

$$\begin{array}{ccccccc}
& \xrightarrow{\partial_{q+2}} & C_{q+1} & \xrightarrow{\partial_{q+1}} & C_q & \xrightarrow{\partial_q} & C_{q-1} & \xrightarrow{\partial_{q-1}} & \dots \\
& \searrow^{h_{q+1}} & \downarrow & \searrow^{h_q} & \downarrow & \searrow^{h_{q-1}} & \downarrow & \searrow^{h_{q+2}} & \\
\dots & & & & & & & & \dots \\
& \swarrow_{g_{q+1}} & \downarrow & \swarrow_{g_q} & \downarrow & \swarrow_{g_{q-1}} & \downarrow & \swarrow_{g_{q-2}} & \\
& \xrightarrow{\delta_{q+2}} & D_{q+1} & \xrightarrow{\delta_{q+1}} & D_q & \xrightarrow{\delta_q} & D_{q-1} & \xrightarrow{\delta_{q-1}} & \dots
\end{array}$$

The diagram illustrates a commutative structure between two sequences of spaces, C and D , indexed by q . The top row represents the C -sequence: $\dots \rightarrow C_{q+1} \xrightarrow{\partial_{q+1}} C_q \xrightarrow{\partial_q} C_{q-1} \xrightarrow{\partial_{q-1}} \dots$. The bottom row represents the D -sequence: $\dots \rightarrow D_{q+1} \xrightarrow{\delta_{q+1}} D_q \xrightarrow{\delta_q} D_{q-1} \xrightarrow{\delta_{q-1}} \dots$. Vertical arrows connect corresponding terms: $C_{q+1} \rightarrow D_{q+1}$ (labeled g_{q+1} on the left), $C_q \rightarrow D_q$ (labeled g_q on the left), and $C_{q-1} \rightarrow D_{q-1}$ (labeled g_{q-1} on the left). Diagonal arrows represent boundary maps: $C_{q+1} \rightarrow D_q$ (labeled f_{q+1} on the right), $C_q \rightarrow D_{q-1}$ (labeled f_q on the right), and $C_{q-1} \rightarrow D_{q-2}$ (labeled f_{q-1} on the right). The horizontal arrows in the top row are labeled ∂_{q+2} , ∂_{q+1} , ∂_q , and ∂_{q-1} . The horizontal arrows in the bottom row are labeled δ_{q+2} , δ_{q+1} , δ_q , and δ_{q-1} . The vertical arrows are also labeled with h terms: h_{q+1} (above g_{q+1}), h_q (above g_q), and h_{q-1} (above g_{q-1}).