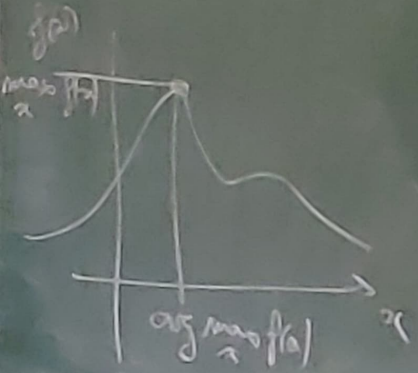
$\sim \mathcal{N}(0,R)$

$z = Hx + v$, hypothesis

$$\hat{x}^{\perp} = \arg\max_{x} P_{x|z}(x|z) = \arg\min_{x} \left[-\ln p_{x|z}(x|z) \right] =$$

$$\text{ou} \quad P_{x|z}(x|z) = \frac{P_{z|x}(z|x)\, P_x(x)}{P_z(z)}$$



$$\arg\min_{x} \left[-\ln p_{z|x}(z|x) - \ln p_x(x) + \ln p_z(z) \right]$$

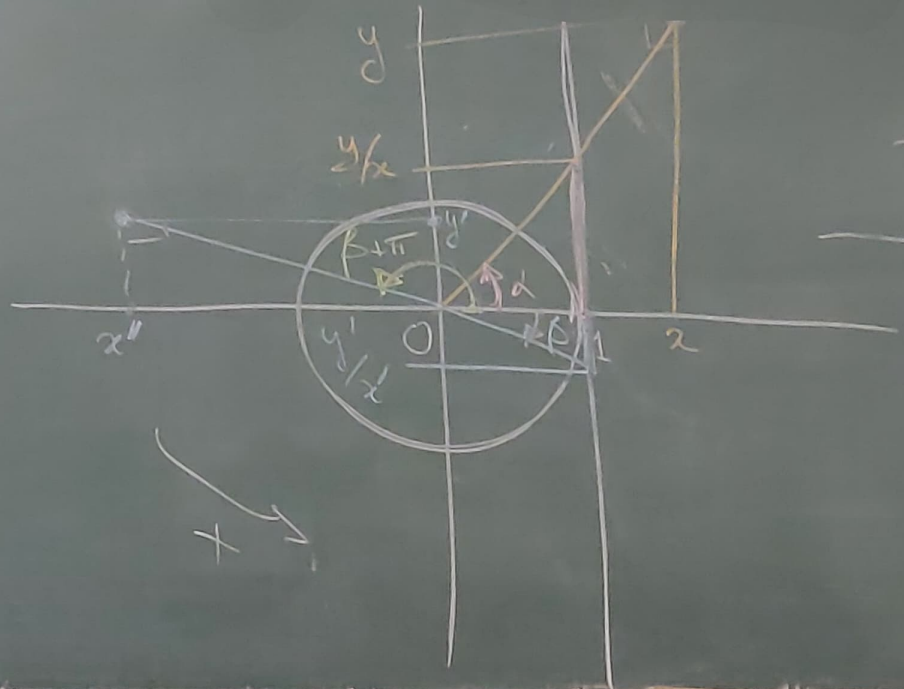
$\hookrightarrow$ or $p_x(x) = \mathcal{N}(x; \hat{x}^-, P^-) = \dfrac{1}{\sqrt{(2\pi)^{n_x} \det(P)}} \exp\left[-\frac{1}{2} (x - \hat{x}^-)^T (P^-)^{-1} (x - \hat{x}^-) \right]$

$\hookrightarrow$ et $p_{z|x}(z|x) = \mathcal{N}(z; Hx, R) = \dfrac{1}{\sqrt{(2\pi)^{n_z} \det(R)}} \exp\left[-\frac{1}{2} (z - Hx)^T R^{-1} (z - Hx) \right]$,

