu-1} \underbrace{1 - \overbrace{\nu-1} \frac{\zeta\bar{\zeta}}{1 - z\bar{z}}}_{\nu-1} = \text{RHS}$$

$${}^{1|0}\mathbb{C}_{<1|1} \Delta_{\bar{w}}^2 \check{C} = {}^1\mathbb{C}_{<1} \Delta_{\bar{w}}^{\nu} \mathbb{C} \times {}^1\mathbb{C}_{<1} \Delta_{\bar{w}}^{\nu+1} \mathbb{C}$$

$$\begin{aligned} \int_{dz/\pi} \int_{d\zeta} {}^1\mathbb{C}_{|1} {}^{10}\mathbb{C}_{|1} \overbrace{1 - z\bar{z} - \zeta\bar{\zeta}}^{\nu-1} z|\zeta \eta^0 + \zeta^z \eta^1 z|\zeta \eta^0 + \zeta^z \eta^1 &= \int_{dz/\pi} \int_{d\zeta} {}^1\mathbb{C}_{|1} {}^{10}\mathbb{C}_{|1} \overbrace{1 - z\bar{z} + \overbrace{\nu-1} \bar{\zeta} \zeta \overbrace{1 - z\bar{z}}^{\nu-2}}^{\nu-1} z|\zeta \eta^0 z|\zeta \eta^0 + \zeta^z \eta^1 z|\zeta \eta^1 \\ &= \int_{dz/\pi} \overbrace{1 - z\bar{z}}^{\nu-1} z|\zeta \eta^1 z|\zeta \eta^1 + \overbrace{\nu-1} \int_{dz/\pi} \overbrace{1 - z\bar{z}}^{\nu-2} z|\zeta \eta^0 z|\zeta \eta^0 = \eta^0 \overbrace{\nu} \eta^0 + \frac{1}{\nu} \eta^1 \overbrace{\nu+1} \eta^1 \end{aligned}$$

$$\overbrace{1 - z\bar{w} - \zeta\bar{\zeta}}^{-\nu} = \overbrace{1 - z\bar{w}}^{-\nu} + \nu \zeta \bar{\zeta} \overbrace{1 - z\bar{w}}^{-\nu-1}$$

$$\text{LHS} = \overbrace{1 - \frac{\zeta\bar{\zeta}}{1 - z\bar{w}}}^{-\nu} \overbrace{1 - z\bar{w}}^{-\nu} = \left(1 + \nu \frac{\zeta\bar{\zeta}}{1 - z\bar{w}} \right) \overbrace{1 - z\bar{w}}^{-\nu} = \text{RHS}$$

$$\int_{dw/\pi}^{1\zeta_1} \int_{d\omega}^{10\zeta_1} \frac{\overbrace{1 - w\bar{w} - \omega\bar{\omega}}^{\nu-1}}{\underbrace{1 - z\bar{w} - \zeta\bar{\omega}}_{\nu}} w|\omega \gamma = z|\zeta \gamma$$

$$\begin{aligned} & \int_{dw/\pi}^{1\zeta_1} \int_{d\omega}^{10\zeta_1} \frac{\overbrace{1 - w\bar{w} - \omega\bar{\omega}}^{\nu-1}}{\underbrace{1 - z\bar{w} - \zeta\bar{\omega}}_{\nu}} \underbrace{w\gamma^0 + \omega^w \gamma^1} \\ &= \int_{dw/\pi}^{1\zeta_1} \int_{d\omega}^{10\zeta_1} \underbrace{\overbrace{1 - w\bar{w}}^{\nu-1} + \overbrace{\nu-1}^{\nu-2} \bar{\omega}\omega}_{1 - z\bar{w} + \nu\zeta\bar{\omega}} \underbrace{\overbrace{1 - w\bar{w}}^{\nu-2}}_{1 - z\bar{w}} \underbrace{\overbrace{1 - z\bar{w}}^{-\nu}}_{1 - z\bar{w}} \underbrace{\overbrace{1 - z\bar{w}}^{-\nu-1}}_{1 - z\bar{w}} w\gamma^0 + \omega^w \gamma^1 \\ &= \int_{dw/\pi}^{1\zeta_1} \int_{d\omega}^{10\zeta_1} \nu \overbrace{1 - w\bar{w}}^{\nu-1} \zeta\bar{\omega} \underbrace{\overbrace{1 - z\bar{w}}^{-\nu-1}}_{\omega^w \gamma^1} + \overbrace{\nu-1}^{\nu-2} \bar{\omega}\omega \underbrace{\overbrace{1 - w\bar{w}}^{\nu-2}}_{1 - z\bar{w}} \underbrace{\overbrace{1 - z\bar{w}}^{-\nu}}_{\omega^w \gamma^0} \\ &= \zeta\nu \int_{dw/\pi}^{1\zeta_1} \frac{\overbrace{1 - w\bar{w}}^{\nu-1}}{\underbrace{1 - z\bar{w}}_{\nu+1}} w\gamma^1 + \underbrace{\nu-1}_{\nu} \int_{dw/\pi}^{1\zeta_1} \frac{\overbrace{1 - w\bar{w}}^{\nu-2}}{\underbrace{1 - z\bar{w}}_{\nu}} w\gamma^0 = \zeta z\gamma^1 + z\gamma^0 \end{aligned}$$

$${}^{1|0}\zeta_{1|1} \triangle_{\omega}^2 \zeta = \frac{\gamma \in {}^{1|0}\zeta_{1|1} \triangle_{\omega} \zeta}{\Gamma_{\nu} \int_{dz/\pi}^{1\zeta_1} \int_{d\zeta}^{10\zeta_1} \frac{\overbrace{1 - z\bar{z} - \zeta\bar{\zeta}}^{\nu-1}}{\Gamma_{\nu}} z|\zeta \gamma^* z|\zeta \gamma < +\infty}$$

