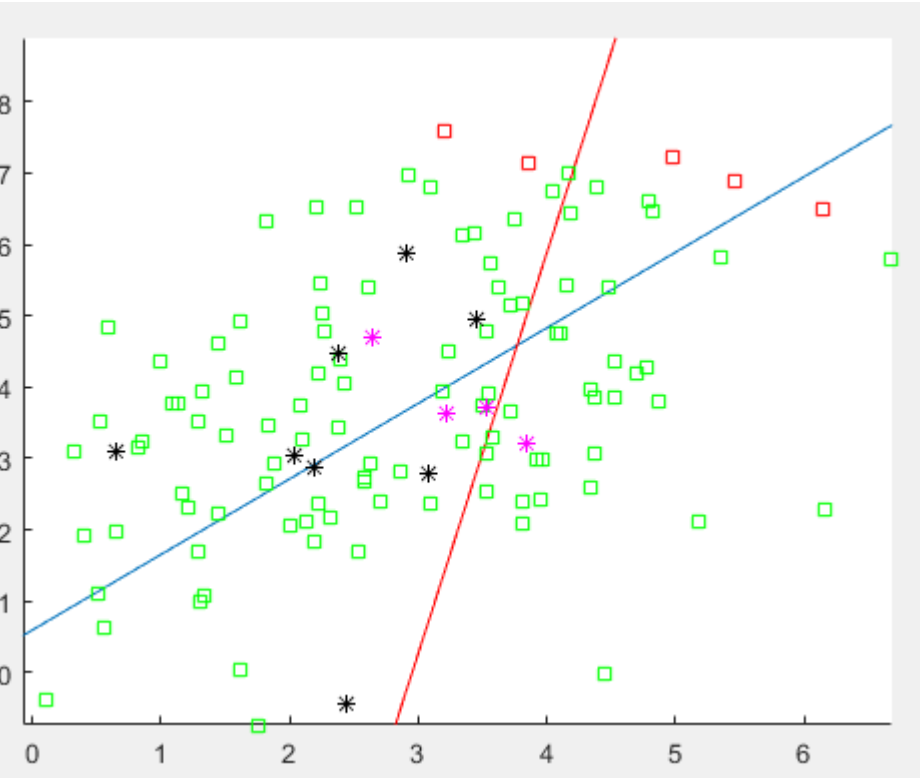
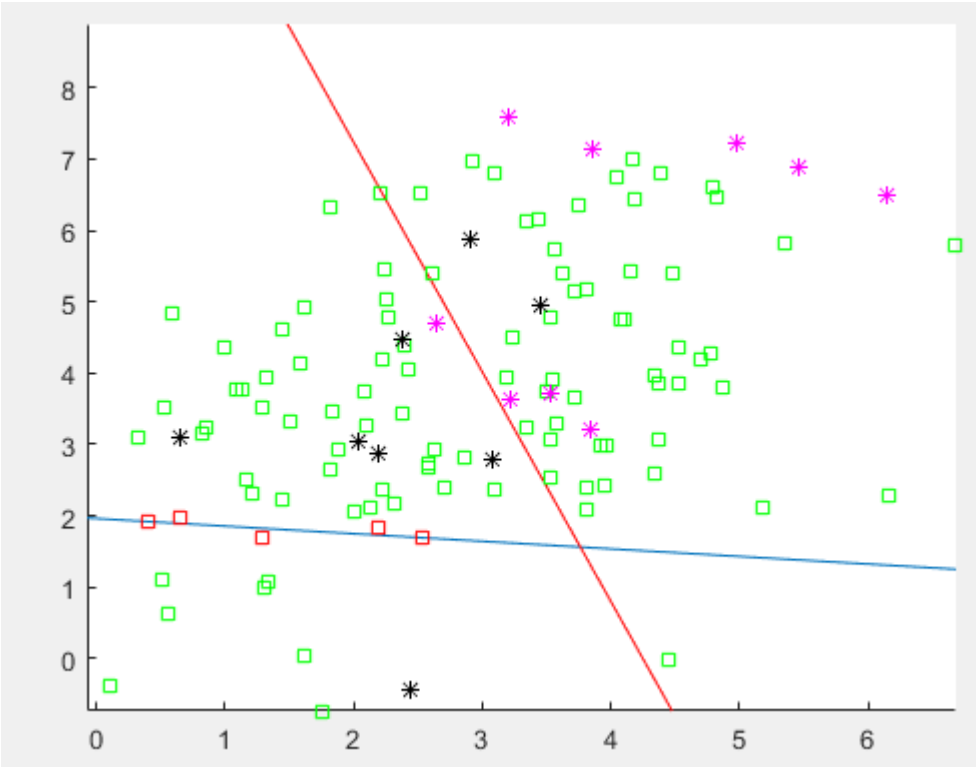



```
alpha_label = max(1-loss/lamda,0
```