$\Downarrow$

$$\hat{x}^+ = \arg\min_{x} \left\{ \underbrace{(x - \hat{x}^-)^T (P^-)^{-1} (x - \hat{x}^-)} + \underbrace{(z - Hx)^T R^{-1} (z - Hx)} \right\}$$

$$= \arg\min_{x} \left\{ \underbrace{\|x - \hat{x}^-\|^2_{(P^-)^{-1}}} + \underbrace{\|z - Hx\|^2_{R^{-1}}} \right\}$$

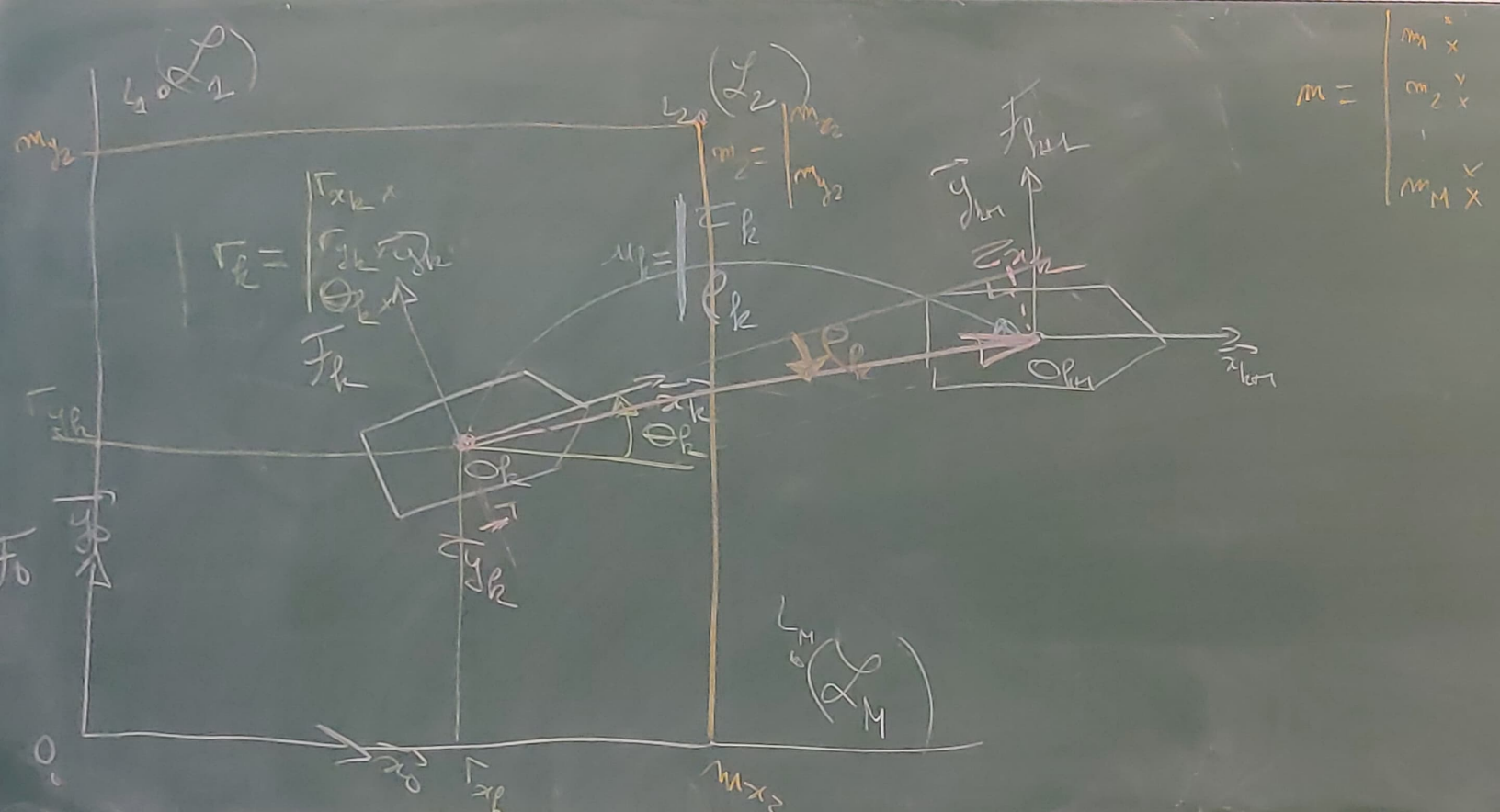


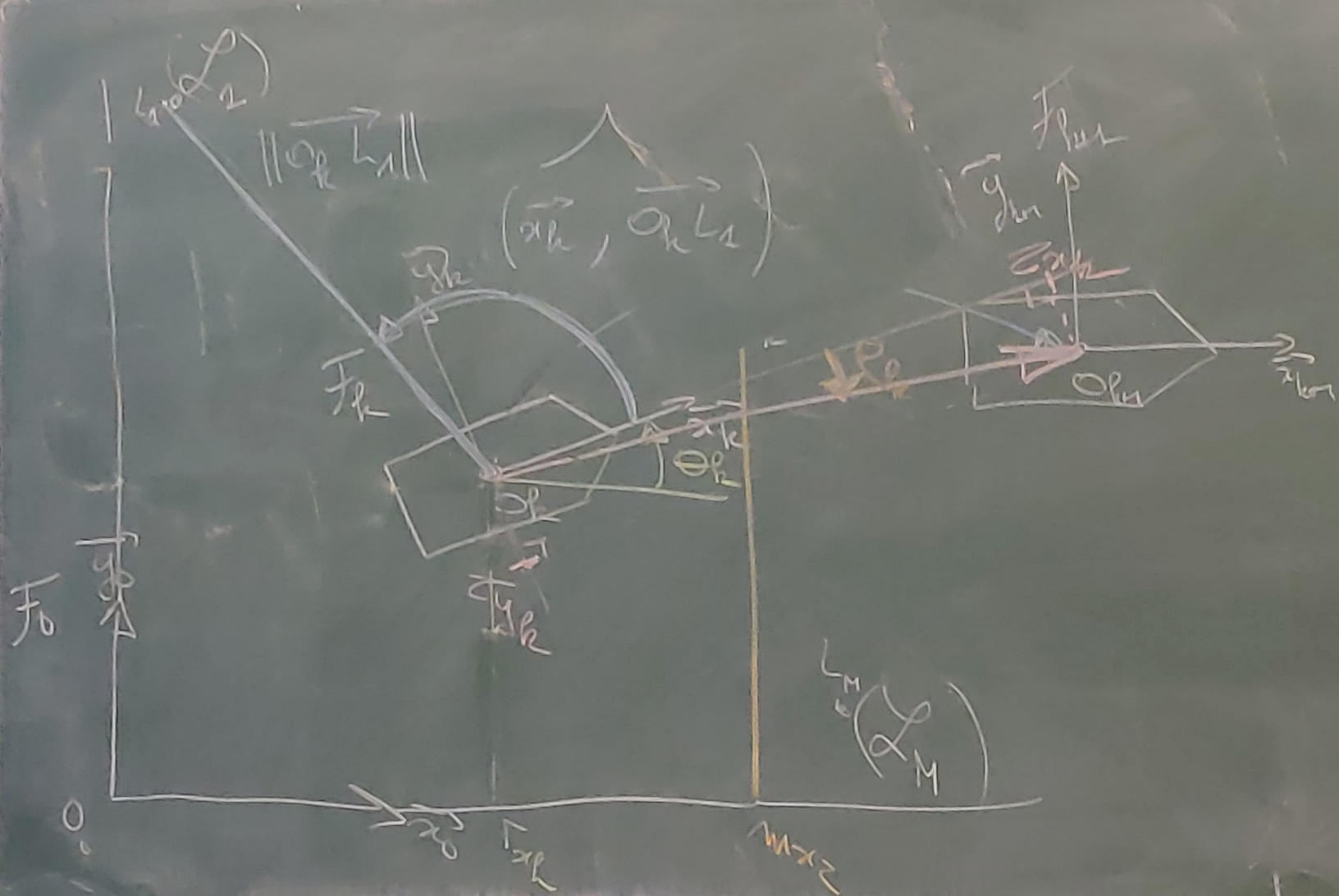
$$\operatorname{tg}\alpha = \frac{y}{x} \quad \text{d}$$

