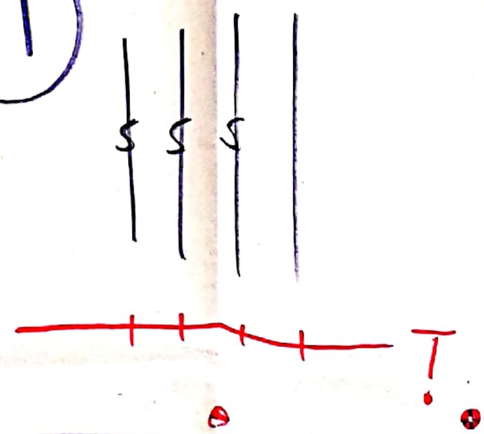
V19

M^*

$\pi^* \tau$

M

M



$V(1)$

$K : M \to M^*$

$(-V_u, A)$

$(-V, 0)$

$S^* = S$

$a \in \dfrac{S}{T\theta T}$

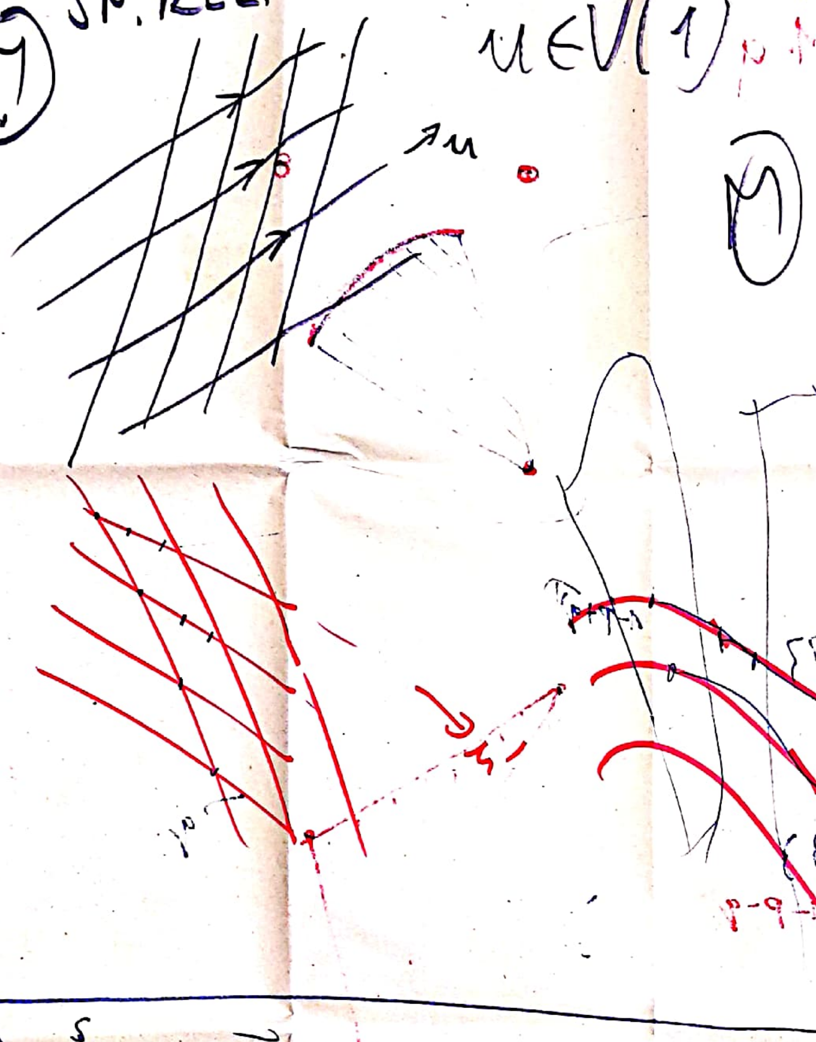
SP. REL.

