

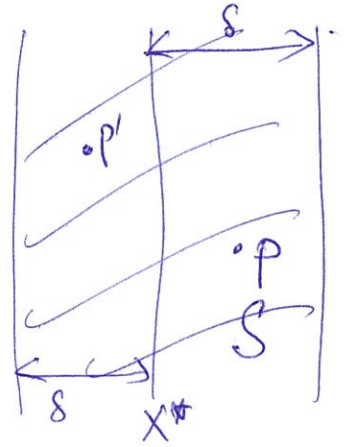
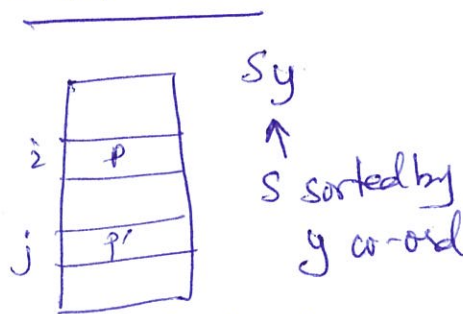
KICKASS PROPERTY LEMMA

Nov 4

For every $p \neq p' \in S$ s.t.
 $d(p, p') < \delta$

$$S = \{(x, y) \in P \mid |x - x^*| \leq \delta\}$$

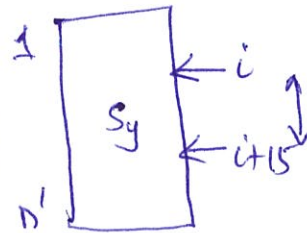
s.t. $S_y [i] = p$
 $S_y [j] = p'$
 the $|i - j| \leq 15 (!)$



Note: (i) "15" can be made to be "9". (can be as small as 7)

for $i = 1 \dots n' - 1$

Let (p_i, p'_i) among
 $(S_y [i], S_y [i+1]), (S_y [i], S_y [i+2])$
 $\dots (S_y [i], S_y [i+15])$



min $(i+15, n')$

Let (p, p') be closest pair of points among
 $(p_1, p'_1) \dots (p_{n'}, p'_{n'})$

If $d(p, p') < \delta$
 return (p, p')

else
 return NULL

