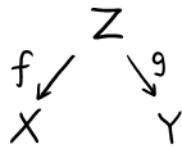


Eine Woche, ein Beispiel

6.2. Roof structure for moduli of pairs

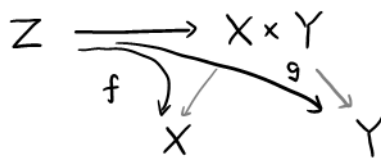
Setting \mathcal{C} : category e.g. \mathbf{Top}

Def A roof / correspondence in \mathcal{C} is a diagram



$X, Y, Z \in \mathcal{C}$
 $f \in \text{Mor}_{\mathcal{C}}(Z, X)$, $g \in \text{Mor}_{\mathcal{C}}(Z, Y)$

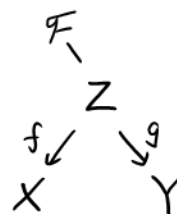
"Equivalently", this can be written as
when $X \times Y \exists$



Roofs are used in many different areas.

- E.g.
- construct derived category by "quotienting out quasi-isos"
 - define $\text{Corr}(C, E)$ in abstract 6-fctor formalism
 - define Fourier-Mukai transformation

$$\Phi_F = g_! \circ (\mathcal{F} \otimes -) \circ f^*$$



- ???

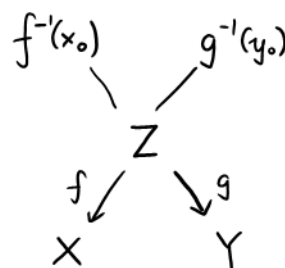
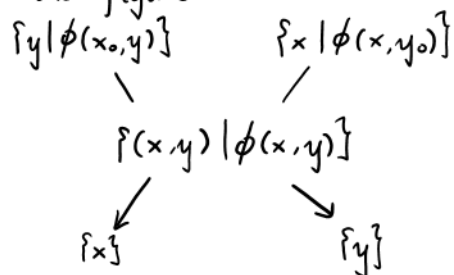
In most cases, roofs are used in understanding the moduli of pairs:

E.g.

$$\begin{aligned} X &= \{x\text{'s}\} \\ Y &= \{y\text{'s}\} \\ Z &= \{(x, y) \in X \times Y \mid \phi(x, y) = \text{True}\} \end{aligned}$$

$$\phi: X \times Y \longrightarrow \{0, 1\}^{\text{True}}$$

Then the figure



presents many moduli spaces in a clear way.

E.g., one can describe Z by stratifications through f and g .