

$$\begin{array}{ccccccc}
 \text{Ker}(d) & \xrightarrow{\quad} & \text{Ker}(\delta) & \xrightarrow{\quad} & \text{Ker}(\partial) & \xrightarrow{\quad} & \\
 \downarrow & & \downarrow & & \downarrow & & \\
 A_1 & \xrightarrow{\varphi_1} & B_1 & \xrightarrow{\psi_1} & C_1 & \xrightarrow{\quad} & 0 \\
 \downarrow d & & \downarrow \delta & & \downarrow \partial & & \\
 0 \rightarrow A_0 & \xrightarrow{\varphi_0} & B_0 & \xrightarrow{\psi_0} & C_0 & & \\
 \downarrow & & \downarrow & & \downarrow & & \\
 & \rightarrow & \text{Koker}(d) & \rightarrow & \text{Koker}(\delta) & \rightarrow & \text{Koker}(\partial)
 \end{array}$$

The diagram illustrates a commutative structure involving kernels and cokernels of a sequence of maps. The top row shows the kernels of the maps d , δ , and ∂ , connected by solid red arrows. The bottom row shows the cokernels of the same maps, also connected by solid red arrows. The middle section consists of two rows of objects: A_1, B_1, C_1 in the top and A_0, B_0, C_0 in the bottom. Blue arrows represent the maps between these objects: $\varphi_1: A_1 \rightarrow B_1$, $\psi_1: B_1 \rightarrow C_1$, $d: A_1 \rightarrow A_0$, $\delta: B_1 \rightarrow B_0$, $\partial: C_1 \rightarrow C_0$, $\varphi_0: A_0 \rightarrow B_0$, and $\psi_0: B_0 \rightarrow C_0$. A blue arrow also points from 0 to A_0 . Dashed red arrows indicate the commutativity of the diagram, showing that the kernel of the map from A_1 to $\text{Koker}(d)$ is the same as the kernel of the map from A_1 to A_0 , and similarly for the other maps.