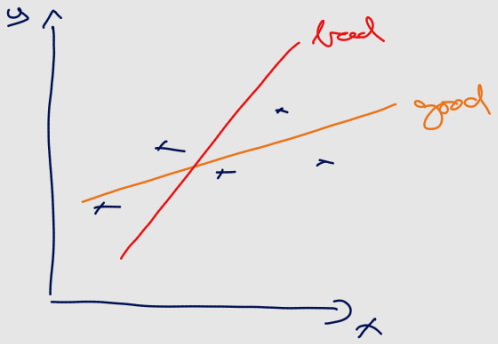
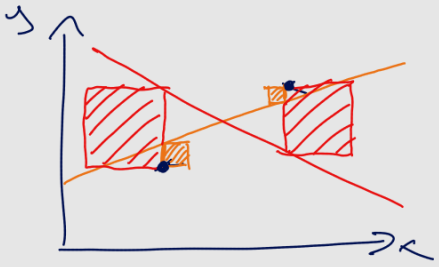
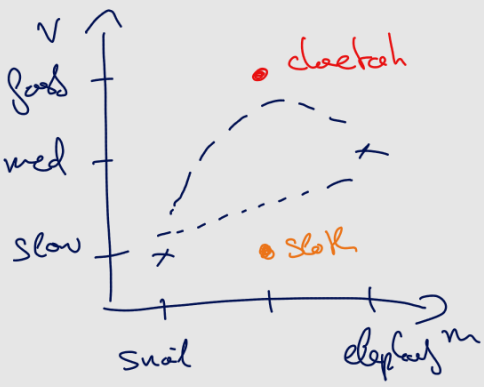
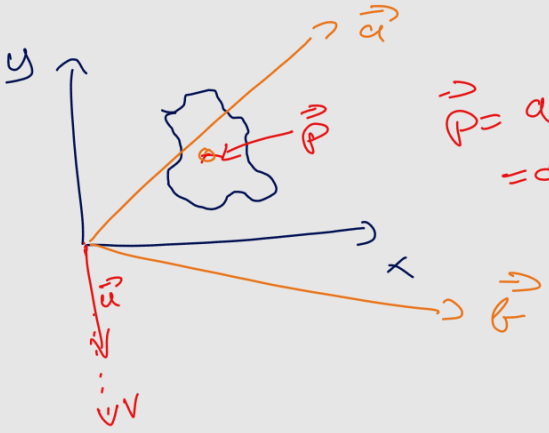


OLS: Ordinary least Squares

minimize Σ of squares (RMSE)



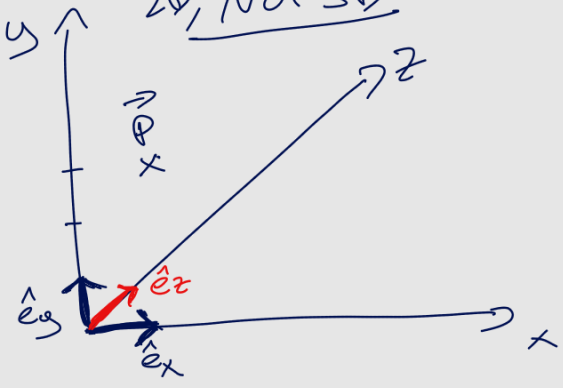




$\vec{p} = a_u \cdot \vec{u} + a_v \vec{v}$

$= a_u (\vec{u} + \vec{v})$

2D, NOT 3D!



