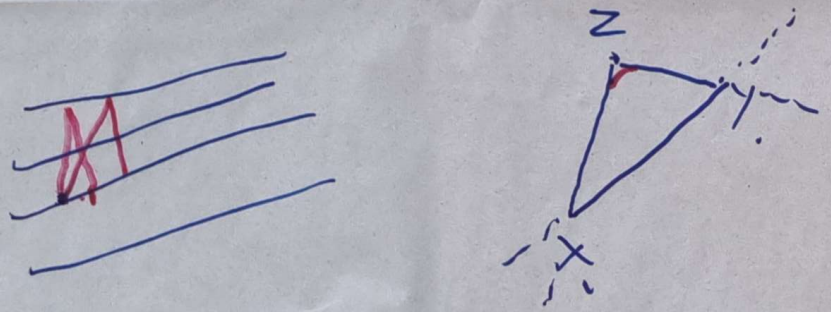
(25)

ABSZOLÚT IDŐ

A1) KÉT TAL. UA a/é időtart

A2) AKÁRMILYEN IGÖRUTAS GYORSASÁG

A1) $\Rightarrow \exists!\ \tau : M \to \mathbb{R}$ LIN. $\tau|_{T^{\rightarrow}} = P$



$P(y-x) = P(z-x) + P(y-z)$

$\alpha \qquad\qquad \alpha \qquad\qquad \alpha$

$\alpha\,(y-z)+(z-x)$

A2) $\Rightarrow \vec{T} = \{x \mid \tau(x) > 0\}$

$x \in \vec{T} \Rightarrow \tau(x) > 0$

$\tau(x) > 0 \Rightarrow x \in \vec{T}$

k26

$$S := \{ q \in M \mid \tau(q) = 0 \}$$

abszolút térszerű

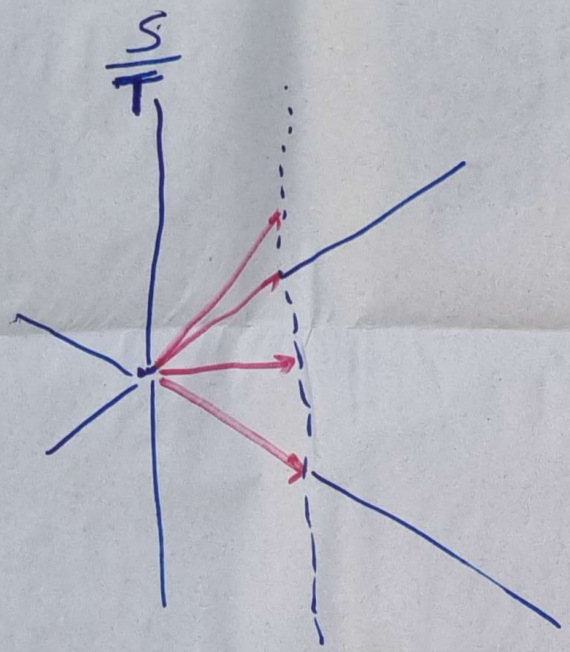
$$V(1) := \left\{ \frac{x}{P(x)} \;\middle|\; x \in T^{\rightarrow} \right\} \quad P\left(\frac{x}{P(x)}\right) = \frac{P(x)}{P(x)} = 1$$

