$$[illegible]' \in \mathbb{C}_{2^{n|n}} \times \mathbb{C}^{n}$$

$$\mathbb{C}_{2^{n|n}} \rightleftarrows \mathbb{C}_{2^{n|n}}$$

$$[illegible] \longrightarrow {}^{2^{n|n}}\mathbb{C}^{\mathsf{C}}_{2^{n|n}}$$

$$[illegible]' = \begin{cases} [illegible] \\ [illegible] \end{cases} \quad : \quad {}_{I}\delta^{J} = \begin{cases} [illegible] \\ [illegible] \end{cases}$$

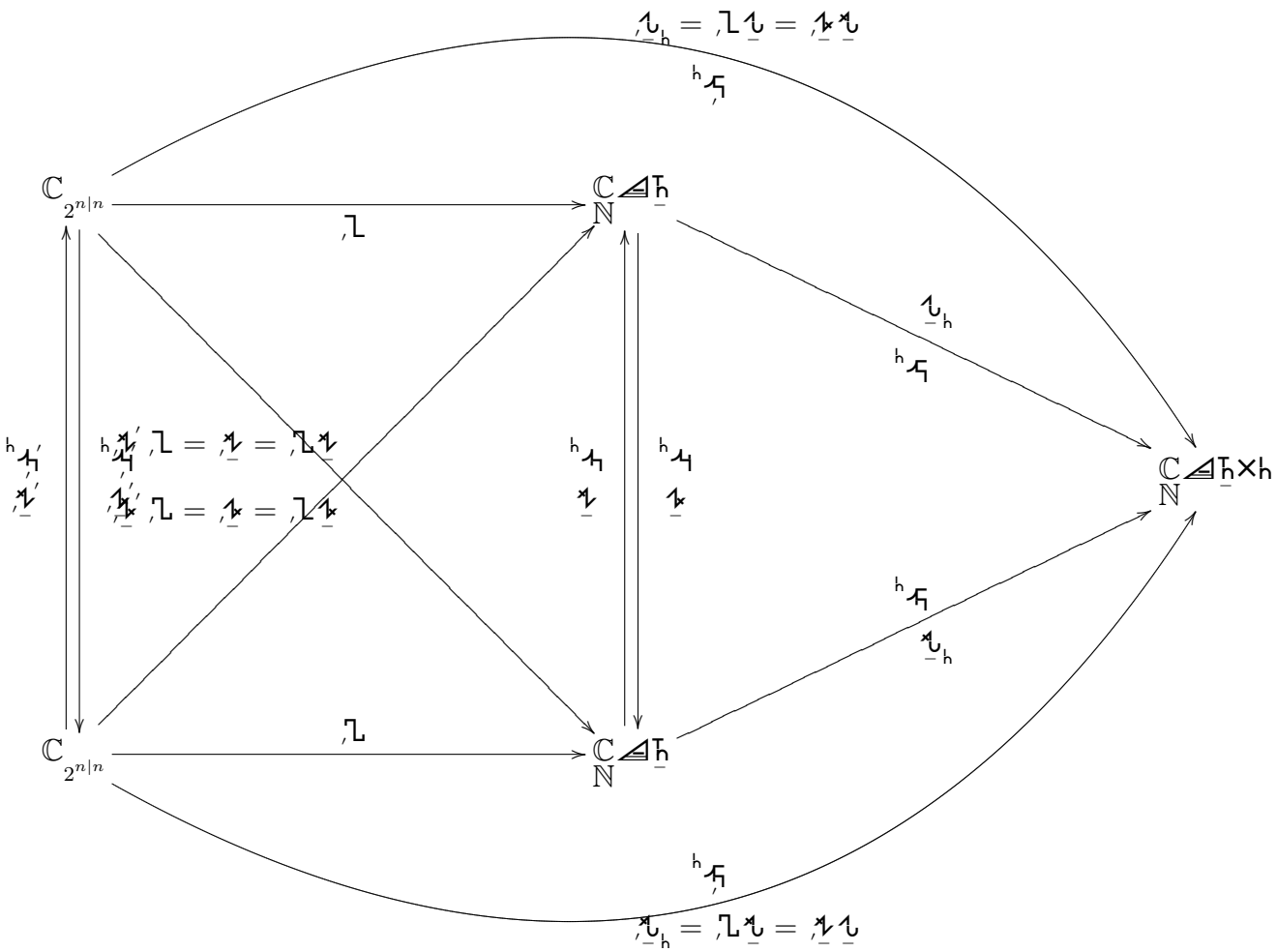
$$[illegible]' = \begin{cases} [illegible] \\ [illegible] \end{cases} \quad : \quad {}_{M}\delta^{N} = \begin{cases} [illegible] \\ [illegible] \end{cases}$$