alpha_label: 12x1 double =

0
0.8823
0
0
0
0
0
0
0
0
0
0



Lambda较小时，label set几乎不起作用，导致交替优化模型变动很大

尝试：

1.label1 : label set的权，全为1

2.one_round: 不做交替优化，去掉优化模型的部分，一次二次规划与SPL优化直接选出样本

3. 优化模型时，将最大的权设为1（在跑）

对比：

1.sqrt : 原方法，(优化模型时仅取权大于0.01的样本)

2.BMDR1/1000: BMDR方法取不同的参数

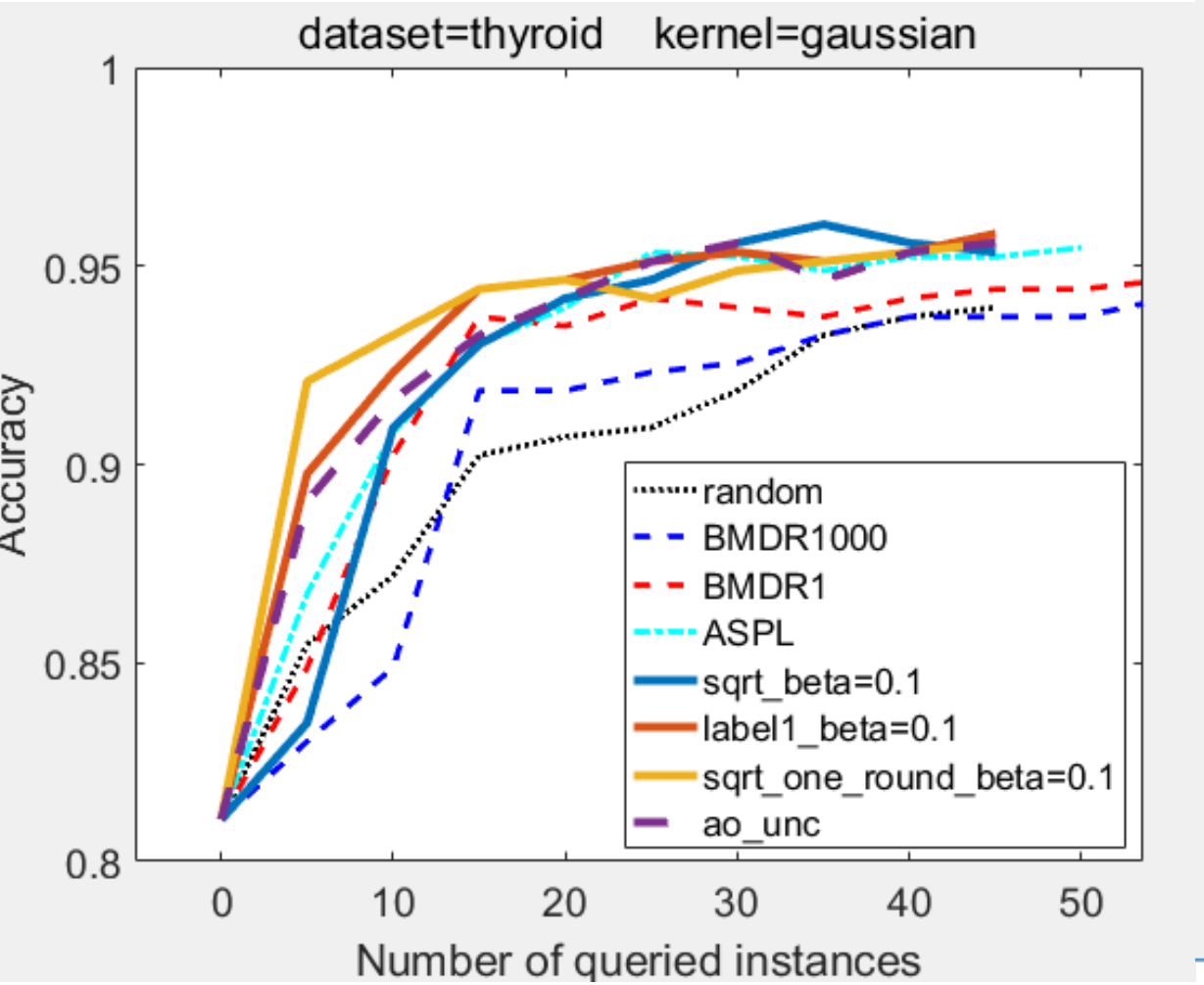
3. ASPL: 每次查询2个batch，其中一个用uncertainty，另一个用伪标记

