

$$\begin{aligned}
{}^y\gamma_x &= {}^y_{-x} {}^x B_x^{1/2} + x \\
\dot{x} : \dot{y} \overbrace{\gamma(0:y)}^* &= \dot{x} + \dot{y} - y \dot{x} y \\
\dot{y} = -y \Rightarrow \overbrace{y \dot{x} y}^* &= \dot{y} \dot{x} \dot{y} = \cancel{y} \dot{x} \cancel{y} = y \dot{x} y \Rightarrow \dot{x} + \dot{y} - y \dot{x} y = \cancel{\dot{x} - y \dot{x} y} + \dot{y} = \dot{x} : \dot{y} \frac{I - Q_y}{0} \Big| I \\
&\Rightarrow \overbrace{\gamma(0:y)}^* = \frac{\overbrace{I - Q_y}{0}}{I} = \overbrace{I - Q_y}^* \\
w = u + v &= {}^y_{-x} {}^x B_x^{1/2} + x \\
\dot{x} {}^{0:y} w &= \dot{x} - y \dot{x} y \Rightarrow \begin{cases} \dot{x} {}^{0:y} u = \dot{x} - y \dot{x} y \\ \dot{x} {}^{0:y} v = 0 \end{cases} \\
\dot{y} {}^{0:y} w &= \dot{y} \Rightarrow \begin{cases} \dot{y} {}^{0:y} u = 0 \\ \dot{y} {}^{0:y} v = \dot{y} \end{cases} \\
{}^y_{-x} {}^x B_x^{1/2} &= \cancel{u - x} + v \\
{}^y_{-x} = \overbrace{u - x + v}^x B_x^{-1/2} &= \cancel{u - x} {}^x B_x^{-1/2} + v {}^x B_x^{-1/2} \\
\underbrace{u - x} {}^x B_x^{-1/2} &= {}^y_{-x} \cancel{\frac{y}{2}} \overbrace{y}^* = -x Q_y {}^y B_{-x}^{-1} \Rightarrow u = x - x Q_y {}^y B_{-x}^{-1} {}^x B_x^{1/2} \\
v {}^x B_x^{-1/2} &= {}^y_{-x} \cancel{\frac{y}{2}} \overbrace{y}^* = y {}^y B_{-x}^{-1} \Rightarrow v = y {}^y B_{-x}^{-1} {}^x B_x^{1/2}
\end{aligned}$$

$$\begin{aligned}
{}^y_{-x} + \overbrace{y}^* &= \overbrace{\frac{-1}{1+yx}} y - y \overbrace{\frac{-1}{1-xy}} = \overbrace{\frac{-1}{1+yx}} y \underbrace{1-xy}_{\cancel{1+yx}} - \overbrace{\frac{-1}{1+yx}} y \overbrace{1-xy}^* \\
&= -2 \overbrace{\frac{-1}{1+yx}} yxy \overbrace{\frac{-1}{1-xy}} = -2x Q_y {}^y B_{-x}^{-1} \\
{}^y_{-x} - \overbrace{y}^* &= \overbrace{\frac{-1}{1+yx}} y + y \overbrace{\frac{-1}{1-xy}} = \overbrace{\frac{-1}{1+yx}} y \underbrace{1-xy}_{\cancel{1+yx}} + \overbrace{\frac{-1}{1+yx}} y \overbrace{1-xy}^* \\
&= 2 \overbrace{\frac{-1}{1+yx}} y \overbrace{\frac{-1}{1-xy}} = 2y {}^y B_{-x}^{-1}
\end{aligned}$$

$${}^y_{-x} {}^x B_x^{1/2} + x \stackrel{\pi}{=} {}^y \gamma_x \pi = {}^y \pi \gamma_x = {}^0 \gamma_x = x$$

$$dx \mathop{\Delta_x^{-p}}_{\mathbb{R}} dy \mathop{\Delta_y^{-p}}_{\mathbb{R}} \mathop{\Delta_{-y}^p}_{\mathbb{C}}$$

$$\int_{dy}^{-1|1} \left( \frac{1-y^2}{1+y^2} \right)^\nu \frac{iy\gamma}{1-y^2}$$

$$\int_{dy}^{-1|1} \left( \frac{1-y^2}{1+y^2} \right)^\nu \frac{y^{2m}}{1-y^2} = 2 \int_{dy}^{0|1} \left( \frac{1-y^2}{1+y^2} \right)^\nu \frac{y^{2m}}{1-y^2}$$