M

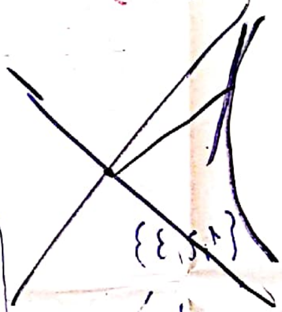
$u \in V(1)$

$\tau_u x = -u \cdot x$

$(-\omega_u, k)$



M

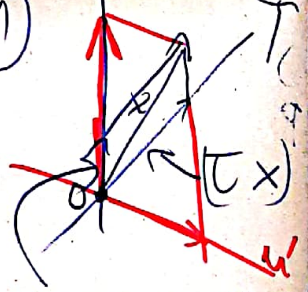


$i : S \to M$

$i^* : M^* \to S^*$

$i^* k = k|_S$

M



$\pi_u x = x - (\tau x) u$

$\xi_u := (\tau, \pi_u) : M \to T \times S$

$\eta_u := (\xi_u^{-1})^* : M^* \to T^* \times S^*$

$\eta_u k = (uk, k|_S)$

$\in M^* \quad ku \quad i^* k$

V19

V20

①

1 0 $1^\perp = 0$

x x $0^\perp = 1$

0 1 $x^\perp = x$

$x^\perp \wedge x \neq 0$

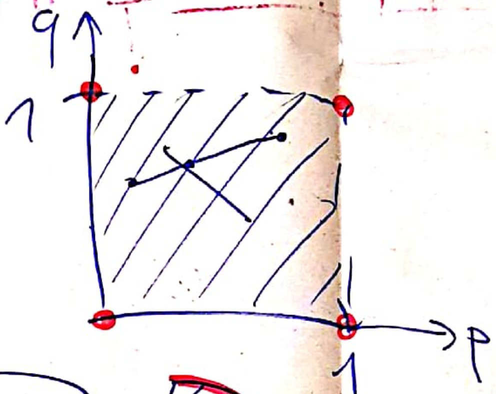
②

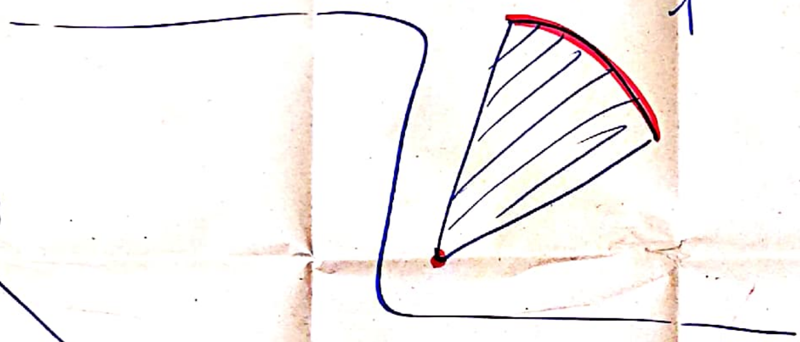
1 1

a $a^\perp$ b $b^\perp$

p $1-p$ q $1-q$

0 0



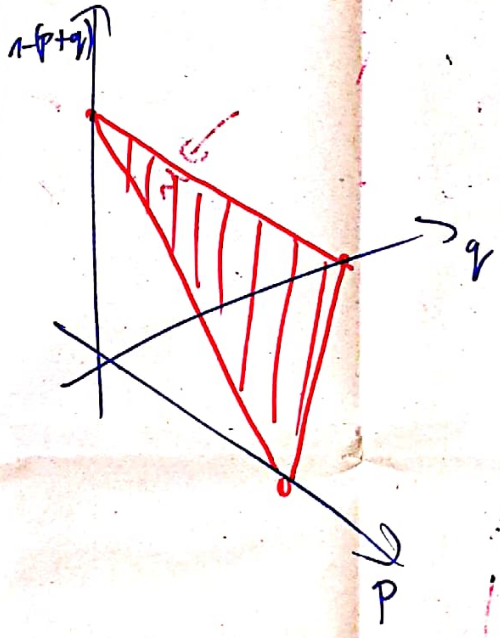


$\{1,2,3\}$

$\{2,3\}$ $1-p$ $\{1,3\}$ $1-q$ $\{1,2\}$ $p+q$

$\{1\}$ $p = P(\{1\})$ $\{2\}$ q $\{3\}$ $1-p-q$

$\emptyset$



V2 1)

$p : \mathcal{L} \to [0,1]$: $p(1) = 1$

: $a_n \; \forall n,m \in \mathbb{N} \quad a_n \leq a_m^\perp$

$$p\left(\bigvee_{n\in\mathbb{N}} a_n\right) = \sum_{n\in\mathbb{N}} p(a_n)$$

KÖV: $p(0)=0$

$a \leq b \Rightarrow p(a) \leq p(b)$

O.H. $b = a \vee (b \wedge a^\perp) \qquad p(b) = p(a) + p(b\wedge a^\perp)$

$a \perp (b \wedge a^\perp)$

$$b = b \wedge (\underbrace{a \vee a^\perp}_{1}) = (\underbrace{b \wedge a}_{a}) \vee (b \wedge a^\perp)$$