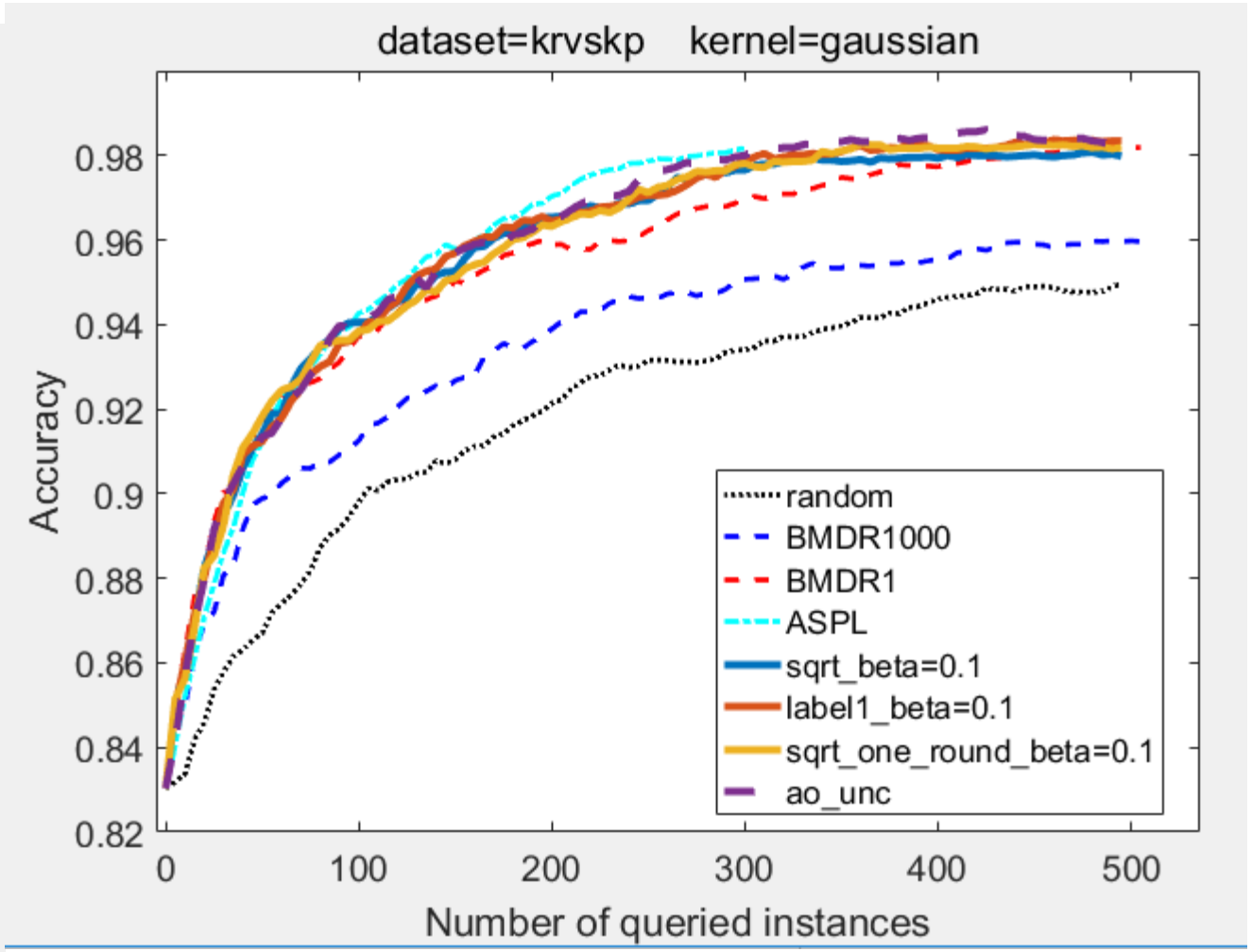
4. ao_unc: 交替优化uncertainty $\min_{f,w} \sum_{i=1}^{n_l} [(y_i - f(x_i))^2] + \sum_{j=1}^{n_u} \left[w_j \left(\hat{y}_j - f\left(x_j\right) \right)^2 \right] + \gamma ||f||^2$