$$\int_{dx}^{0|1} x^{\gamma-1} \overbrace{1-x}^{\frac{\varrho-1}{1-\varrho}} \overbrace{1-zx}^{-\sigma} \overbrace{x}^{\alpha|\beta} = \frac{\gamma|\varrho|\gamma+\varrho-\alpha-\beta}{\gamma+\varrho-\alpha|\gamma+\varrho-\beta} \overbrace{1-z}^{-\sigma} \overbrace{\frac{z}{z-1}}^{\varrho|\sigma|\gamma+\varrho-\alpha-\beta} \overbrace{z-1}^{\gamma+\varrho-\alpha|\gamma+\varrho-\beta}$$

$$z = \underbrace{w-e}_{\gamma} \overbrace{w+e}^{-1}$$

$$w = \underbrace{e+z}_{\gamma} \overbrace{e-z}^{-1}$$

$$w \pm \frac{\dot{w}}{2} = \overbrace{e-z}^{-1} \underbrace{e-z\dot{z}}_{\gamma} \overbrace{e-\dot{z}}^{-1}$$

$$2 \text{ LHS } = \underbrace{e+z}_{\gamma} \overbrace{e-z}^{-1} + \underbrace{e+\dot{z}}_{\gamma} \overbrace{e-\dot{z}}^{-1} = \overbrace{e-z}^{-1} \overbrace{e+z, e-\dot{z}, e-\dot{z}}_{\gamma} \overbrace{e-\dot{z}}^{-1} = 2 \text{ RHS}$$

$${}^z\pi_B = \underbrace{w+\dot{w}}_{\gamma} - e \overbrace{w+\dot{w}+e}^{-1} = \overbrace{e-z}^{-1} \underbrace{z+\dot{z}-z\dot{z}}_{\gamma} \overbrace{e-z+\dot{z}}^{-1} \underbrace{e-z}_{\gamma}$$

$$w \pm \frac{\dot{w}}{2} - e = \overbrace{e-z}^{-1} \underbrace{z+\dot{z}-2z\dot{z}}_{\gamma} \overbrace{e-\dot{z}}^{-1}$$

$$w \pm \frac{\dot{w}}{2} + e = \overbrace{e-z}^{-1} \underbrace{2e-z-\dot{z}}_{\gamma} \overbrace{e-\dot{z}}^{-1}$$

$$z \in \pi_B^{-1}(0) \Leftrightarrow z \pm \frac{\dot{z}}{2} = z\dot{z} \Leftrightarrow \overbrace{z-e}^{-1} z \text{ skew} \Leftrightarrow z = it \overbrace{2e+it}^{-1} \Leftrightarrow \overbrace{z-1/2} = 1/4$$

$$B \mathop{\bowtie}_{\mathbb{C}}^{\mathbb{R}} \mathcal{P} \xleftarrow[B_{\mathbb{C}}]{\mathcal{P}} B \mathop{\boxtimes}_{\mathbb{C}}^{\mathbb{R}}$$

$$(1+\zeta)^\zeta \widehat{\mathcal{P}F} = \int_{\frac{1+it}{-1}}^{\mathbb{R}} \underline{\zeta + it} F$$

$$\begin{array}{ccc} & \begin{array}{c|c} c & s \\ \hline s & c \end{array} & \\ B_{\mathbb{C}} \nearrow \mathbb{C} & \xleftarrow{\quad} & B_{\mathbb{C}} \nearrow \mathbb{C} \\ \downarrow \mathcal{P} & & \downarrow \mathcal{P} \\ B^{\mathbb{R}} \searrow \mathbb{C} & \xleftarrow{\quad} & B^{\mathbb{R}} \searrow \mathbb{C} \\ & \begin{array}{c|c} c & s \\ \hline s & c \end{array} & \end{array}$$

$$\frac{\zeta + it}{1+it} \frac{c \mid s}{s \mid c} = \overbrace{c + \frac{-1}{1+it}s}^{\zeta + it} \underbrace{s + \frac{\zeta + it}{1+it}c}_{c + \zeta s} = \frac{s\overbrace{1+it} + \overbrace{\zeta + it}c}{c\overbrace{1+it} + \overbrace{\zeta + it}s} = \frac{\overbrace{s + \zeta c} + it\overbrace{s + c}}{\overbrace{c + \zeta s} + it\overbrace{s + c}}$$