$(x,y) \Rightarrow \vec{p} = a \cdot \hat{e}_x + b \cdot \hat{e}_y$

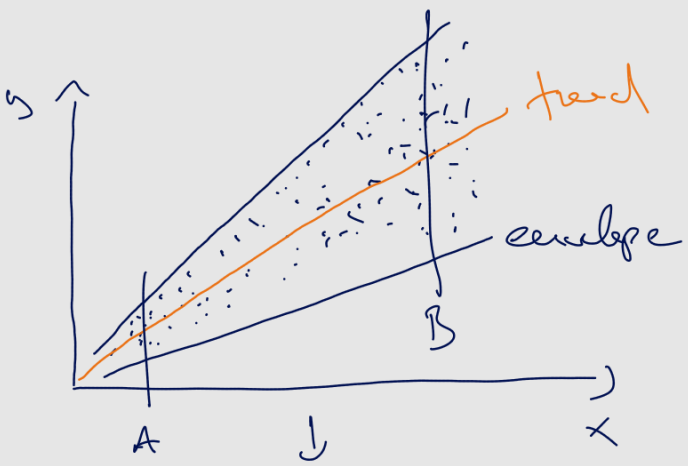
$= 1 \cdot \hat{e}_x + 3 \cdot \hat{e}_y$

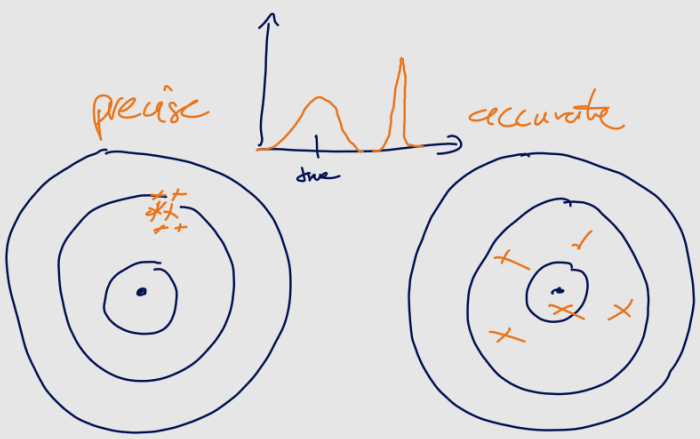
$\hat{e}_z = \frac{1}{\sqrt{2}} (\hat{e}_x + \hat{e}_y)$

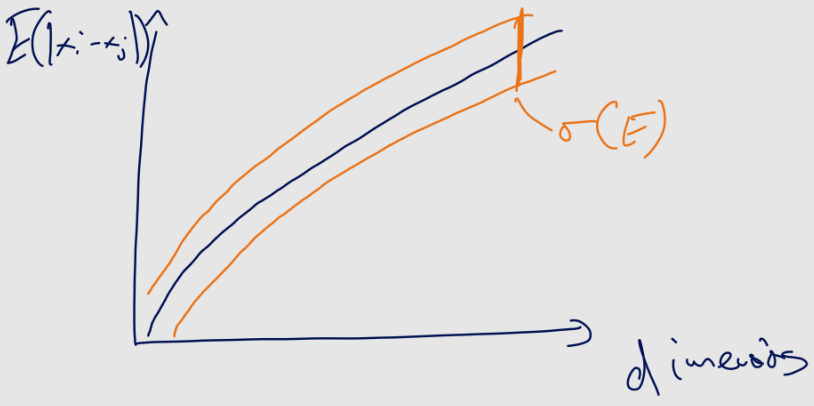
$(x,y,z) \Rightarrow \vec{p} = a \cdot \hat{e}_x + b \hat{e}_y + c \hat{e}_z$

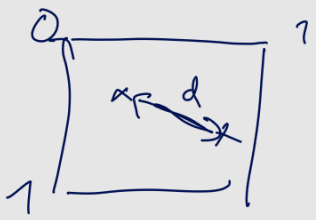
$= a \cdot \hat{e}_x + b \hat{e}_y + c \frac{1}{\sqrt{2}} (\hat{e}_x + \hat{e}_y)$

$= \left(a + \frac{c}{\sqrt{2}}\right) \hat{e}_x + \left(b + \frac{c}{\sqrt{2}}\right) \hat{e}_y$