$$\mathbb{C}_{2^{n|n}} \longrightarrow \; : \; {}_{2^{p'q}}\mathbb{C}^{2^{p'q}}$$

$$\begin{cases} [illegible]_{MN} = [illegible]\,\eta\,[illegible] = [illegible]\,{}_{IJ}\eta\,[illegible] \\ [illegible] = [illegible]\,{}_{IJ}\eta\,{}_{N}[illegible] \end{cases}$$

$$[illegible]^{I} \times [illegible]^{J} = [illegible]^{I}\,{}_{IJ}\eta\,[illegible]^{J} = [illegible]^{I}\,{}_{IJ}\eta\,[illegible]^{J}$$

$$[illegible]' \times [illegible]' = [illegible] = \begin{cases} [illegible] = [illegible]\,\eta\,[illegible] = [illegible]^{\mu}[illegible]^{\nu}[illegible]_{\mu\nu} \\ [illegible] = [illegible]\,\eta\,[illegible] = [illegible]^{\mu}{}_{\mu}[illegible]^{\nu}[illegible]^{\nu} \end{cases}$$



$$\mathbb{C}_{2^{n|n}} \qquad \mathbb{C}^{\mathbb{N}} \qquad \mathbb{C}^{\mathbb{N}\times\mathbb{N}}$$

$$\mathbb{C}_{2^{n|n}} \qquad \mathbb{C}^{\mathbb{N}}$$

$$\mathbb{C}_{2^{n|n}} \qquad \mathbb{C}^{\mathbb{N}}$$

$$\mathbb{C}_{2^{n|n}}$$

$$\mathbb{C}_{2^{n|n}}$$

$$\mathbb{C}^{\mathbb{N}}$$

$$\mathbb{C}^{\mathbb{N}}$$

$$\mathbb{C}^{\mathbb{N}\times\mathbb{N}}$$

$$\mathbb{C}^{\mathbb{N}\times\mathbb{N}}$$

$$\mathbb{C}^{\mathbb{N}}$$

$$\

$\mathbb{C}_{2^{n|n}}$
$\mathbb{C}^{\mathbb{N}}$
$\mathbb{C}^{\mathbb{N}\times h}$

$$\mathbf{x}_{k+1} = \begin{cases} \underbrace{\mathbf{x}_{k+1}^{-}}_{\text{predicted}} + \mathbf{K}_{k+1}\left(\mathbf{z}_{k+1} - \mathbf{H}\,\mathbf{x}_{k+1}^{-}\right) \\ \underbrace{\mathbf{x}_{k+1}^{-}}_{\text{predicted}} + \mathbf{K}_{k+1}\left(\mathbf{z}_{k+1} - \mathbf{H}\,\mathbf{x}_{k+1}^{-}\right) \end{cases} \quad : \quad \mathbf{K}_{k+1} = \begin{cases} \mathbf{P}_{k+1}^{-}\mathbf{H}^{T}\left(\mathbf{H}\,\mathbf{P}_{k+1}^{-}\mathbf{H}^{T} + \mathbf{R}\right)^{-1} \\ \mathbf{P}_{k+1}^{-}\mathbf{H}^{T}\left(\mathbf{H}\,\mathbf{P}_{k+1}^{-}\mathbf{H}^{T} + \mathbf{R}\right)^{-1} \end{cases}$$

$$\begin{cases} \mathbf{x}_{k+1} &= \underbrace{\mathbf{x}_{k+1}^{-}}_{\text{predicted}} + \mathbf{K}_{k+1}\left(\mathbf{z}_{k+1} - \mathbf{H}\,\mathbf{x}_{k+1}^{-}\right) = \underbrace{\mathbf{x}_{k+1}^{-}}_{\text{predicted}} + \mathbf{K}_{k+1}\,\mathbf{v}_{k+1} \\ \mathbf{P}_{k+1} &= \underbrace{\mathbf{P}_{k+1}^{-}}_{\text{predicted}} - \mathbf{K}_{k+1}\,\mathbf{H}\,\mathbf{P}_{k+1}^{-} = \underbrace{\mathbf{P}_{k+1}^{-}}_{\text{predicted}} - \mathbf{K}_{k+1}\,\mathbf{S}_{k+1}\,\mathbf{K}_{k+1}^{T} \end{cases}$$

