S35

L1) ∀ EGYENES L2) AK. TALÁN
EGYENES

L3) U.A. PÁLYA
U.A. IRÁNY GYORSABB

L4) — ‖ — TETSZ. MEGKÖZELÍTHETŐ

⇒ UGYANOLYAN GYORS KÉT FÉNYJEL

⇒

L5 KÖRUTAS GYORSASÁG =: c SYNGE

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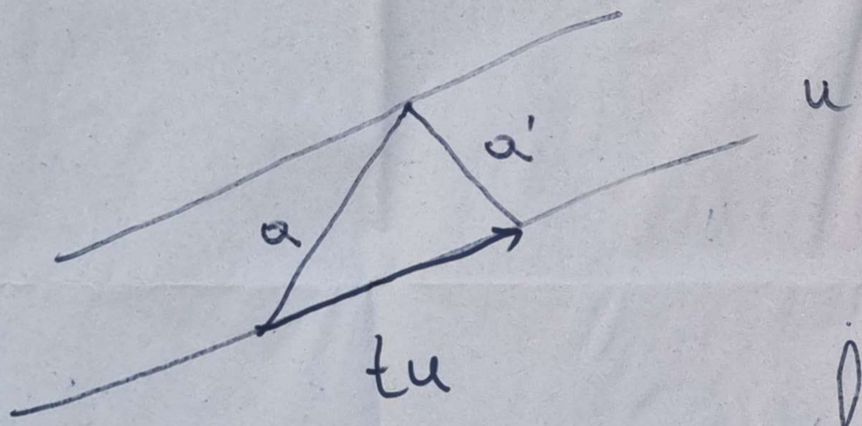
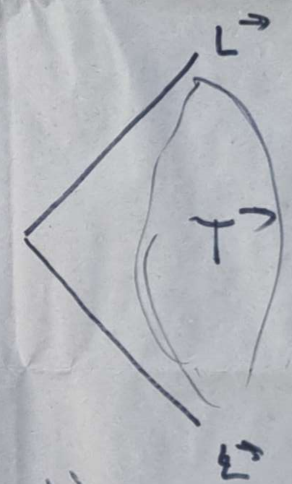
$c=1$

FÉNY-JÖVŐSZERŰ $L^{\to} = \partial T^{\to} \setminus \{0\}$





$$b_u(a,a) + b_u(a',a')$$
$$\vee \qquad\qquad \vee$$
$$0 \qquad\qquad 0$$

$$t = \sqrt{b_u(a,a)} + \sqrt{b_u(a',a')}$$

$a_1 \dots a_n \in L^{\to}$ $\qquad$ $\cancel{t} = \sum_{k=1}^{n} \sqrt{b_u(a_k, a_k)}$

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$$tu = \sum_k a_k \Rightarrow t = \sum_k \sqrt{b_u(a_k, a_k)}$$

$$\sum_k \left(a_k - \sqrt{b_u(a_k, a_k)}\, u\right) = 0 \qquad n \geq 2$$

$$S_u := \left\{ a - \sqrt{b_u(a,a)}\, u \;\middle|\; a \in L^{\to} \right\} \cup \{0\} \subset M$$

$\dim S_u = 3$ $\quad b_u|_{S_u \times S_u}$ poz. def.

$$q := a - \sqrt{b_u(a,a)}\, u \qquad b_u(q,q) = b_u(a,a) > 0$$

$$a = q + \sqrt{b_u(q,q)}\, u$$

S_u T_u transzverzálisak

$x \in M$ $\quad$ $\tau_u(x)u$ $\quad$ $\tau_u : M \to T$

$\tau_u\left(a - \sqrt{\ell_u(a,a)}\,u\right) = 0$ $\quad$ $\boxed{\tau_u(u) = 1}$ $\quad \frac{M}{T} \to \mathbb{R}$

$\tau_u(a) = \sqrt{\ell_u(a,a)}$ ⊛ $\quad$ $\boxed{\tau_u(q) = 0}$ $\quad q \in S_u$

u' $\quad S_{u'}$ $\quad S_u \cap S_{u'}$

$$T(u' - \tau_u(u')u) \perp \quad \perp T(u - \tau_{u'}(u)u')$$

$$\underset{S_u}{\cap} \qquad \overset{S_{u'}}{\cup}$$

UA. HOSSZÚAK

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$q \in S_u \cap S_{u'}$ $\quad \pm q + \sqrt{b_{u'}(q,q)}\cdot u' \in L \Rightarrow$