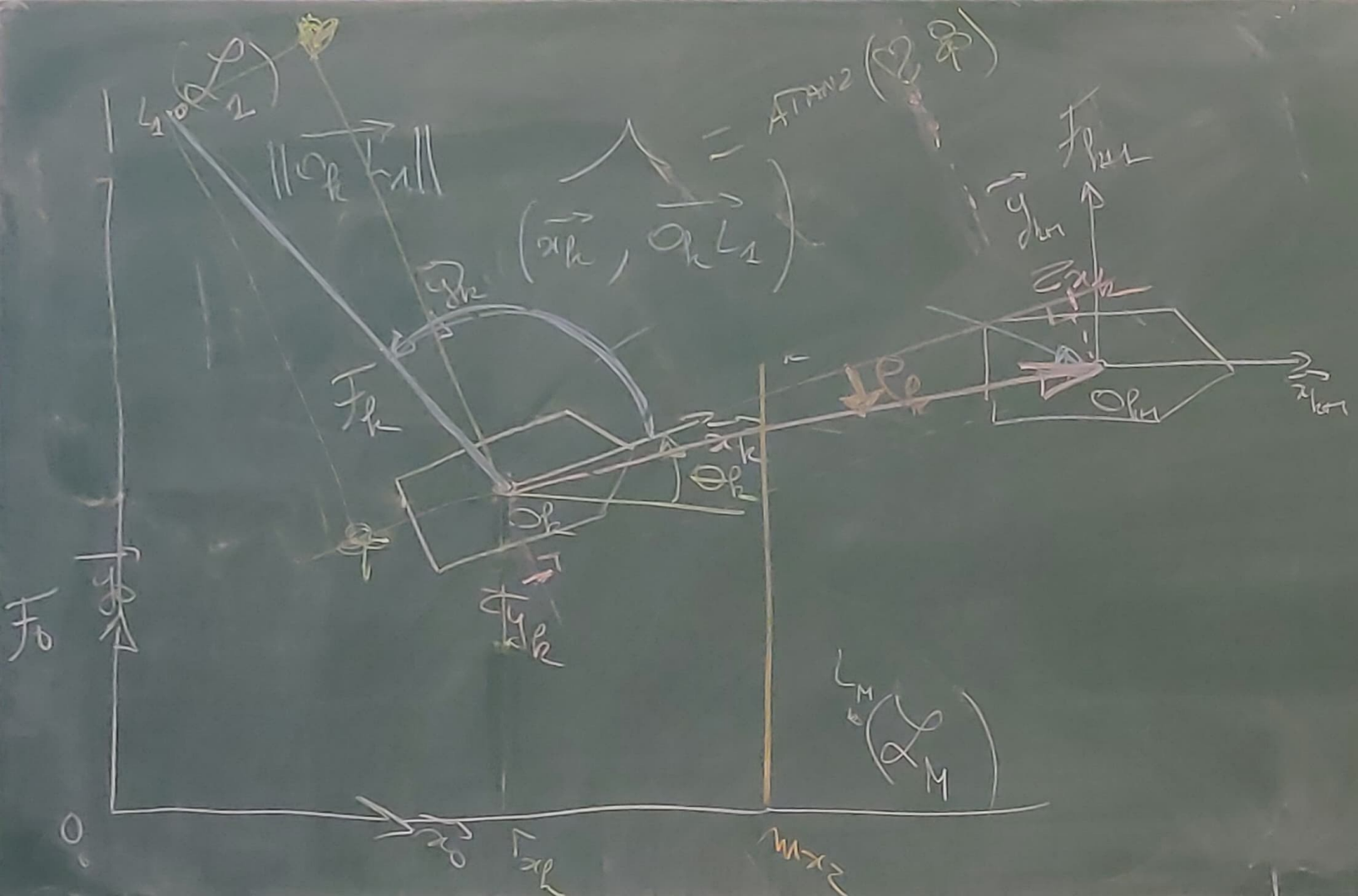
$$\operatorname{tg}\beta = \frac{y'}{x'}$$

