

$$\begin{array}{c} X \\ S \\ k \\ f \\ X \rightarrow \\ S \\ F \\ G \\ O_X \\ O_S \\ \xi \in^1_X \\ (F,G) \\ ex- \\ ten- \\ sions \\ GEF, \end{array}$$

$$\begin{array}{c} F \\ G \\ H^0(S,O_S) \\ ? \\ H^0(S,O_S) \\ 1 \end{array}$$

$$\begin{array}{c} a \in \\ H^0(S,O_S) \\ EaF \end{array}$$

$$\begin{array}{c} S \\ V \\ X \times_S \\ V \\ F,G \\ S = \\ (k) \\ ? \\ \phi X_1 \rightarrow \\ X_2 \\ F_1 \\ F_2 \\ O_{X_1} \\ ? \\ E_2^{p,q} = \\ H^p(X_2,R^q\phi_*F_1) \Rightarrow \\ H^{p+q}(X_1,F_1) \\ E_2^{p,q} = \\ H^p(X_1,{}^q(F_1,F_2)) \Rightarrow^{p+q} \\ (F_1,F_2) \\ 0 \rightarrow H^1(X_2,\phi F_1) \rightarrow H^1(X_1,F_1) \rightarrow H^0(X_2,R^1\phi F_1) \\ (1) \\ 0 \rightarrow H^1(X_2,(F_1,F_2)) \rightarrow^1(F_1,F_2) \rightarrow H^0(X_2,{}^1(F_1,F_2)). \\ (2) \\ F \\ G \\ V({}_X^1(F,G)) \\ \xi_{\text{univ}}: {}_1GE_1F \\ X \times_k \\ V \\ \xi \\ Y \\ {}_k(Y,V) \rightarrow^1_{X_Y}(F_Y,G_Y) \\ \alpha \mapsto \\ ({}_X \times \alpha) \xi_{\text{univ}} \\ Y \\ \xi_{\text{univ}} \\ {}_k((k),V) \sim^1_X(F,G) \\ {}_k(Y,V) \simeq \\ H^0(O_Y \otimes^1 \\ (F,G)) \\ \widetilde{H}^0(s_2^*H^1((F,G))) \\ \widetilde{H}^0(R_{2,*}^1({}_1^*(G,F))) \\ \widetilde{H}^0(R_{2,*}^1((F_Y,G_Y))) \\ \widetilde{H}^1((G_Y,F_Y)) \\ \simeq^1_{X_Y} \\ (F_Y,G_Y). \\ \in_k \\ (V,V) \\ {}^1_{X_Y}(F_Y,G_Y) \\ ({}_X^1(F,G)) \\ F \\ G \\ ? \\ F \\ G \\ i \\ th \\ rel- \\ tive \end{array}$$