## hw3 es 3 point 2

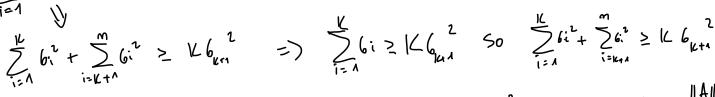
$$\|A\|_{F}^{2} \geq \|C\| \|A-B\|_{2}^{2}$$
 from point 2.1 we know that we can rewrite  $\|A\|_{F}^{2}$  as  $\int_{i=1}^{m} 6i^{2}$ 

$$\|A\|_{F}^{2}$$
 as  $\sum_{i=1}^{m} 6i^{2}$ 

and if we take 
$$\beta = A_{ik}$$
 we can write  $\sum_{i=1}^{n} 6i^2 \ge |K| |A - A_{ik}||_{2}^{2} = |A - A_{ik}||_{2}^{2}$  from point 2.4 is  $6K + A_{ik}$ 

$$A-A_{12} \Big\|_{\mathcal{D}}^{2}$$
 from poi

and this relation is verified because the eigenvalues are ordered and greater than 0. Note also that B is a matrix with rank k for the construction using SVD.



So 
$$\sum_{i=1}^{K} 6i^{2} + \sum_{i=1}^{M} 6i^{2} \geq K \cdot 6_{K+4}$$

$$\sum_{i=1}^{m} 6^{i2} \ge ||A||_{E}^{2} = ||A||_{E}^{2} = ||A - A_{E}||_{2}^{2} = ||A||_{E}$$

$$= \|A - A_{\kappa}\|_{2} \leq \frac{\|A\|_{F}}{\sqrt{\kappa}}$$

so there exist a matrix B= Ak of rank k such that the relationship is verified