$$z|\zeta \mathcal{P}_{w|\omega} = \overbrace{1 - z\bar{w}^* + \zeta\bar{\omega}^*}$$

$$z|\zeta \mathcal{P}_{w|\omega} = \sum_{0 \leq n} \overline{z^n} \overline{w^n}^* + \sum_{0 \leq n} \overline{\zeta z^n} \overline{\omega w^n}^*$$

$$= \sum_{0 \leq n} \frac{\nu_n}{n!} z^n \bar{w}^n + \sum_{0 \leq n} \frac{\nu_{n+1}}{n!} z^n \zeta \bar{w}^n \bar{\omega}^* = \overbrace{1 - z\bar{w}^*}^{-\nu} + \nu \zeta \bar{\omega}^* \overbrace{1 - z\bar{w}^*}^{-\nu-1}$$

$$= \left(1 + \nu \frac{\zeta \bar{\omega}^*}{1 - z\bar{w}^*} \right) \overbrace{1 - z\bar{w}^*}^{-\nu} = \overbrace{1 - \frac{\zeta \bar{\omega}^*}{1 - z\bar{w}^*}}^{-\nu} \overbrace{1 - z\bar{w}^*}^{-\nu} = \overbrace{1 - \underbrace{z\bar{w}^* + \zeta \bar{\omega}^*}}^{-\nu}$$

$$\int_{\mathbb{C}^{011}} \zeta^* \zeta = 1$$

$$\downarrow_{z|\zeta} = \frac{dz}{\pi} d\zeta \overbrace{1 - \frac{\nu-1}{z\bar{z} + \zeta\zeta^*}} = \frac{dz}{\pi} \overbrace{\frac{\nu-1}{1 - z\bar{z}}} d\zeta \overbrace{1 - \frac{\zeta\zeta^*}{1 - z\bar{z}}} = \frac{dz}{\pi} \overbrace{\frac{\nu-1}{1 - z\bar{z}}} d\zeta \left(1 - \underbrace{\nu-1}_{\nu-1} \frac{\zeta\zeta^*}{1 - z\bar{z}} \right)$$

$$\downarrow_{z|\zeta} = \frac{dz}{\pi} d\zeta \overbrace{1 - \frac{\nu-1}{z\bar{z} + \zeta\zeta^*}} = \frac{dz}{\pi} \overbrace{\frac{\nu-1}{1 - z\bar{z}}} d\zeta \overbrace{1 - \frac{\zeta\zeta^*}{1 - z\bar{z}}} = \frac{dz}{\pi} \overbrace{\frac{\nu-1}{1 - z\bar{z}}} d\zeta \left(1 - \underbrace{\nu-1}_{\nu-1} \frac{\zeta\zeta^*}{1 - z\bar{z}} \right)$$

$$\int_{\zeta} \int_{\mathbb{C}^{011}} \overbrace{1 - \frac{\nu-1}{w\bar{w} + \omega\bar{\omega}^*}} \overbrace{1 - \frac{-\nu}{z\bar{w} + \zeta\bar{\omega}^*}} \underbrace{00\Downarrow + \omega_w^{10}\Downarrow + \bar{\omega}_w^{01}\Downarrow + \bar{\omega}_w^{11}\Downarrow}$$

$$= \int_{\zeta} \frac{d^2 w/\pi}{1 - w\bar{w}} \overbrace{1 - \frac{-\nu}{z\bar{w}}} \int_{\mathbb{C}^{011}} \underbrace{1 + (\nu-1) \frac{\bar{\omega}\omega}{1 - w\bar{w}} \left(1 + \nu \frac{\zeta\bar{\omega}}{1 - z\bar{w}} \right)} \underbrace{00\Downarrow + \omega_w^{10}\Downarrow + \bar{\omega}_w^{01}\Downarrow + \bar{\omega}_w^{11}\Downarrow}$$

$$= \int_{\zeta} \frac{d^2 w/\pi}{1 - w\bar{w}} \overbrace{1 - \frac{-\nu}{z\bar{w}}} \int_{\mathbb{C}^{011}} \bar{\omega}\omega_w^{11}\Downarrow + \nu \frac{\zeta\bar{\omega}}{1 - z\bar{w}} \omega_w^{10}\Downarrow + (\nu-1) \frac{\bar{\omega}\omega}{1 - w\bar{w}} 00\Downarrow$$

$$= \int_{\zeta} \frac{d^2 w/\pi}{1 - w\bar{w}} \overbrace{1 - \frac{-\nu}{z\bar{w}}} \underbrace{11\Downarrow + \nu \frac{\zeta}{1 - z\bar{w}} 10\Downarrow + (\nu-1) \frac{1}{1 - w\bar{w}} 00\Downarrow}$$

$$= (\nu-1) \int_{\zeta} \frac{d^2 w/\pi}{1 - w\bar{w}} \overbrace{1 - \frac{-\nu}{z\bar{w}}} 00\Downarrow + \nu\zeta \int_{\zeta} \frac{d^2 w/\pi}{1 - w\bar{w}} \overbrace{1 - \frac{-\nu-1}{z\bar{w}}} 10\Downarrow + \int_{\zeta} \frac{d^2 w/\pi}{1 - w\bar{w}} \overbrace{1 - \frac{-\nu}{z\bar{w}}} 11\Downarrow$$

$$= \overbrace{\mathcal{P}_\nu^{00}\Downarrow}^z + \zeta \overbrace{\mathcal{P}_{\nu+1}^{10}\Downarrow}^z + \text{awful}$$