$$\mathbf{Q} = \begin{array}{c} \\ \text{H} \\ \text{S1} \\ \text{S2} \\ \text{DOC} \\ \text{DS} \end{array} \begin{array}{c} \begin{array}{ccccc} \text{H} & \text{S1} & \text{S2} & \text{DOC} & \text{DS} \end{array} \\ \begin{pmatrix} -(\texttt{r\_HS1}+\texttt{r\_HD}) & \texttt{r\_HS1} & 0 & \texttt{r\_HD} & 0 \\ \texttt{r\_S1H} & -(\texttt{r\_S1H}+\texttt{r\_S1S2}+\texttt{hr\_S1}\cdot\texttt{r\_HD}) & \texttt{r\_S1S2} & \texttt{r\_HD} & \texttt{hr\_S1}\cdot\texttt{r\_HD}-\texttt{r\_HD} \\ 0 & 0 & -(\texttt{hr\_S2}\cdot\texttt{r\_HD}) & \texttt{r\_HD} & \texttt{hr\_S2}\cdot\texttt{r\_HD}-\texttt{r\_HD} \\ 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 \end{pmatrix} \end{array}$$

$$\mathbf{Q} = \begin{array}{c} \\ \text{H} \\ \text{S1} \\ \text{S2} \\ \text{D} \\ \text{trDS} \end{array} \begin{array}{c} \begin{array}{ccccc} \text{H} & \text{S1} & \text{S2} & \text{D} & \text{trDS} \end{array} \\ \left(\begin{array}{cccc:c} -(\texttt{r\_HS1}+\texttt{r\_HD}) & \texttt{r\_HS1} & 0 & \texttt{r\_HD} & 0 \\ \texttt{r\_S1H} & -(\texttt{r\_S1H}+\texttt{r\_S1S2}+\texttt{hr\_S1}\cdot\texttt{r\_HD}) & \texttt{r\_S1S2} & \texttt{hr\_S1}\cdot\texttt{r\_HD} & \texttt{hr\_S1}\cdot\texttt{r\_HD}-\texttt{r\_HD} \\ 0 & 0 & -(\texttt{hr\_S2}\cdot\texttt{r\_HD}) & \texttt{hr\_S2}\cdot\texttt{r\_HD} & \texttt{hr\_S2}\cdot\texttt{r\_HD}-\texttt{r\_HD} \\ 0 & 0 & 0 & 0 & 0 \\ \hdashline 0 & 0 & 0 & 0 & 0 \end{array}\right) \end{array}$$