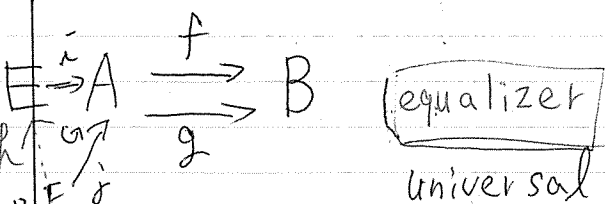
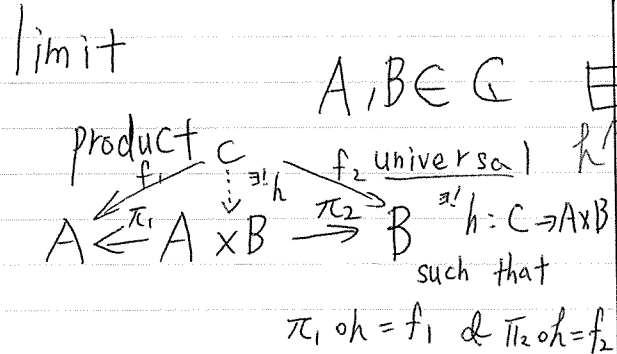


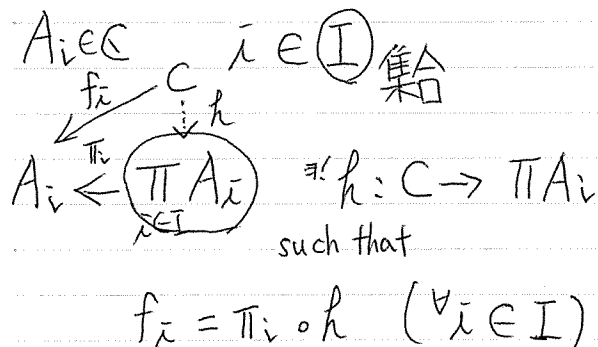
2017年度 数理科学III

著者	西村 泰一
著者別名	Nishimura Hirokazu
内容記述	数理科学IIIA (春学期) 数理科学IIIB (秋学期)
発行年	2017
URL	http://hdl.handle.net/2241/00145902

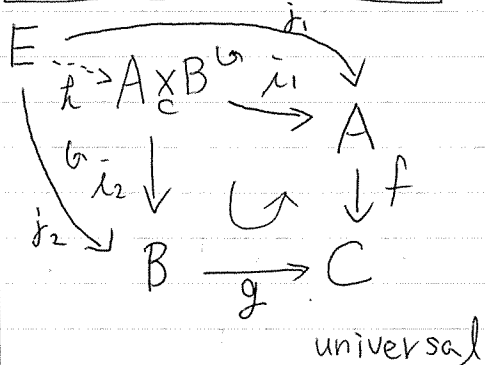
$f, g, A, B \in \mathcal{C}$



$f \circ i_1 = g \circ i_2 \Rightarrow \exists! h: E \rightarrow C$
 such that $i_1 \circ h = j_1$ & $i_2 \circ h = j_2$

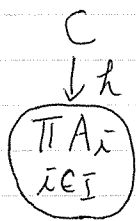


pullback (引き戻し)



$f \circ j_1 = g \circ j_2 \Rightarrow \exists! k: E \rightarrow A \times B$ such that $i_1 \circ k = j_1$ & $i_2 \circ k = j_2$

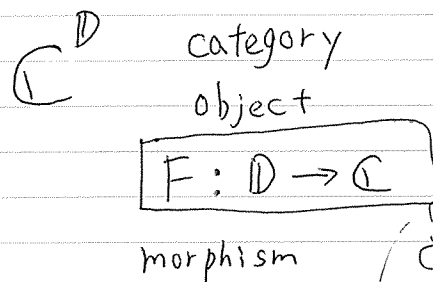
$I = \emptyset$ のとき



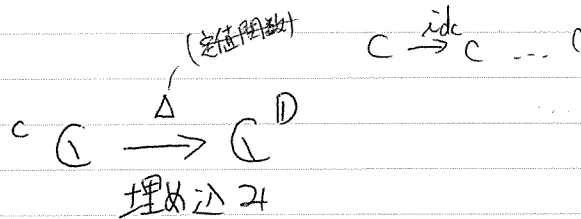
terminal object
 { 集合と写像の category }
 { * }

線型空間と線型写像の category
 0次元

limit



\mathcal{C} 中の D -diagram
 D -図式



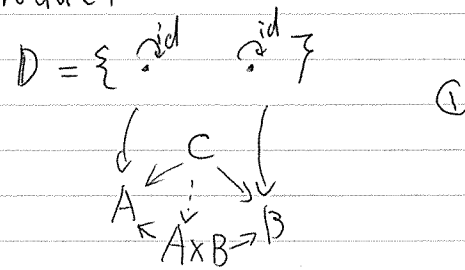
C_1
 $f \downarrow$
 C_2

complete

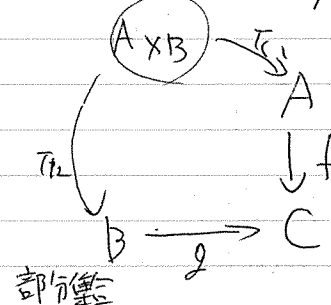
(任意の \mathcal{C} -diagram
 に Δ limit が存在する)

有限の object, morphism
 Δ limit が存在する
 finitely complete

product



集合と写像の category



$\{(a, b) \in A \times B \mid f(a) = g(b)\}$

$A \times B \rightarrow C$
 $(a, b) \rightarrow a \rightarrow f(a)$

$(a, b) \rightarrow b \rightarrow g(b)$

$E \rightarrow A \xrightarrow{f} B$

$E = \{a \in A \mid f(a) = g(a)\}$