$A \quad \langle x|$

$\mathcal{H} \to \mathcal{H} \to$

$\langle x|A = \langle z|$

$f : X \to Y$

Graph $f = \{(x, f(x)) \mid x \in X\}$

Graph f

$\to A^* x := z$

$A : \mathcal{D}(A) \to \mathcal{H} \qquad$ Graph $A = \{(x, Ax) \mid x \in \mathcal{D}(A)\} \subseteq \mathcal{D}(A) \times \mathcal{H}$

ha Graph A zárt $\Leftrightarrow$ A zárt

$x_n \to x$

ha $\overline{\text{Graph} A} = \text{Graph} B$ $\qquad$ ha $Ax_n \to y$

B A lezártja $\quad B = \overline{A}$

① Riesz $\quad \mathcal{H} \to \mathbb{C}$ folyt. lin. $\quad \langle \psi | \cdot \rangle$

② folytonos

$B : \mathcal{D}(B) \to \mathbb{C} \qquad \mathcal{D}(B) \subseteq \mathcal{H}$ sűrű

$x \in \mathcal{H} \qquad (a_n)_{n\in\mathbb{N}} \quad a_n \in \mathcal{D}(B) \qquad x = \lim_n a_n$

$B(x) := \lim_{n\to\infty} B(a_n)$

$A : \mathcal{D}(A) \to \mathcal{H}$ lin.

sűrű

$\mathcal{D}(A^*) = \{x \in \mathcal{H} \mid \mathcal{D}(A) \to \mathcal{H}$

$y \mapsto \langle x, Ay \rangle$ folyt.$\}$

$\langle z, \cdot \rangle \qquad \langle z|y \rangle$

V22

Riesz* $\ell : \mathcal{H} \to \mathbb{C}$ folyt. konjugált lin. lek.

$\exists! \, x \in \mathcal{H}$, hogy $\ell = \langle \cdot, x \rangle$

$P \rightsquigarrow \mu^P_{\psi,\varphi}(E) = \langle \psi | P(E)\varphi \rangle \in \mathbb{C}$, $f : S \to \mathbb{C}$ mérhető

$D_f := \{ \varphi \in \mathcal{H} \mid f \in L^2(\mu^P_{\varphi,\varphi}) \} \subset \mathcal{H}$ sűrű lin. altér

$\mathcal{H} \times D_f \to \mathbb{C}$, $(\psi, \varphi) \mapsto \int f \, d\mu^P_{\psi,\varphi}$

rögzített φ-re: $\mathcal{H} \to \mathbb{C}$ $\psi \mapsto \int f \, d\mu^P_{\psi,\varphi}$

konj. lin. + folytonos

$\Longrightarrow$ Béla $\in \mathcal{H}$ $\quad \langle \psi | \text{Béla} \rangle = \int f \, d\mu^P_{\psi,\varphi}$

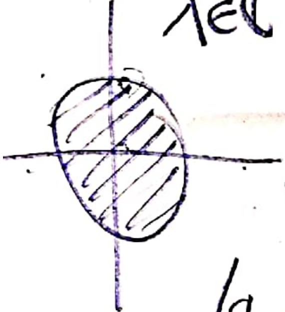
$\varphi \mapsto$ Béla lin.

$\hat{P}(f)\varphi = \text{Béla}$

$\int f \, dP = \hat{P}(f) : D_f \to \mathcal{H}$

$L : \ell^2 \to \ell^2$ $\quad (a_0, a_1, \dots) \mapsto (a_1, a_2, \dots)$

$\lambda \in \mathbb{C}$



$La = \lambda a$

$(a_1, a_2, a_3, \dots) = (\lambda a_0, \lambda a_1, \dots)$

$a_1 = \lambda a_0$

$a_2 = \lambda a_1$

$(a_0, a_0\lambda, a_0\lambda^2, a_0\lambda^3, \dots)$ $\quad \sum_{n \in \mathbb{N}} |a_0 \lambda^n|^2 = |a_0|^2 \sum_{n \in \mathbb{N}} (|\lambda|^2)^n = \frac{1}{1-|\lambda|^2}$

$E_{\mathrm{ig}} L = \{ \lambda \mid |\lambda| < 1 \}$ $\qquad |\lambda| < 1$