

$$\begin{aligned}
s_v &= 2p - e = \frac{\overbrace{1+v\hat{v}}^{-1} \overbrace{1-v\hat{v}}}{2\hat{v} \underbrace{1+v\hat{v}}_{-1}} \left| \begin{array}{c} \overbrace{2\overbrace{1+v\hat{v}}^{-1} v} \\ \underbrace{1+\hat{v}v \hat{v}v - 1}_{-1} \end{array} \right. \\
{}_u \mathfrak{l} &= \frac{e+s_v}{2} = \frac{\overbrace{1+v\hat{v}}^{-1}}{\hat{v} \underbrace{1+v\hat{v}}_{-1}} \left| \begin{array}{c} \overbrace{1+v\hat{v}}^{-1} v \\ \hat{v} \underbrace{1+\hat{v}v v}_{-1} \end{array} \right. = \frac{i \overbrace{1+v\hat{v}}^{-1}^j}{k \hat{v}^i \underbrace{1+v\hat{v}}_{-1}^j} \left| \begin{array}{c} i \overbrace{1+v\hat{v}}^{-1}^j v^\ell \\ k \hat{v}^i \underbrace{1+\hat{v}v}_{-1}^j v^\ell \end{array} \right. \\
{}_w \mathfrak{l} &= \frac{e-s_v}{2} = \frac{v \overbrace{1+\hat{v}v}^{-1} \hat{v}}{-\hat{v} \underbrace{1+v\hat{v}}_{-1}} \left| \begin{array}{c} -\overbrace{1+v\hat{v}}^{-1} v \\ \underbrace{1+\hat{v}v}_{-1} \end{array} \right. \\
v &= \frac{0}{\hat{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. \\
2c - e + v &= \frac{1}{\hat{v}} \left| \begin{array}{c} v \\ -1 \end{array} \right. \\
e + v^2 &= \frac{1+v\hat{v}}{0} \left| \begin{array}{c} 0 \\ 1+\hat{v}v \end{array} \right. \\
\underbrace{2c - e + v}_{-1/2} \underbrace{e + v^2}_{-1/2} &= \frac{1}{\hat{v}} \left| \begin{array}{c} v \\ -1 \end{array} \right. \frac{\overbrace{1+v\hat{v}}^{-1/2}}{0} \left| \begin{array}{c} 0 \\ \underbrace{-1/2}_{1+\hat{v}v} \end{array} \right. = \frac{\overbrace{1+v\hat{v}}^{-1/2}}{\hat{v} \underbrace{1+v\hat{v}}_{-1/2}} \left| \begin{array}{c} v \overbrace{1+\hat{v}v}^{-1/2} \\ \underbrace{-1+\hat{v}v}_{-1/2} \end{array} \right. \\
\frac{\overbrace{1+v\hat{v}}^{-1/2}}{0} \left| \begin{array}{c} 0 \\ \underbrace{-1/2}_{1+\hat{v}v} \end{array} \right. \frac{1}{\hat{v}} \left| \begin{array}{c} v \\ \hat{v}v \end{array} \right. \frac{\overbrace{1+v\hat{v}}^{-1/2}}{0} \left| \begin{array}{c} 0 \\ \underbrace{-1/2}_{1+\hat{v}v} \end{array} \right. &= \frac{\overbrace{1+v\hat{v}}^{-1}}{\hat{v} \underbrace{1+v\hat{v}}_{-1}} \left| \begin{array}{c} \overbrace{1+v\hat{v}}^{-1} v \\ \hat{v} \underbrace{1+v\hat{v}}_{-1} v \end{array} \right. \in \Pi \\
\underbrace{2c - e + 2v + 2vcv - v^2}_{-1} \underbrace{e + v^2}_{-1} &= \frac{1-v\hat{v}}{2\hat{v}} \left| \begin{array}{c} 2v \\ \hat{v}v - 1 \end{array} \right. \frac{\overbrace{1+v\hat{v}}^{-1}}{0} \left| \begin{array}{c} 0 \\ \underbrace{-1}_{1+\hat{v}v} \end{array} \right. = \frac{\overbrace{1-v\hat{v}}^{-1} \overbrace{1+v\hat{v}}^{-1}}{2\hat{v} \underbrace{1+v\hat{v}}_{-1}} \left| \begin{array}{c} 2v \overbrace{1+\hat{v}v}^{-1} \\ \hat{v}v - 1 \underbrace{1+\hat{v}v}_{-1} \end{array} \right. \\
s_v &= 2p - e = \frac{\overbrace{1+v\hat{v}}^{-1} \overbrace{1-v\hat{v}}}{2\hat{v} \underbrace{1+v\hat{v}}_{-1}} \left| \begin{array}{c} \overbrace{2\overbrace{1+v\hat{v}}^{-1} v} \\ \underbrace{1+\hat{v}v \hat{v}v - 1}_{-1} \end{array} \right. \\
\frac{u}{0} \left| \begin{array}{c} 0 \\ w \end{array} \right. \ell_v &= \frac{u}{0} \left| \begin{array}{c} 0 \\ w \end{array} \right. P_{2c-e+v} P_{e+v^2}^{-1/2} = \frac{\overbrace{1+v\hat{v}}^{-1/2} \underbrace{u+v\hat{v}\hat{v}}_{-1/2} \overbrace{1+v\hat{v}}^{-1/2}}{\underbrace{1+v\hat{v}}_{-1/2} \underbrace{\hat{v}u-w\hat{v}}_{-1/2} \underbrace{1+v\hat{v}}_{-1/2}} \left| \begin{array}{c} \overbrace{1+v\hat{v}}^{-1/2} \underbrace{uv-vw}_{-1/2} \overbrace{1+\hat{v}v}^{-1/2} \\ \underbrace{1+v\hat{v}}_{-1/2} \underbrace{\hat{v}uv+w}_{-1/2} \underbrace{1+\hat{v}v}_{-1/2} \end{array} \right.
\end{aligned}$$