$$\tau(u_1) - \tau(u_2) = 0$$

$$\tau(u_1 - u_2) = 0$$

$$= \left\{ u \in \frac{M}{T} \;\middle|\; \tau(u) = 1 \right\}$$

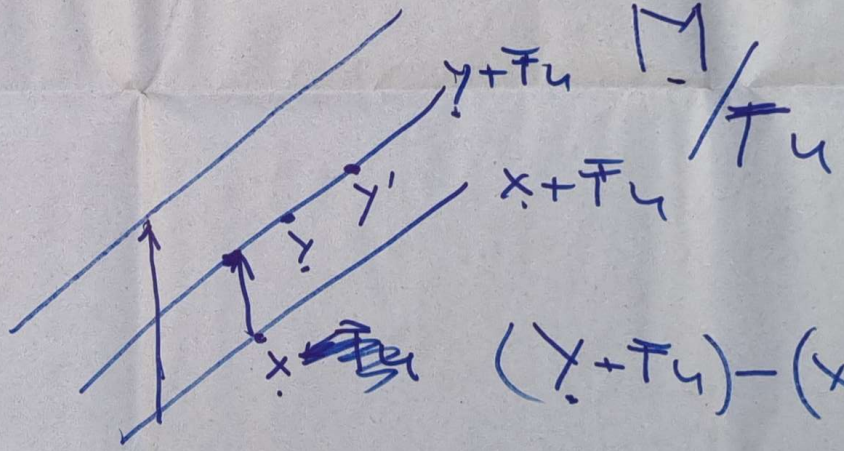
AFFIN ALTÉR $\frac{S}{T}$ faktor



Normális: $l_u(u,u') = l_{u'}(u,u)$

u, u' $\quad M/T_u \quad M/T_{u'}$

$M/T_u \equiv S$



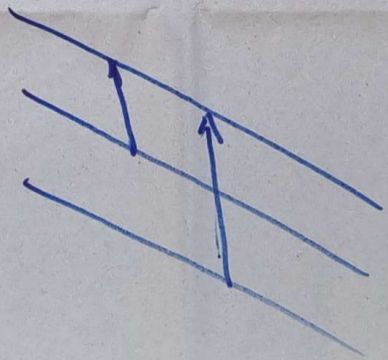
M_-/T_u

$(y+T_u)-(x+T_u) :=$

$(y-x)+T_u$

x'

$M/T_{u'} \equiv S$



u'

K28

Különböző u, u'
$u \neq u'$

u-tér $\neq$ u'-tér

$B_{u'u} := u'$

$B_{u'u} q = q$ HA $q \in S$

AHINTÉR S-FÖLÖTT

$B_{u'u}[\vec{T}] = \vec{T}$

$\tau(x) > 0 \Rightarrow \tau(B_{u'u} x) > 0$

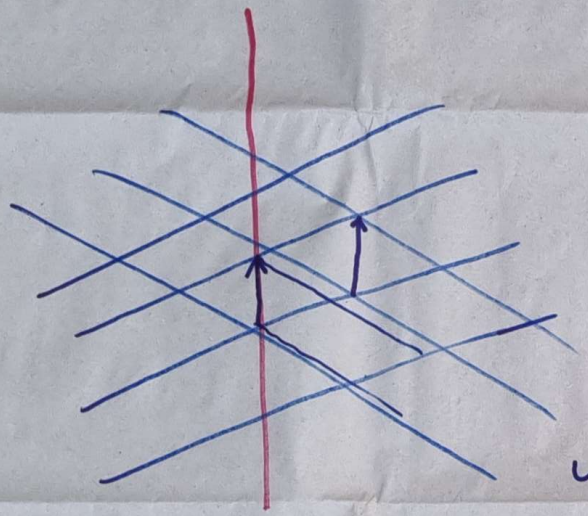
$b_{u'}(B_{u'u}x, B_{u'u}y) = b_u(x,y)$

$q_1 \in S \quad q_2 \in S$

$\Rightarrow \exists! \, h : S \times S \to \mathbb{K}$

$b_{u'}|_{S\times S} = b_u|_{S\times S} = h$

ABSZ. IDŐPONTOK



$\mathbb{R}^4 := M$

$\mathbb{R}^4 := M$ $\quad T := \mathbb{R}$ $\quad L := \mathbb{R}$

ARITMETIKAI

$0 \in M$

e_0, e_1, e_2, e_3 $\quad m \in L^+$

$\tau(e_0) > 0$ $\quad S$

$SET^+ \quad S = \{0, q_1, q_2, q_3\}$

$h \quad V(1) = (1, v_1, v_2, v_3)$

$\vec{T} := \{x \mid x_0 > 0\}$

$\tilde{\tau}(x) := x_0$

$L : M \to M$ AFFIN BIJ. $L([T]) = [LT]$

NYÍLIRÁNYÍTÁS

Noether transf.

$\tau(Lx) = \tau(x)$ $h(Lq_1, Lq_2) = h(q_1, q_2)$

$\tau(Lx) = \pm\tau(x)$

$O \in M$

GALILEI TRANSZF.

$\{L \in \mathrm{Noth} \mid L(O) = O\}$ IZOMORF GAL.

$\forall u \in V(4)$ $\{L \in GAL \mid Lu = u\}$ $\cong$ KISCSOP.

