

7 Exercise Sheet 7

Exercise 7.1. Given a subset $\Omega \subset \mathbb{R}^d$, a probability measure $\mu \in \mathcal{P}_p(\Omega)$ and a point $x_0 \in \Omega$, compute $W_p(\mu, \delta_{x_0})$.

Exercise 7.2. Let f be a λ -Lipschitz function on a subset Ω of \mathbb{R}^d and let $\mu, \nu \in \mathcal{P}_1(\Omega)$, then

$$\int_X f d\mu - \int_X f d\nu \leq \lambda W_1(\mu, \nu).$$

Remark 7.1. Actually both the exercises work even in a generic metric space.