$$X_v^1 \ni \frac{u}{\overset{*}{v}u} \left| \begin{array}{c} uv \\ \overset{*}{v}uv \end{array} \right. = \frac{1}{\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. \frac{u}{0} \left| \begin{array}{c} 0 \\ 0 \end{array} \right. \frac{1}{\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. = X_c^1 P_{c+v}$$

$$\begin{aligned} & \frac{u}{\overset{*}{v}u} \left| \begin{array}{c} uv \\ \overset{*}{v}uv \end{array} \right. \frac{\eta}{\overset{*}{v}\eta} \left| \begin{array}{c} \eta v \\ \overset{*}{v}\eta v \end{array} \right. + \frac{\eta}{\overset{*}{v}\eta} \left| \begin{array}{c} \eta v \\ \overset{*}{v}\eta v \end{array} \right. \frac{u}{\overset{*}{v}u} \left| \begin{array}{c} uv \\ \overset{*}{v}uv \end{array} \right. \\ &= \frac{u\underline{1} + v\underline{\overset{*}{v}}\eta + \eta\underline{1} + v\underline{\overset{*}{v}}u}{\overset{*}{v}u\underline{1} + v\underline{\overset{*}{v}}\eta + \overset{*}{v}\eta\underline{1} + v\underline{\overset{*}{v}}u} \left| \begin{array}{c} u\underline{1} + v\underline{\overset{*}{v}}\eta v + \eta\underline{1} + v\underline{\overset{*}{v}}uv \\ \overset{*}{v}u\underline{1} + v\underline{\overset{*}{v}}\eta v + \overset{*}{v}\eta\underline{1} + v\underline{\overset{*}{v}}uv \end{array} \right. = 2 \frac{u}{\overset{*}{v}u} \left| \begin{array}{c} uv \\ k^*_{\xi_j} \overset{*}{v}uv \end{array} \right. \end{aligned}$$

$$X_v^0 \ni \frac{vw\overset{*}{v}}{-w\overset{*}{v}} \left| \begin{array}{c} -vw \\ w \end{array} \right. = \frac{0}{\overset{*}{v}} \left| \begin{array}{c} v \\ -1 \end{array} \right. \frac{0}{0} \left| \begin{array}{c} 0 \\ w \end{array} \right. \frac{0}{\overset{*}{v}} \left| \begin{array}{c} v \\ -1 \end{array} \right. = X_c^0 P_{v+c-e}$$

$$\frac{vw\overset{*}{v}}{-w\overset{*}{v}} \left| \begin{array}{c} -vw \\ w \end{array} \right. \frac{\eta}{\overset{*}{v}\eta} \left| \begin{array}{c} \eta v \\ \overset{*}{v}\eta v \end{array} \right. + \frac{\eta}{\overset{*}{v}\eta} \left| \begin{array}{c} \eta v \\ \overset{*}{v}\eta v \end{array} \right. \frac{vw\overset{*}{v}}{-w\overset{*}{v}} \left| \begin{array}{c} -vw \\ w \end{array} \right. = 0$$

