n	500	3000
NN	11.65	0.20
OT	**0.03**	0.16
min-SWGG	0.08	**0.13**

Table 1: Square Chamfer distance: $d^2(X,Y) = \sum_{x\in X} \min_{y\in Y} ||x-y||_2^2 + \sum_{y\in Y} \min_{x\in X} ||x-y||_2^2$ between final transformation on the source and the target. Best values are boldfaced.

n	500	3000
NN	526	30.04
OT	3.8	6.5
min-SWGG	**2**	**4.5**

Table 2: Frobenius distance: $\|\Omega_{\text{real}} - \Omega_{\text{estimated}}\|_2^2 + \|t_{\text{real}} - t_{\text{estimated}}\|_2^2$ where Ω's are in $O(d)$ and t's are in $\mathbb{R}^d$ between final transformation on the source and the target. Best values are boldfaced.

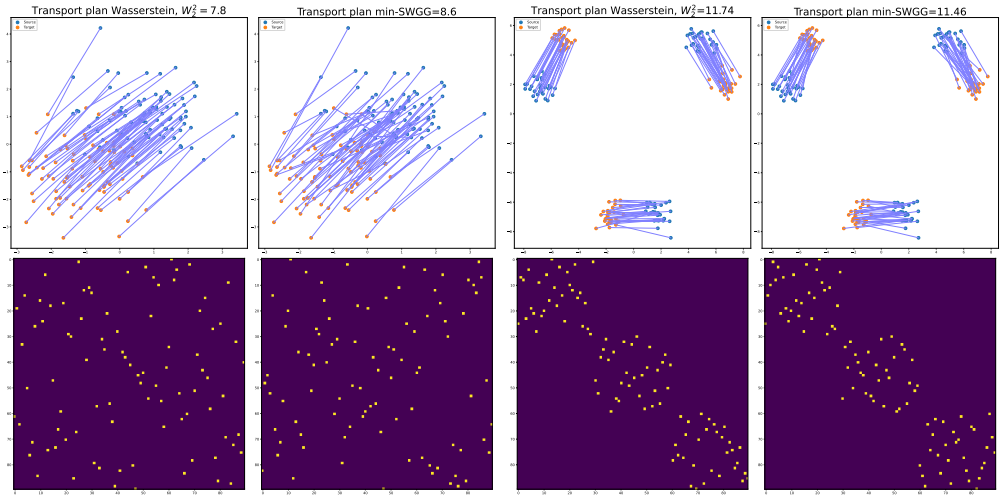

Figure 1: Example of transports plan given by Wasserstein (left and middle-right) and min-SWGG (middle left and right). Transport plan distribution (top) and transport matrix (bottom). The overall structure of the distribution is captured by min-SWGG.

dimension	2	20	200
W_2^2	32.4	346	3836
min-SWGG($L = 1000$)	33.2	377	3958
min-SWGG (optim)	33.2	375	3944
SW($L = 1000$)	16.1	16	16
max-SW (optim)	32.2	322	3384

Table 3: Evolution of the distance with min-SWGG, SW and max-SW with the dimension.