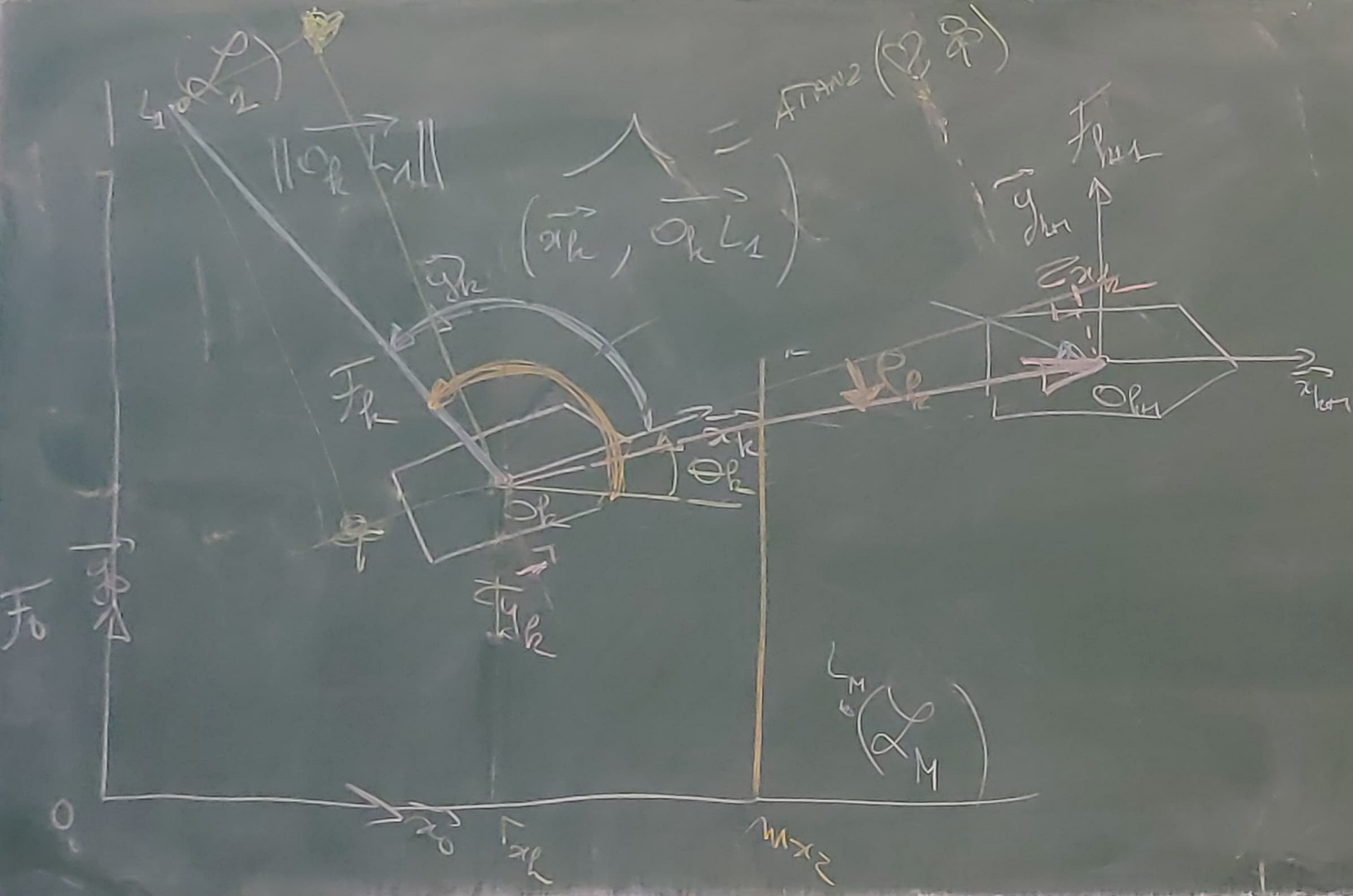
$$\text{ATAN2}(y, x) = \operatorname{Arg}\{x + jy\} = \alpha$$

