	SMGT 432: Plus-Minus Lecture
	thegas (los)
A-1-17	Announcements
1.	No office hours today
	Last 3 Rice Soccer matches are in next 8 days
	Clarify what I mean by "two improvements" on Assignment \$3. Notation -> and hormatize by events in stead of minutes.
(e) **	Regularized Adjusted Plus-Mouse Land
	Definition! A segment is a period of time within a
056	game during which no substitutions are made.
	For each segment s = 1,, S, we observe:
	> ts: the time duration (in minutes) of segments
	-> gs: the number of goals scored by the home team
	-> gs: the number of goals scored by the away team
N. N.	() if places is on the field for the home team
	h. d= Partitleto Prose xod " Atab lenentible H O otherwise " reinslamos 2209 : 201gmax 3
43-26	of led if player p is on the field for the away team
128	-> asip = { o otherwise
(.4)	Model TEB = EM Port EP E E SUI CO OF
100	4s = (gh - ga)/ts
	x= hs - as 9 9 9 5
	Free real and the first th
Y	Plus = Minus too of wonger gitsenic ton grid
	$\frac{s}{s}(h-a_s)(a^h-a^a_s) = \frac{s}{s}$
	bW = 221 (1/2) 020 (92 0) = 221 42 1/2 0/2
	\$ ts (hs,p-as,p) to total minutes playe
	på bloger b

	1 1 - ///
Adjusted Plus-Minus (Gaussian)	2 9337075
	Luke: Fit
Model: ys = \(\bar{\gamma} \beta_p \chi_s \rangle + \bar{\gamma}_s \bar{\gamma} \\ \gamma_s \\ \ga	$\mathcal{N}(0,\sigma^2/t_s)$
CAN Margaret Archange was credder die andre	of layer
Pause Does this look familiar? (Brad How do we estimate B? (Linea	ley Terry)
How do we estimate B? (Linea	(Regression)
B= argmin Σ ts (ys - Σβρχς)	2 1202
β 821 22 (32 P=1 Db ×2.b)	ST TOME
map (hear when will start where well go	toponia) &
Cool Property	- Paired p
Be selfs xsp (ys = EBp xsp)	cha:Lash
B = = ts +3 p (3s p/ pp) 2. p/	Clerk e c
T'A	
The second of th	7
Part and At at I Plus Misus	-33.9°
Regularized Adjusted Plus-Minus	- Calleria Co
= acamin \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	P 22
$\widehat{\beta} = \underset{\beta}{\text{argmin}} \left\{ \sum_{s=1}^{S} t_s \left(y_s - \sum_{p=1}^{S} \beta_p x_{s,p} \right)^2 + \lambda \right\}$	2 Pr. J. 170
11.14.1 (UF200)	(n.) 11/2 (9)
Pause Does this look familiar?	A Line of Court And
1 1 1 5	
The part of the pa	
Box Plus-Minus	10 1 1 3
Dox 1162-1 11162	Salvar Levise
transals 30/ 68 starre / notes	is Nosey (Evol-
We observe "box-score" statistics	bply, bpK
Examples: pass completion rate, aerial di	nel win rate,
tackles per 90, clearances p	Dec 90 10 1000
I see a see	and the second s
Model: B = E TK * bpk + Ep 1 Epind)	V(0, \sigma^2/tp)
	/
f = argmin & to (Bp - E The bp)	0.500
	N. C. LAND D.
Pause Why not directly regress 4 onto	5 / E/7
Tarse Mid Ma direction rediesz de ovu	- In the King

13:

10 m/

100