$-q \in$

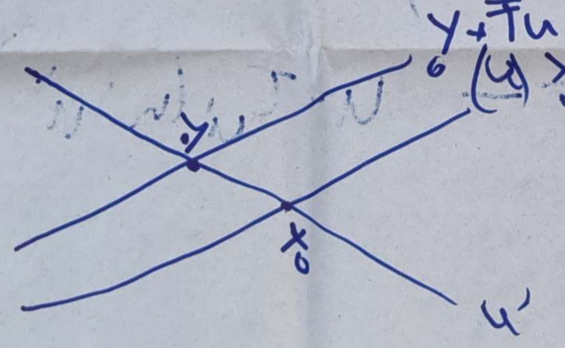
$\tau_u(\ldots) = \sqrt{b_{u'}(q,q)}\,\tau_u(u')$

$b_u(q,q) \pm 2\sqrt{b_{u'}(q,q)}\,b_u(q,u') + b_{u'}(q,q)\,b_u(u,u')$

$b_u(q, u' - \tau_u(u')u) = 0$ $\qquad t'(u' - \tau_u(u')u + \mathbb{R}u)$

$=: u^*$

$b_u(u' - \tau_u(u')u,\ u' - \tau_u(u')u) = b_u(u',u') \overset{!}{\doteq} b_{u'}(u,u)$



$(y_0 + \mathbb{R}u) - (x_0 + \mathbb{R}u) = \underbrace{(y_0 - x_0)}_{t'u'} + \mathbb{R}u$

$= t'(u^* + \mathbb{R}u) =$

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$$V(0)^{\to} := \left\{ w \in \frac{M}{T_w} \;\middle|\; T^{+} w \in L^{\to} \right\}$$

$$w - \tau_u(w)u = u' - \tau_u(u')u$$

$$\Rightarrow \exists \lambda > 0 \quad \lambda w - \tau_{u'}(\lambda w)u' = -\left(u - \tau_{u'}(u)u'\right)$$

$B_{u'u}\cancel{w} := u'$ $\qquad$ $B_{u'u}q = q$ ha $q \in S_u \cap S_{u'}$

$$\doteq$$

$$B_{u'u}\left(u' - \tau_u(u')u\right) = -\left(u - \tau_{u'}(u)u'\right)$$

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$$b_{u'}(\underbrace{B_{u'u}q}_{q}, \underbrace{B_{u'u}q}_{q}) = b_u(q,q) \qquad q \in S_u \cap S_{u'}$$

$$\tau_u(u') = \tau_{u'}(u)$$

$$q + \sqrt{b_u(q,q)}\, u' \qquad q \in S_u$$

$$\tau_u \,\Big|\, \sqrt{b_u(q,q)}\; \tau_u(u') \neq 0$$

$$b_u(\_\_\_, \_\_\_) = b_u(q,q) + 2\sqrt{b_u(q,q)}\, \cancel{b_u(q,u')} + b_u(q,q)\, b_u(u',u')$$

⊗ $$\cancel{b_u(q,q)}\, \tau_u(u')^2 = \cancel{b_u(q,q)} + \cancel{b_u(q,q)}\, b_u(u',u')$$

$$\boxed{\tau_u(u')^2 + b_u(u',u') = -1}$$

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$$x = q + tu + t'u'$$

$$q \in S_u \cap S_{u'}$$

$$b_u(x,x) = b_u(q,q) + \cancel{2tt'} \; t'^2 \, b_u(u'u')$$

$$\tau_u(x) = t + t'\tau_u(u')$$

$$-\tau_u(x)^2 + b_u(x,x) = b_u(q,q) + t^2 - \underset{b_u(u'u')}{(t')^2} - 2tt'\tau_u(u')$$

$$-\tau_{u'}(x)^2 + b_{u'}(x,x) = \_\_\_\_\_\_$$

$$\boxed{-\tau_u(x)\tau_u(y) + b_u(x,y) = -\tau_{u'}(x)\tau_{u'}(y) + b_{u'}(x,y)}$$