

$$\begin{array}{ccc}
 A^n & \xrightarrow{F_n(f)} & A \\
 (\varphi, \varphi, \dots, \varphi) \downarrow & & \downarrow \varphi \\
 B^n & \xrightarrow{G_n(f)} & B \\
 (\psi, \psi, \dots, \psi) \downarrow & & \downarrow \psi \\
 C^n & \xrightarrow{H_n(G_n(f))} & C
 \end{array}$$