$$\mathbb{E}_{\mu}[(f - \mathcal{T}f)^2] = \mathbb{E}_{(s,a)\sim\mu}\left[\left(f(s,a) - \gamma - \gamma \max_{a'} f(s',a')\right)^2\right] \le \epsilon.$$

$$\|f - \mathcal{T}f\|_\infty \le \epsilon.$$

$$\mathbb{E}_{d_2}[f - Q^*] \le \sqrt{\mathbb{E}_{d^\square}[(f - \mathcal{T}f)^2]}$$

$$(f - \mathcal{T}f + \mathcal{T}f - Q^*)^2$$

X. $\ell : X \to \mathbb{R}$.

$$\left(\mathbb{E}_{\mu}[|\ell|^p]\right)^{1/p} \le \epsilon. \qquad \left\|\frac{\nu}{\mu}\right\|_\infty \le C.$$

data

$$\left(\mathbb{E}_{\nu}[|\ell|^p]\right)^{1/p} \le C^{1/p} \cdot \epsilon.$$

target

$$\sum_x \nu(x) |\ell(x)|^p$$

$$= \sum_x \frac{\nu(x)}{\mu(x)} \mu(x) |\ell(x)|^p$$

$$\le C \sum_x \mu(x) |\ell(x)|^p$$

$$= \sum_x C \cdot \mu(x) \cdot \varepsilon(x)^p$$

$$= C \cdot \varepsilon^p.$$

$$\left(\mathbb{E}_\mu [\ell^p] \right)^{1/p} = \|\ell\|_{p,\mu}.$$

$p = 2$. $\mu = \text{unif}$.

$$\left(\mathbb{E}_{x \sim \text{unif}} [\ell^2] \right)^{1/2}.$$

$$= \left(\frac{1}{|X|} \sum_x \ell(x)^2 \right)^{1/2}.$$

$$\|u\|_1 \geq \|u\|_2 \geq \|u\|_\infty.$$

$$\|u\|_{1,\mu} \leq \|u\|_{2,\mu} \leq \|u\|_\infty$$