TVD contraction
100 Camacher.
Let P be a Markov Kernel with stationary distrati
Then $\ P^{n+1}(\alpha, \sigma) - \pi(\sigma)\ _{TV} \leq \ P^{n}(\alpha, \sigma) - \pi(\sigma)\ _{TV}$
For any AED, I Part (2, A) - TI(A) = S P^(x, dy) P(y, A) - S TI(dy) P(y, A)
$= \left \int_{y \in X} \rho^{n}(a, dy) h(y) - \int_{y \in X} T(dy) h(y) \right \leq \rho^{n}(a, e) - T(e) \text{ by (i)}$ where $h(y) = \rho(y, A) : \mathcal{X} \rightarrow [e, i]$. Take sup
Las Las Dough Take sup
where my = my, and service Abst.
W, equivalence
INC IE FOR VI
Let $W_{i}(u_{i}v) = W_{i}(u_{i}v) = \frac{1}{\sqrt{2}} \left[\frac{1}{\sqrt$
The Lice with MEL J Her L = set of Lupshitz functions
= 2h;23k; (ncz)-ncg/ = 0c (s);
(4) $W_{i}^{L} \leq W_{i}^{C}$. Let $Y_{i} = ang inf \ E_{Y}(D(X,Y)]$. Let $h = ang sup \ E_{Y}(h] - E_{Y}(h)$. Then $W_{i}^{L}(u,v) = \int [h(x) - h(y)] \ dY(dx,dy) \leq \int D(\pi_{i}y) \ T(dx,dy) = W_{i}(u,v)$.
(4) W, EW, LEC 02 - DET (dr. dy) < (D(7,4) T(dr. dy) = W, (4,2).
(hen W. (A,D) =)[h(a) = h(g)] & v (ch) =)
But why is the inequality tight? It [D] Inf map to (W2 = 2) To minimise the we need the map to (W2 = 2)
Could also minimuse Ex[D] using (w,=2)
cdf Consider the infinitesimal
chunk of mass
To shift from 4 to 2 this should
1 2 3 4 10 Shift from A 18 D Sites Stocks
shift amording to in
2
h(x) is switches direction when they cross.
(So Enlh(x)] - It, Lh(x)] for h above
Now $F_{\mu}[h(x)] = \int h(x) d\mu(x) = \int h(F'(p)) dp = \int mass x how farit moves.$
(01.7.1)
Transport plan
·45 4 15 ·3 ie sum of mass x how far it moves.
•05
M :03 3
.3 1 .3
1 2 3 4
04 01 02 03 2