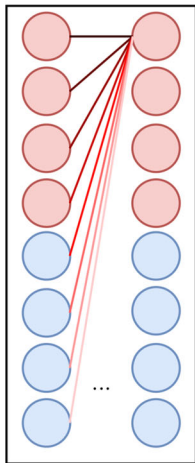
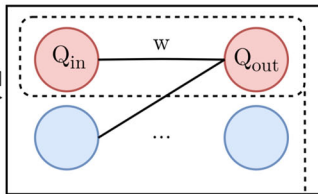


Real-valued layer



Quaternion-valued layer

\mathbb{R} to \mathbb{H}



With $w = w_r + w_x + w_y + w_z$

$Q_{in} = r_{in} + x_{in} + y_{in} + z_{in}$

$Q_{out} = r_{out} + x_{out} + y_{out} + z_{out}$

Hamilton product between w and Q_{in} to produce Q_{out}

