$$\overbrace{wg}^{wg}\,{}_{\underline{w}}{}^{*}\underline{g} = w^{w} + 0 \cdot {}_{\underline{w}}{}^{*}\underline{g}$$

$$1 - \underbrace{wg}\,\overbrace{wg}^{*} = 1 - \underbrace{a+wc}_{-1}\underbrace{b+wd}\,\overbrace{\underbrace{a+wc}_{-1}\underbrace{b+wd}}^{*} = 1 - \underbrace{a+wc}_{-1}\underbrace{b+wd}\,\overbrace{b+wd}^{*}\,\overbrace{a+wc}^{-*}$$

$$= \overbrace{a+wc}^{-1}\,\overbrace{\underbrace{a+wc}_{*}\underbrace{a+wc}_{*} - \underbrace{b+wd}_{*}\underbrace{b+wd}_{*}}^{=\,1-w\overset{*}{w}}\,\overbrace{a+wc}^{-*}$$

$$= \overbrace{a+wc}^{-1}\,\overbrace{\underbrace{a\overset{*}{a}}_{=1} - \underbrace{b\overset{*}{b}}_{=0} + w\underbrace{c\overset{*}{a}}_{=0} - \underbrace{d\overset{*}{b}}_{=0}\overset{*}{w} + w\underbrace{c\overset{*}{c}}_{=-1} - \underbrace{d\overset{*}{d}}_{=-1}\overset{*}{w}}\,\overbrace{a+wc}^{-*} = \overbrace{a+wc}^{-1}\,\underbrace{1-w\overset{*}{w}}\,\overbrace{a+wc}^{-*}$$

$$\overbrace{wg}^{wg} = \overbrace{1 - \underbrace{wg}\,\overbrace{wg}^{*}}^{-1}\,wg = \overbrace{a+wc}^{*}\,\overbrace{1-w\overset{*}{w}}^{-1}\,\overbrace{a+wc}\,\overbrace{a+wc}^{-1}\,\overbrace{b+wd} = \overbrace{a+wc}^{*}\,\overbrace{1-w\overset{*}{w}}^{-1}\,\overbrace{b+wd}$$

$$\overbrace{wg}^{wg}\,{}_{\underline{w}}{}^{*}\underline{g} = \overbrace{a+wc}^{-*}\,\overbrace{a+wc}^{*}\,\overbrace{1-w\overset{*}{w}}^{-1}\,\overbrace{b+wd}\,\underbrace{\overset{*}{d} - \overbrace{b+wd}^{*}\overbrace{a+wc}^{-*}\overset{*}{c}}$$

$$= \overbrace{1-w\overset{*}{w}}^{-1}\,\underbrace{\overbrace{b+wd}\overset{*}{d} - \overbrace{b+wd}\overbrace{b+wd}^{*}\overbrace{a+wc}^{-*}\overset{*}{c}} = \overbrace{1-w\overset{*}{w}}^{-1}\,\underbrace{w + \overbrace{a+wc}\overset{*}{c} - \overbrace{b+wd}\overbrace{b+wd}^{*}\overbrace{a+wc}^{-*}\overset{*}{c}}$$

$$= w^{w}\,\overbrace{1-w\overset{*}{w}}^{-1}\,\underbrace{\overbrace{a+wc}\overbrace{a+wc}^{*} - \overbrace{b+wd}\overbrace{b+wd}^{*}}_{=\,1-w\overset{*}{w}}\,\underbrace{\overbrace{a+wc}^{-*}\overset{*}{c}}_{=\,0\,\cdot\,{}_{\underline{w}}{}^{*}\underline{g}}$$

$$z\frac{a \mid b}{c \mid d} = \underbrace{a+zc}_{-1}\underbrace{b+zd}$$

$$z \bowtie \frac{a \mid b}{c \mid d} = b + zd - az - zcz$$

$$\gamma = \frac{a \mid b}{c \mid d}$$

$$\gamma^{*} = \frac{a^{*} \mid c^{*}}{b^{*} \mid d^{*}}$$

$$0 \cdot \gamma^{*} = c^{*} = 0 \Leftrightarrow c = 0$$

$$\gamma = \frac{a \mid b}{0 \mid d}$$

$$w\,{}_{\underline{-}}{}^{z}\underline{\gamma} = wd - aw = w\frac{a \mid 0}{0 \mid d}$$

$$ {}^{z}_{-}\gamma^{*} = \left.\begin{array}{c|c} a^{*} & 0 \\ \hline 0 & d^{*} \end{array}\right. \in \mathfrak{k}^{\mathbb{C}}_{+} $$