StableApply

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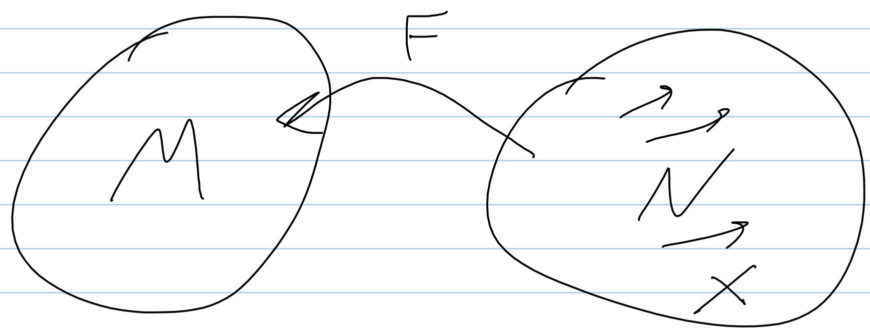
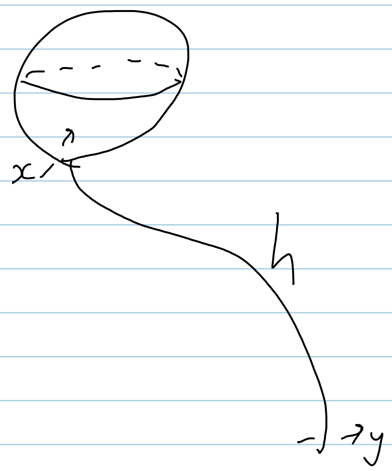
9:44 AM

$$A_y^{hx}(\beta) = \beta /\!/ . \; x \mapsto e^{ad(h)}(y)$$

There must be a simple precedent for that — "writing a map using the target coordinates"





I still need a better story.

Another place where a "StableApply" occurs is when solving ODE's !

$$A_y^{hx}(\beta) = \beta /\!/ . \; \underbrace{x \mapsto e^{ad(h)}(y)}_{C_y^{hx} = C} = C^{\infty}\beta =$$

$$= \sum^{\infty} A^n \beta$$

$$= \sum_{n=1} A^n \beta$$

with $A\alpha = \alpha /. \; x \longmapsto y + \ell$ $\int_0^y$

$$C^\infty - 1 = \lim C^n - 1 = \lim (1-C)\sum^n C^k$$

$$= 1 - C \frac{1}{1-C}$$

$C = A + B$ with $BA = 0$ & $A^2 = A$

$$(A+B)^n = AAA\ldots BBB = B^n + \sum_{k=1}^{n} AB^k$$

as $n \to \infty$, $B^n \longrightarrow 0$ so this is

$$\longrightarrow \sum_{k=1}^{\infty} AB^k = A\frac{B}{1-B}$$

In our case,

$$A\beta = \beta /. \; x \longrightarrow y$$

$$B\beta = \left(\beta /. \; x \to e^{ad(h)}(y)\right) - A\beta$$

$A\frac{B}{1-B}\beta = \gamma \Rightarrow$ nothing.

$\sum a^n = e^x$ $\qquad \frac{1}{1-a} = e^x$

$1-a = e^{-x}$ $\qquad a = 1 - e^{-x}$

$$A_x^{hx}(\beta) = \beta \,//\, x \mapsto e^{ad(h)}(y) \,/\, y \mapsto x$$

$$\stackrel{?}{=} \beta \,//\, x \mapsto x - e^{-ad(h)}(x) \quad \times$$

$$A_y^{hx}(\beta) = \beta \,//\, \underbrace{x \mapsto e^{ad(h)}(y)}_{C_y^{hx} = C}$$

$$= \sum_{k=0}^{\infty} \left((C^k - C^{k-1})\beta \,/\, x \mapsto y \right)$$