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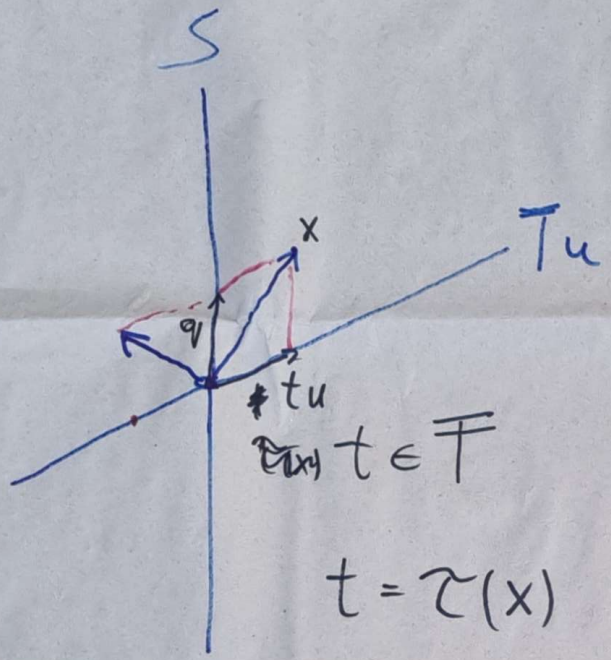
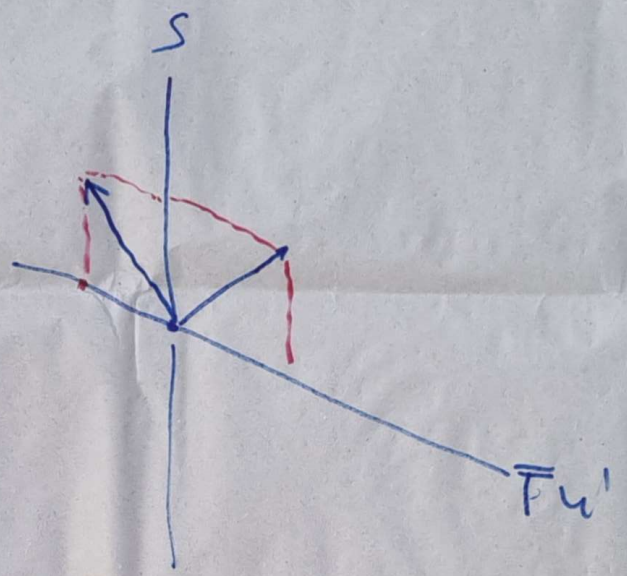
M



$t \in \mp$

$t = \tau(x)$

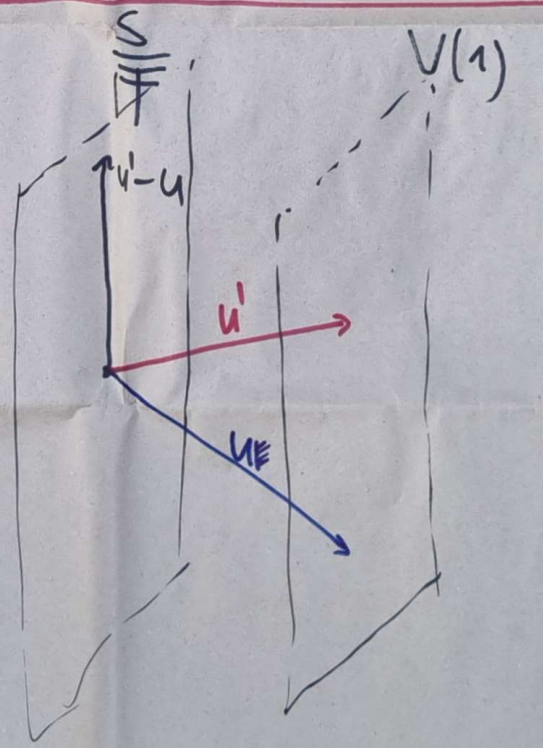


$\pi_{u\mp} = 1 - u \otimes \tau$

$\pi_u(x) = x - u(\underbrace{\tau(x)}_{t})$

$B_{u',u} = 1 + (u'-u) \otimes \tau$

$\frac{M}{\mp}$



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