$$1 + \zeta \frac{c \mid s}{s \mid c} = 1 + \overbrace{c + \zeta s}^{\zeta + it} \underbrace{s + \zeta c}_{c + \zeta s} = \overbrace{c + \zeta s}^{\zeta + it} \underbrace{c + \zeta s + s + \zeta c}_{c + s + 1 + \zeta} = \overbrace{c + \zeta s}^{\zeta + it} \underbrace{c + s}_{c + s} \underbrace{1 + \zeta}_{1 + it}$$

$$\vartheta = \frac{s+c}{c+\zeta s} t$$

$$\frac{d\vartheta}{dt} = \frac{s+c}{c+\zeta s} = \frac{1+\zeta \frac{c \mid s}{s \mid c}}{1+\zeta}$$

$$\frac{\zeta \frac{c \mid s}{s \mid c} + i\vartheta}{1+i\vartheta} = \frac{\overbrace{c + \zeta s}^{\zeta + it} \underbrace{s + \zeta c}_{c + \zeta s} + i\vartheta}{1+i\vartheta} = \frac{\overbrace{s + \zeta c} + i\vartheta \overbrace{c + \zeta s}}{\underbrace{c + \zeta s} + i\vartheta \underbrace{c + \zeta s}} = \frac{\overbrace{s + \zeta c} + it \overbrace{c + s}}{\underbrace{c + \zeta s} + it \underbrace{c + s}} = \frac{\zeta + it}{1+it} \frac{c \mid s}{s \mid c}$$

$$\zeta \frac{c \mid s}{s \mid c} \widehat{\mathcal{P}F} = \int \frac{d\vartheta}{1+\zeta \frac{c \mid s}{s \mid c} \frac{1+i\vartheta}{-1} \zeta \frac{c \mid s}{s \mid c} + i\vartheta} F = \int \frac{dt}{1+\zeta} \frac{\zeta + it}{1+it} \frac{c \mid s}{s \mid c} F = \mathcal{P} \underbrace{\zeta \frac{c \mid s}{s \mid c}}_{c + \zeta s} \blacktriangleleft F$$

$$\int\limits_{dz}^{B_{\mathbb{C}}} \widetilde{\frac{-2}{1-z\bar{z}}} {}^z\gamma = \int\limits_{dx}^{B_{\mathbb{R}}} \widetilde{\frac{-1}{1-x^2}} \int\limits_{dy}^{-1|1} \frac{1+y^2}{(1-y^2)^2} {}^{x+iy/1+ixy}\gamma$$

$$z = u + iv = \frac{x + iy}{1 + ixy} = \begin{array}{c} iy \\ \hline x | 1 \end{array} \Rightarrow \begin{cases} z_x = \frac{1 + y^2}{(1 + ixy)^2} \\ z_y = i \frac{1 - x^2}{(1 + ixy)^2} \end{cases}$$

$$\frac{u_x}{u_y} \left| \begin{array}{cc} v_x & 1 \\ v_y & i \end{array} \right| \left. \begin{array}{c} 1 \\ -i \end{array} \right\rangle = \frac{z_x}{z_y} \left| \begin{array}{c} \bar{z}_x \\ \bar{z}_y \end{array} \right\rangle = \frac{\frac{1 + y^2}{(1 + ixy)^2}}{i \frac{1 - x^2}{(1 + ixy)^2}} \left| \begin{array}{c} \frac{1 + y^2}{(1 - ixy)^2} \\ -i \frac{1 - x^2}{(1 - ixy)^2} \end{array} \right\rangle \Rightarrow \overbrace{\frac{u_x}{u_y} \left| \begin{array}{c} v_x \\ v_y \end{array} \right\rangle}^{\left(1 - x^2\right) \left(1 + y^2\right)} = \frac{\left(1 - x^2\right) \left(1 + y^2\right)}{\left(1 + x^2y^2\right)^2}$$

$$1 - \frac{x + iy}{1 + ixy} \frac{x - iy}{1 - ixy} = \frac{\left(1 - x^2\right) \left(1 - y^2\right)}{1 + x^2y^2}$$

$$\Rightarrow \overbrace{1 - \frac{x + iy}{1 + ixy} \frac{x - iy}{1 - ixy}}^{-2} \overbrace{\frac{u_x}{u_y} \left| \begin{array}{c} v_x \\ v_y \end{array} \right\rangle}^{\left(1 + x^2y^2\right)^2} = \frac{\left(1 + x^2y^2\right)^2}{\left(1 - x^2\right)^2 \left(1 - y^2\right)^2} \frac{\left(1 - x^2\right) \left(1 + y^2\right)}{\left(1 + x^2y^2\right)^2} = \frac{1 + y^2}{\left(1 - x^2\right) \left(1 - y^2\right)^2}$$