

initialx			xOpt			xTrue			thetaOpt						thetaTrue						objOpt	MLBD	SUBD
[0]	x[1]	[2]	[0]	[1]	[2]	[0]	[1]	[2]	[0][0]	[1][0]	[2][0]	[0][1]	[1][1]	[2][1]	[0][0]	[1][0]	[2][0]	[0][1]	[1][1]	[2][1]			
0.226	0.226	0.527	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.471	0.207	0.15	-0.98	-0.529	-0.003	0.001	1.151	-0.704	0.433	0.302	0.264	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.384	0.816	0.782	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.164	0.663	0.945	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.046	0.588	0.459	-0.004	-1.589	0	0.001	1.151	-0.704	0.316	0.368	0.316	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.97	0.344	0.578	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.144	0.717	0.653	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.19	0.252	0.12	-0.98	-0.529	-0.003	0.001	1.151	-0.704	0.433	0.302	0.264	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.773	0.918	0.908	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.848	0.712	0.312	-0.98	-0.529	-0.003	0.001	1.151	-0.704	0.433	0.302	0.264	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.71	0.016	0.116	-1.589	-0.004	0	0.001	1.151	-0.704	0.368	0.316	0.316	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.042	0.812	0.623	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.062	0.877	0.728	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.76	0.719	0.913	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.153	0.471	0.22	-0.004	-1.589	0	0.001	1.151	-0.704	0.316	0.368	0.316	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.996	0.715	0.868	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.839	0.626	0.556	-0.98	-0.529	-0.003	0.001	1.151	-0.704	0.433	0.302	0.264	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.731	0.667	0.22	-0.98	-0.529	-0.003	0.001	1.151	-0.704	0.433	0.302	0.264	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.49	0.686	0.838	-1.433	-0.32	0	0.001	1.151	-0.704	0.335	0.331	0.335	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0
0.753	0.954	0.129	-0.98	-0.529	-0.003	0.001	1.151	-0.704	0.433	0.302	0.264	0	0	1	0.167	0	0.832	0.143	0.333	0.524	0	-0.1	0

**Table 2. Test GOP using different seeds on three data sets with scale of M=1, K=3, N=3.**

**The optimal objective function  $||y-x_{Opt}*\theta_{Opt}||^2_2$  is 0.**

Constraints for x:

```
cons = np.sum(abs(x_star))
```

Number of seeds:

```
MAXSEED = 20
```

Generate different seeds by timing:

```
SEED = int(time.time())
```

```
np.random.seed(SEED)
```

Generate initial value for x:

```
np.random.random_sample((M,K))
```

Tolerance:

```
e = 0.1
```

Parallel processing in "get unique regions using cell numeration" and "sc

```
NUM_CORES = 64
```