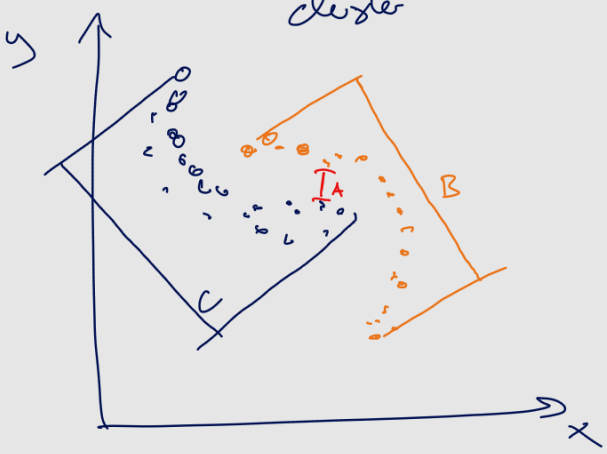




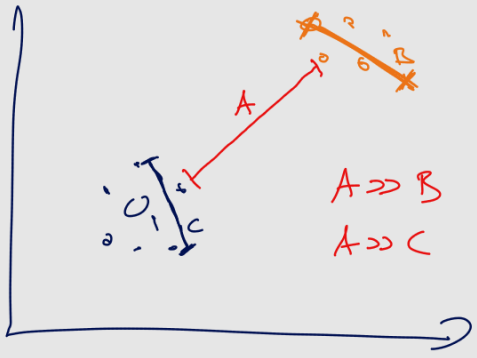


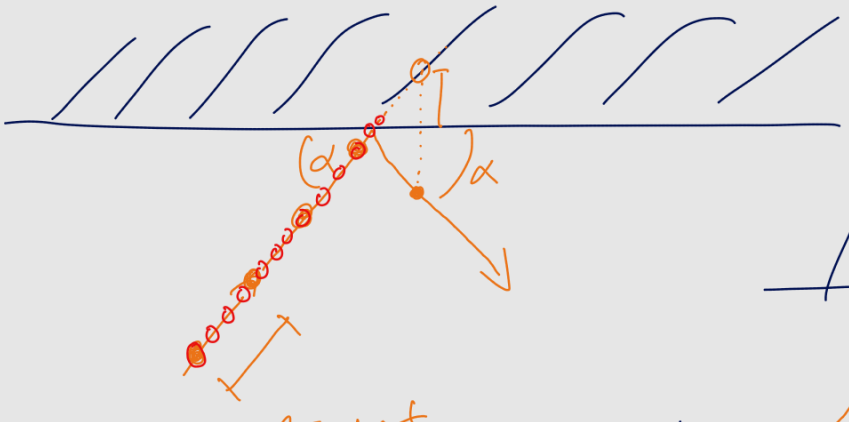


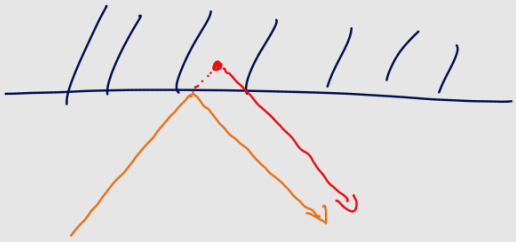
non-globular cluster

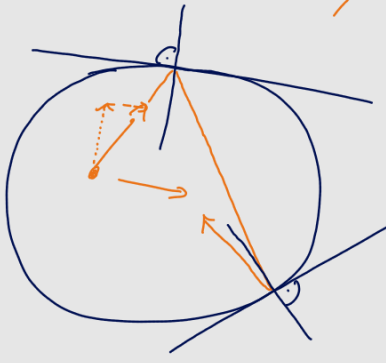


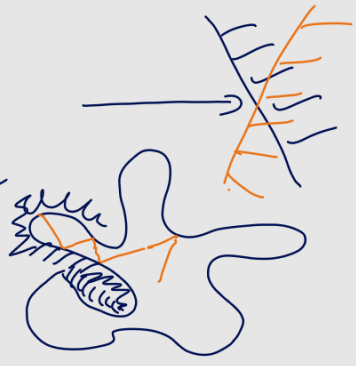
glob cluste

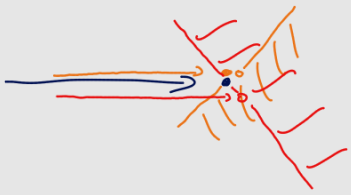












$\vec{n} = \begin{pmatrix} \vdots \\ \vdots \\ \vdots \end{pmatrix} \in \mathbb{R}^d$