$$\begin{cases} \mathbf{x}_{k+1} &= \mathbf{x}_{k+1}^{-} + \mathbf{K}_{k+1}\left(\mathbf{z}_{k+1} - \mathbf{H}\,\mathbf{x}_{k+1}^{-}\right) = \mathbf{x}_{k+1}^{-} + \mathbf{K}_{k+1}\,\mathbf{v}_{k+1} \\ \mathbf{P}_{k+1} &= \mathbf{P}_{k+1}^{-} - \mathbf{K}_{k+1}\,\mathbf{H}\,\mathbf{P}_{k+1}^{-} = \mathbf{P}_{k+1}^{-} - \mathbf{K}_{k+1}\,\mathbf{S}_{k+1}\,\mathbf{K}_{k+1}^{T} \end{cases}$$

$$\mathbf{y}_{k+1} = \begin{cases} \underbrace{\mathbf{y}_{k+1}^{-}}_{\text{predicted}} + \mathbf{K}_{k+1}\left(\mathbf{z}_{k+1} - \mathbf{H}\,\mathbf{y}_{k+1}^{-}\right) \\ \underbrace{\mathbf{y}_{k+1}^{-}}_{\text{predicted}} + \mathbf{K}_{k+1}\left(\mathbf{z}_{k+1} - \mathbf{H}\,\mathbf{y}_{k+1}^{-}\right) \end{cases} \quad : \quad \mathbf{K}_{k+1} = \begin{cases} \mathbf{Q}_{k+1}^{-}\mathbf{H}^{T}\left(\mathbf{H}\,\mathbf{Q}_{k+1}^{-}\mathbf{H}^{T} + \mathbf{R}\right)^{-1} \\ \mathbf{Q}_{k+1}^{-}\mathbf{H}^{T}\left(\mathbf{H}\,\mathbf{Q}_{k+1}^{-}\mathbf{H}^{T} + \mathbf{R}\right)^{-1} \end{cases}$$

$$\begin{cases} \mathbf{y}_{k+1} &= \underbrace{\mathbf{y}_{k+1}^{-}}_{\text{predicted}} + \mathbf{K}_{k+1}\left(\mathbf{z}_{k+1} - \mathbf{H}\,\mathbf{y}_{k+1}^{-}\right) \\ \mathbf{Q}_{k+1} &= \underbrace{\mathbf{Q}_{k+1}^{-}}_{\text{predicted}} - \mathbf{K}_{k+1}\,\mathbf{H}\,\mathbf{Q}_{k+1}^{-} \end{cases} \quad \begin{cases} \mathbf{y}_{k+1} &= \mathbf{y}_{k+1}^{-} + \mathbf{K}_{k+1}\left(\mathbf{z}_{k+1} - \mathbf{H}\,\mathbf{y}_{k+1}^{-}\right) \\ \mathbf{Q}_{k+1} &= \mathbf{Q}_{k+1}^{-} - \mathbf{K}_{k+1}\,\mathbf{H}\,\mathbf{Q}_{k+1}^{-} \end{cases}$$

$$\begin{cases} \mathbf{y}_{k+1} &= \underbrace{\mathbf{y}_{k+1}^{-}}_{\text{predicted}} + \mathbf{K}_{k+1}\,\mathbf{v}_{k+1} \\ \mathbf{Q}_{k+1} &= \underbrace{\mathbf{Q}_{k+1}^{-}}_{\text{predicted}} - \mathbf{K}_{k+1}\,\mathbf{S}_{k+1}\,\mathbf{K}_{k+1}^{T} \end{cases} \quad \begin{cases} \mathbf{y}_{k+1} &= \mathbf{y}_{k+1}^{-} + \mathbf{K}_{k+1}\,\mathbf{v}_{k+1} \\ \mathbf{Q}_{k+1} &= \mathbf{Q}_{k+1}^{-} - \mathbf{K}_{k+1}\,\mathbf{S}_{k+1}\,\mathbf{K}_{k+1}^{T} \end{cases}$$