

$$\begin{aligned}
\dot{y}_0 &= & ry_1 & -hy_0 \\
\dot{y}_i &= -ry_i & +ry_{i+1} & -hy_i & +hy_{i-1} \\
\dot{y}_N &= -ry_N & & & +hy_{N-1}
\end{aligned} \tag{1}$$