

Proof of Lemma 12.2:

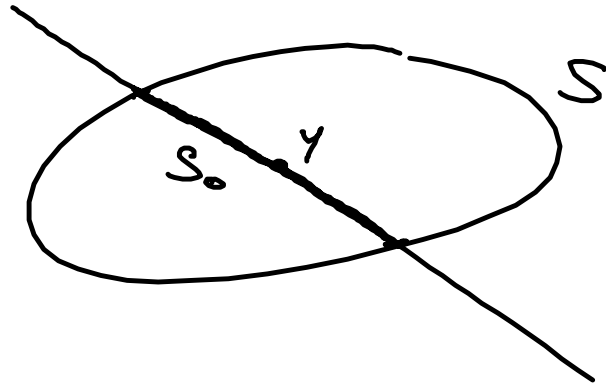
Let $x \in S$: $(x_i - \gamma_i)^2 \leq \beta^2 \cdot \gamma_i^2$ for $i = 1, \dots, n$

$\Rightarrow |x_i - \gamma_i| < \gamma_i$ "

$\Rightarrow -x_i + \gamma_i \leq |x_i - \gamma_i| < \gamma_i$ "

$\Rightarrow x_i > 0$ "

□



Proof of Lemma 12.4:

$c^T \cdot y^* \leq c^T \cdot y$ clear by optimality of y^* .

$c^T \cdot y < p^T \cdot b + \varepsilon \leq c^T \cdot y^* + \varepsilon$ by weak duality.

$b^T \cdot p \leq b^T \cdot p^*$ by opt. of p^*

$b^T \cdot p > c^T \cdot y - \varepsilon \geq c^T \cdot y^* - \varepsilon$ by weak duality. \square