

Table 1: Comparison of Algorithms on DTLZ1

	DTLZ1(4)	DTLZ1(5)	DTLZ1(6)
PHN-EPO	11.8155	21.7964	42.6230
PHN-LS	11.9910	23.3634	47.8617
PHN-Tche	9.7352	18.6714	47.2200
COSMOS	11.9769	23.6661	45.4436
PHN-HVI	12.0378	24.4189	49.1362
PHN-HVVS	<b>12.1652</b>	<b>24.5912</b>	<b>49.2156</b>

Table 2: Results of MS Metric under different datasets

Algorithm	MM.	MF.	FM.	Drug	Jura	SAR
PHN-EPO	0.1968	0.2983	0.6766	0.5226	0.2123	0.1420
PHN-LS	0.0752	0.0863	0.1940	0.1570	0.1983	0.1005
PHN-Tche	0.2667	0.4644	0.8286	<b>0.9722</b>	0.3632	0.1226
COSMOS	0.2883	0.3010	0.2989	NA	0.1121	0.1500
PHN-HVI	0.4588	0.5350	0.4346	0.3149	0.5760	0.2000
PHN-HVVS	<b>1</b>	<b>1</b>	<b>0.9854</b>	0.6259	<b>0.8885</b>	<b>0.3324</b>

Table 3: Comparison of Algorithms on Different Problems

Algorithm	Pro.1	Pro.2	Pro.3	Pro.4	Pro.5	Pro.6	Pro.7
PHN-EPO	0.7297	0.9806	0.9982	0.8129	0.9802	0.8316	0.9506
PHN-LS	0.9617	0.9777	0.7071	0.9869	0.9938	0.9854	0.9898
PHN-Tche	0.7859	0.9261	0.9982	0.8204	0.9875	0.8544	0.9887
COSMOS	0.6947	0.9439	0.9948	0.7276	0.9498	0.7136	0.9769
PHN-HVI	0.7344	0.9833	0.9857	0.7159	0.9856	0.7562	0.9894
PHN-HVVS	<b>1</b>	<b>0.9919</b>	<b>1</b>	<b>0.9988</b>	<b>0.9988</b>	<b>1</b>	<b>0.9937</b>

Table 4: Comparison of Different Sampling Methods on Jura and SARCOS

	Random	Latin	Polar	Dir	K-means	Voronoi
Jura	0.928	0.922	0.928	0.923	0.925	<b>0.935</b>
SARCOS	0.884	0.883	0.881	0.888	0.877	<b>0.949</b>

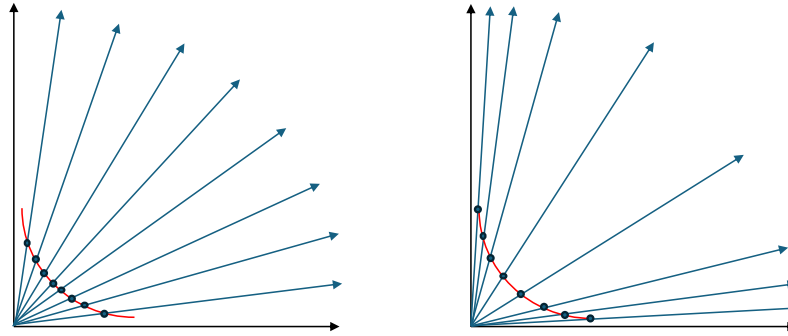


Figure 1: The solutions obtained by uniformly sampling will cluster in certain local areas.

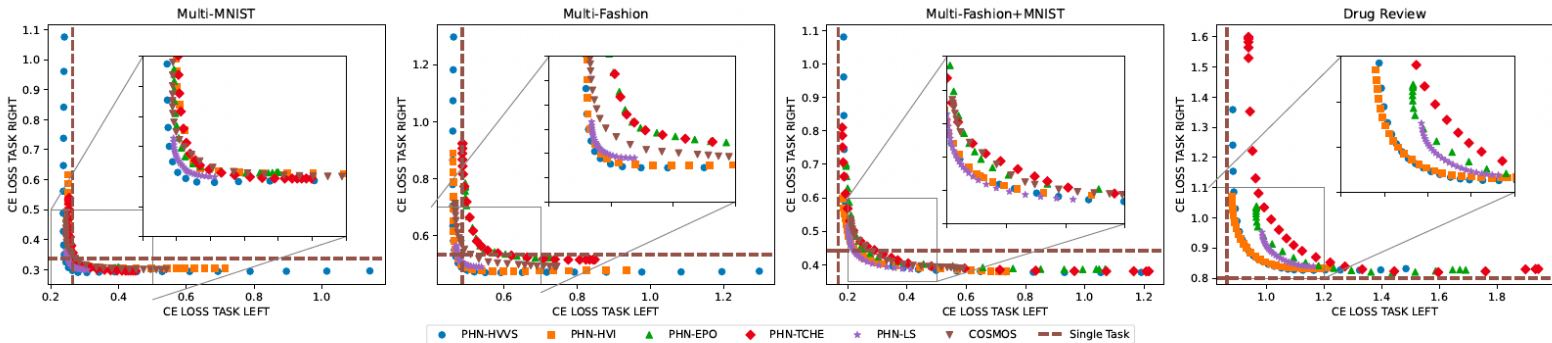


Figure 2: Results comparison on different Multi-Task Dataset.