d ⚠ $\text{ATAN2}(y', x') = \operatorname{Arg}\{x' + jy'\} = \beta + \pi$!


L_1 $(\mathcal{L}_1)$
L_2 $(\mathcal{L}_2)$
L_M $(\mathcal{L}_M)$
m_{y_2}
$m_2 = \begin{vmatrix} m_{x_2} \\ m_{y_2} \end{vmatrix}$
$r_k = \begin{vmatrix} r_{x_k} \\ r_{y_k} \\ \theta_k \end{vmatrix}$
$u_k = \begin{vmatrix} \xi_k \\ \rho_k \end{vmatrix}$
$m = \begin{vmatrix} m_1 \\ m_2 \\ \vdots \\ m_M \end{vmatrix}$
$\vec{x}_k$
$\vec{y}_k$
$\vec{x}_{k+1}$
$\vec{y}_{k+1}$
O_k
O_{k+1}
θ_k
ρ_k
ξ_k
$\vec{x}_0$
$\vec{y}_0$
O_0
r_{x_k}
r_{y_k}
m_{x_2}


$L_1 \in (\mathcal{L}_1)$
$\|\overrightarrow{O_k L_1}\|$
$(\widehat{\vec{x}_k, \overrightarrow{O_k L_1}})$
$\vec{y}_k$
$\mathcal{F}_k$
$\vec{x}_k$
θ_k
O_k
$\vec{y}_k$
$\mathcal{F}_0$
$\vec{y}_0$
O_0
$\vec{x}_0$
x_k
x_{k+1}
$\mathcal{F}_{k+1}$
$\vec{y}_{k+1}$
θ_{k+1}
O_{k+1}
$\vec{x}_{k+1}$
$L_M \in (\mathcal{L}_M)$


L_1
α_1
$\|\overrightarrow{O_k L_1}\|$
$\widehat{(\vec{x}_k, \overrightarrow{O_k L_1})} = \mathrm{ATAN2}(\ldots)$
$\vec{y}_k$
$\mathcal{F}_k$
φ
$\vec{x}_k$
θ_k
O_k
$\vec{y}_{k+1}$
$\mathcal{F}_{k+1}$
$\vec{x}_{k+1}$
O_{k+1}
$\mathcal{F}_0$
$\vec{y}_0$
$\vec{x}_0$
O_0
L_M
α_M


L_1
$\mathcal{L}_2$
$\|\overrightarrow{O_k L_1}\|$
$\widehat{(\vec{x}_k, \overrightarrow{O_k L_1})} = \mathrm{ATAN2}(\ldots)$
$\vec{y}_k$
$\mathcal{F}_k$
$\vec{x}_k$
θ_k
O_k
$\vec{y}_k$
$\mathcal{F}_0$
$\vec{y}_0$
O_0
$\vec{x}_0$
x_k
x_{k+1}
$\mathcal{F}_{k+1}$
$\vec{y}_{k+1}$
$\vec{x}_{k+1}$
O_{k+1}
L_M
$\mathcal{L}_M$