$$\begin{array}{c} \mathscr{A}^{\mathbb{N}^{\mathrm{op}}} \xrightarrow{F:=(X,-)} \mathbf{Ab}^{\mathbb{N}^{\mathrm{op}}} \\ G:=\varprojlim \bigvee_{\mathscr{A}} & \xrightarrow{F:=(X,-)} \mathbf{Ab} \end{array}$$