$$G = \inf_{d,R} ||d||_{L^{\infty}(R)}$$

$$G = \operatorname{GH} = \inf_{Z,f,g} \frac{d_{H}^{Z}(f(X),g(Y))}{d_{H}^{Z}(f(X),g(Y))} = \operatorname{GH} = \frac{1}{2} \inf_{R} ||d_{X} - d_{Y}||_{L^{\infty}(R \times R)}$$

$$\downarrow W \qquad \qquad \downarrow W$$

$$D_{\infty} = \inf_{d,\pi} ||d||_{L^{\infty}(R(\pi))} = D_{\infty} = \inf_{Z,f,g} W_{Z,\infty}(f_{\#\mu_{x}},g_{\#\mu_{y}}) \simeq \operatorname{GW}_{\infty} = \inf_{\pi} ||d_{X} - d_{Y}||_{L^{\infty}(R(\pi) \times R(\pi))}$$

$$\downarrow L^{p} \qquad \qquad \downarrow L^{p}$$

$$D_{p} = \inf_{d,\pi} ||d||_{L^{p}(\pi)} = D_{p} = \inf_{Z,f,g} W_{Z,p}(f_{\#\mu_{x}},g_{\#\mu_{y}}) \gtrsim \operatorname{GW}_{p} = \inf_{\pi} ||d_{X} - d_{Y}||_{L^{p}(\pi \otimes \pi)}$$

$$|\operatorname{Isometry} \setminus K$$

$$\operatorname{GM}_{p} = \inf_{\phi} ||d_{X} - \phi^{*} d_{Y}||_{L^{p}(\mu_{x} \otimes \mu_{x})}$$