$$
\mathscr{H} = \begin{pmatrix}
L_1 & L_2 & L_3 & L_4 & \cdots & L_p \\
L_2 & L_3 & L_4 & L_5 & \cdots & L_{p+1} \\
L_3 & L_4 & L_5 & L_6 & \cdots & L_{p+2} \\
L_4 & L_5 & L_6 & L_7 & \cdots & L_{p+3} \\
\vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\
L_q & L_{q+1} & L_{q+2} & L_{q+3} & \cdots & L_k
\end{pmatrix}
$$

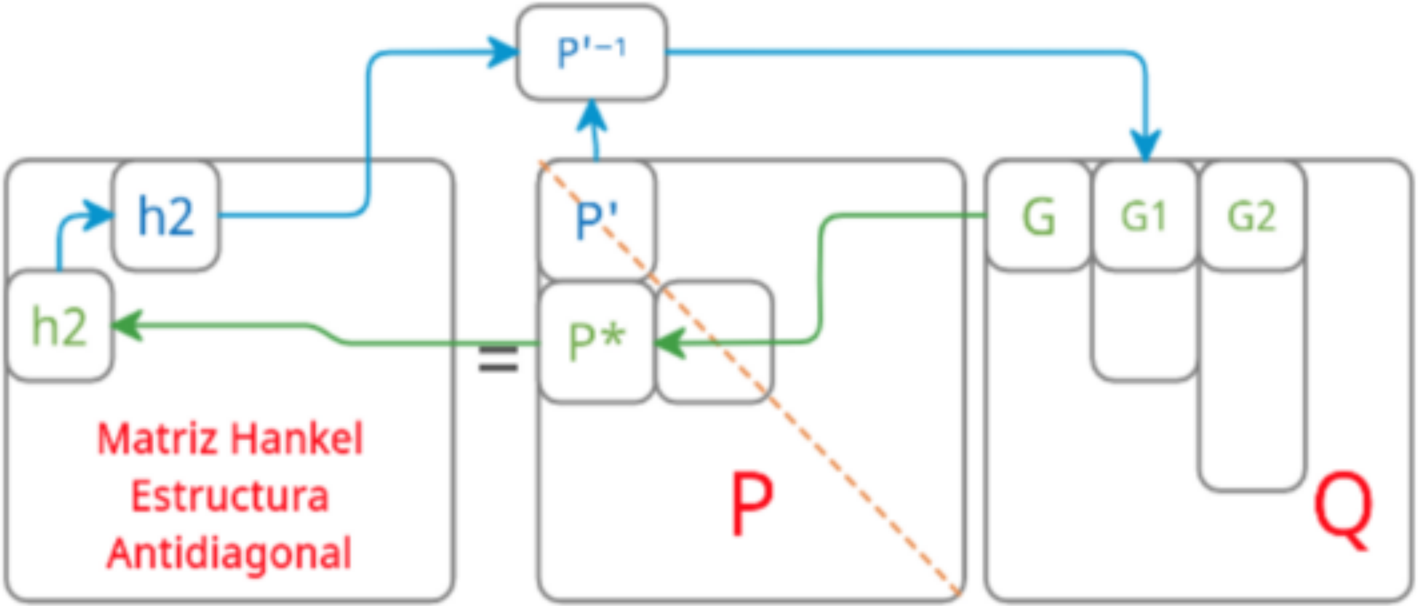
$$
\mathscr{H} = \sum_{i=1}^{n} \sigma_i \begin{pmatrix}
u_{i1} v_{i1} & \cdots & u_{i1} v_{i(\alpha\eta)} \\
\vdots & \ddots & \vdots \\
u_{i(\beta\mu)} v_{i1} & \cdots & u_{i(\beta\mu)} v_{i(\alpha\eta)}
\end{pmatrix}
$$

$$\mathscr{H} \approx \mathscr{H}_r = \sum_{i=1}^{r} \sigma_i \begin{pmatrix} u_{i1} v_{i1} & \cdots & u_{i1} v_{i(\alpha\eta)} \\ \vdots & \ddots & \vdots \\ u_{i(\beta\mu)} v_{i1} & \cdots & u_{i(\beta\mu)} v_{i(\alpha\eta)} \end{pmatrix}$$

