

$$\begin{array}{ccccccc}
 E & & & & & & \\
 & \swarrow \scriptstyle \psi & & \searrow \scriptstyle g & & & \\
 & & A \times_B N & \xrightarrow{\scriptstyle \varphi} & N & \twoheadrightarrow & \text{cok}(\varphi) \longrightarrow 0 \\
 & & \downarrow & & \downarrow & & \\
 & & A & \twoheadrightarrow & B & &
 \end{array}$$