$$\varphi \left(\frac{\overset{i}{u}_j}{k\overset{*}{v}_j} \left| \begin{array}{c} \overset{i}{v}_\ell \\ k\overset{*}{w}_\ell \end{array} \right. \right)$$

$$\frac{1}{0} \left| \begin{array}{c} * \\ 0 \end{array} \right. \frac{0}{\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. - \frac{0}{\overset{*}{v}} \left| \begin{array}{c} * \\ v \end{array} \right. \frac{1}{0} \left| \begin{array}{c} 0 \\ 0 \end{array} \right. = R_{\frac{0}{-\overset{*}{v}}} \left| \begin{array}{c} v \\ 0 \end{array} \right. - L_{\frac{0}{-\overset{*}{v}}} \left| \begin{array}{c} v \\ 0 \end{array} \right.$$

$$\begin{aligned} \frac{u}{\overset{*}{v}} \left| \begin{array}{c} v \\ w \end{array} \right. \text{LHS} &= \frac{u}{\overset{*}{v}} \left| \begin{array}{c} v \\ w \end{array} \right. \frac{1}{0} \left| \begin{array}{c} 0 \\ 0 \end{array} \right. \frac{0}{\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. + \frac{0}{\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. \frac{1}{0} \left| \begin{array}{c} 0 \\ 0 \end{array} \right. \frac{u}{\overset{*}{v}} \left| \begin{array}{c} v \\ w \end{array} \right. - \frac{u}{\overset{*}{v}} \left| \begin{array}{c} v \\ w \end{array} \right. \frac{0}{\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. \frac{1}{0} \left| \begin{array}{c} 0 \\ 0 \end{array} \right. - \frac{1}{0} \left| \begin{array}{c} 0 \\ 0 \end{array} \right. \frac{0}{\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. \frac{u}{\overset{*}{v}} \left| \begin{array}{c} v \\ w \end{array} \right. \\ &= \frac{-v\overset{*}{v} - v\overset{*}{v}}{\overset{*}{v}u - w\overset{*}{v}} \left| \begin{array}{c} uv - vw \\ \overset{*}{v}v + \overset{*}{v}v \end{array} \right. = \frac{u}{\overset{*}{v}} \left| \begin{array}{c} v \\ w \end{array} \right. \frac{0}{-\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. - \frac{0}{-\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. \frac{u}{\overset{*}{v}} \left| \begin{array}{c} v \\ w \end{array} \right. = \frac{u}{\overset{*}{v}} \left| \begin{array}{c} v \\ w \end{array} \right. \text{RHS} \end{aligned}$$

$$\begin{aligned} \exp \left(\frac{1}{0} \left| \begin{array}{c} * \\ 0 \end{array} \right. \frac{0}{\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. - \frac{0}{\overset{*}{v}} \left| \begin{array}{c} * \\ v \end{array} \right. \frac{1}{0} \left| \begin{array}{c} 0 \\ 0 \end{array} \right. \right) &= \exp R_{\frac{0}{-\overset{*}{v}}} \left| \begin{array}{c} v \\ 0 \end{array} \right. \overbrace{\exp L_{\frac{0}{-\overset{*}{v}}} \left| \begin{array}{c} v \\ 0 \end{array} \right.}^{-1} = R_{\exp \frac{0}{-\overset{*}{v}}} \left| \begin{array}{c} v \\ 0 \end{array} \right. \overbrace{L_{\exp \frac{0}{-\overset{*}{v}}}}^{-1} \left| \begin{array}{c} v \\ 0 \end{array} \right. \\ \exp \frac{0}{-\overset{*}{v}} \left| \begin{array}{c} v \\ 0 \end{array} \right. &= \frac{\overset{v\overset{*}{v}}{\mathfrak{c}}}{-\overset{\overset{*}{v}v}{\mathfrak{s}} \overset{*}{v}} \left| \begin{array}{c} \overset{v\overset{*}{v}}{\mathfrak{s}} v \\ \overset{*}{v}v \mathfrak{c} \end{array} \right. = \frac{\overset{v\overset{*}{v}}{\mathfrak{c}}}{-\overset{\overset{*}{v}v}{\mathfrak{s}}} \left| \begin{array}{c} \overset{v\overset{*}{v}}{\mathfrak{s}} v \\ \overset{*}{v}v \mathfrak{c} \end{array} \right. \end{aligned}$$