$$\mathscr{H}_r = \begin{pmatrix} L_{1_{(1)}}(r) & L_{2_{(1)}}(r) & L_{3_{(1)}}(r) & L_{4_{(1)}}(r) & \cdots & L_{\alpha_{(1)}}(r) \\ L_{2_{(2)}}(r) & L_{3_{(2)}}(r) & L_{4_{(2)}}(r) & L_{5_{(2)}}(r) & \cdots & L_{\alpha+1_{(2)}}(r) \\ L_{3_{(3)}}(r) & L_{4_{(3)}}(r) & L_{5_{(3)}}(r) & L_{6_{(3)}}(r) & \cdots & L_{\alpha+2_{(3)}}(r) \\ L_{4_{(4)}}(r) & L_{5_{(4)}}(r) & L_{6_{(4)}}(r) & L_{7_{(4)}}(r) & \cdots & L_{\alpha+3_{(4)}}(r) \\ \vdots & \vdots & \vdots & \vdots & \ddots & \vdots \\ L_{\beta_{(\beta)}}(r) & L_{\beta+1_{(\beta)}}(r) & L_{\beta+2_{(\beta)}}(r) & L_{\beta+3_{(\beta)}}(r) & \cdots & L_{k_{(\beta)}}(r) \end{pmatrix}$$

Condiciones iniciales $i = 1$	Fórmulas de recursividad $i > 1$
$P(r)_{:,1} = \frac{1}{Q(r)_{i,i}}(\mathscr{H}_r)_{1:,1}$	$P(r)_{i:,i} = \frac{(\mathscr{H}_r)_{i:,i} - \sum_{k=1}^{i-1} P(r)_{i:k} Q(r)_{k,i}}{Q(r)_{i,i}}$
$Q(r)_{1,:} = (\mathscr{H}_r)_{1,:}$	$Q(r)_{i,i:} = (\mathscr{H}_r)_{i,i:} - \sum_{k=1}^{i-2} P(r)_{i,k} Q_{k,i:}$

$$\mathscr{H}_r = P(r)Q(r) = \begin{pmatrix} 1 & 0 & \cdots & 0 \\ p_{2,1} & 1 & \cdots & 0 \\ \vdots & \ddots & \ddots & \vdots \\ p_{\beta\mu,1} & \cdots & p_{\beta\mu,\beta\mu-1} & 1 \end{pmatrix} \begin{pmatrix} q_{11} & q_{12} & \cdots & q_{1,\alpha\eta} \\ 0 & q_{22} & \cdots & q_{2,\alpha\eta} \\ \vdots & \ddots & \ddots & \vdots \\ 0 & \cdots & 0 & q_{\beta\mu,\alpha\eta} \end{pmatrix}$$



$$F = (P')^{-1} P^* \qquad G = Q_{0:\mu,:} \qquad H = P'$$

$$
\begin{array}{ccc}
 & & \begin{array}{cccc} G_r & F_r G_r & \cdots & F_r^{\eta-1} G_r \\ \rightarrow & \rightarrow & \cdots & \end{array} \\
\begin{array}{c} H_r \\ H_r F_r \\ \vdots \\ H_r F^{\alpha-1} \end{array} & \begin{array}{c} \downarrow \\ \downarrow \\ \vdots \\ \end{array} \begin{pmatrix} P_{1,1} & 0 & \cdots & 0 \\ P_{2,1} & P_{2,2} & \cdots & 0 \\ \vdots & \ddots & \ddots & \vdots \\ P_{\beta,1} & \cdots & P_{\beta,\beta-1} & P_{\beta,\beta} \end{pmatrix} & \begin{pmatrix} Q_{11} & Q_{12} & \cdots & Q_{1,\alpha} \\ 0 & Q_{22} & \cdots & Q_{2,\alpha} \\ \vdots & \ddots & \ddots & \vdots \\ 0 & \cdots & 0 & Q_{\beta,\alpha} \end{pmatrix}
\end{array}
$$

$$
\begin{array}{cc}
 & \begin{array}{cccc} H_r G_r & H_r F_r G_r & \cdots & H_r F_r^{\eta-1} G_r \\ \rightarrow & \rightarrow & \cdots & \rightarrow \end{array} \\
\mathscr{H}_r = & \begin{pmatrix} L_1(r) & L_2(r) & \cdots & L_\alpha(r) \\ L_2(r) & L_3(r) & \cdots & L_{\alpha+1}(r) \\ \vdots & \vdots & \ddots & \vdots \\ L_\beta(r) & L_{\beta+1}(r) & \cdots & L_k(r) \end{pmatrix} \begin{array}{cc} & \\ \downarrow & H_r F_r^{\eta} G_r \\ \vdots & \vdots \\ \downarrow & H_r F^k G_r \end{array}
\end{array}
$$