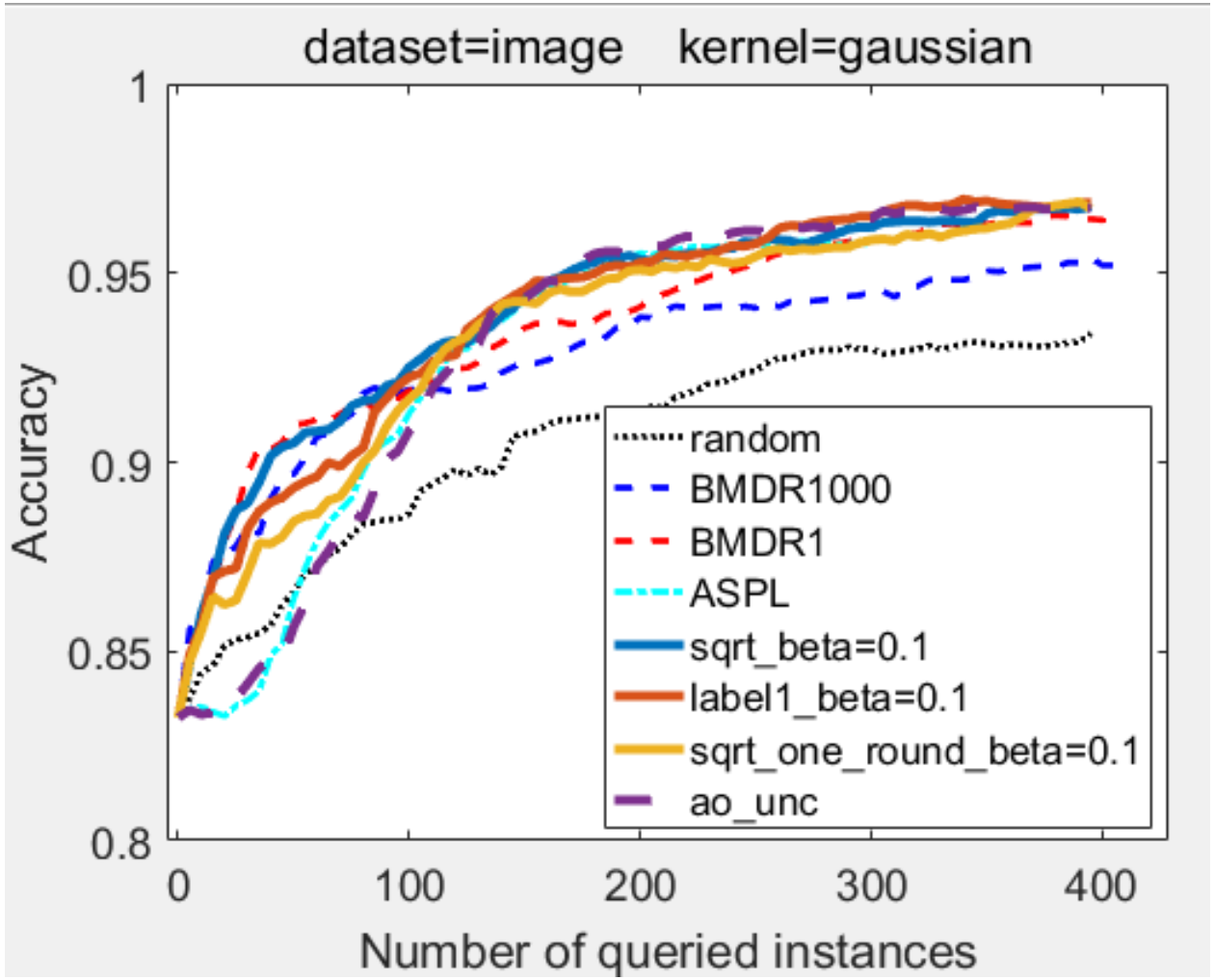
Table 1: Datasets used in the experiments.

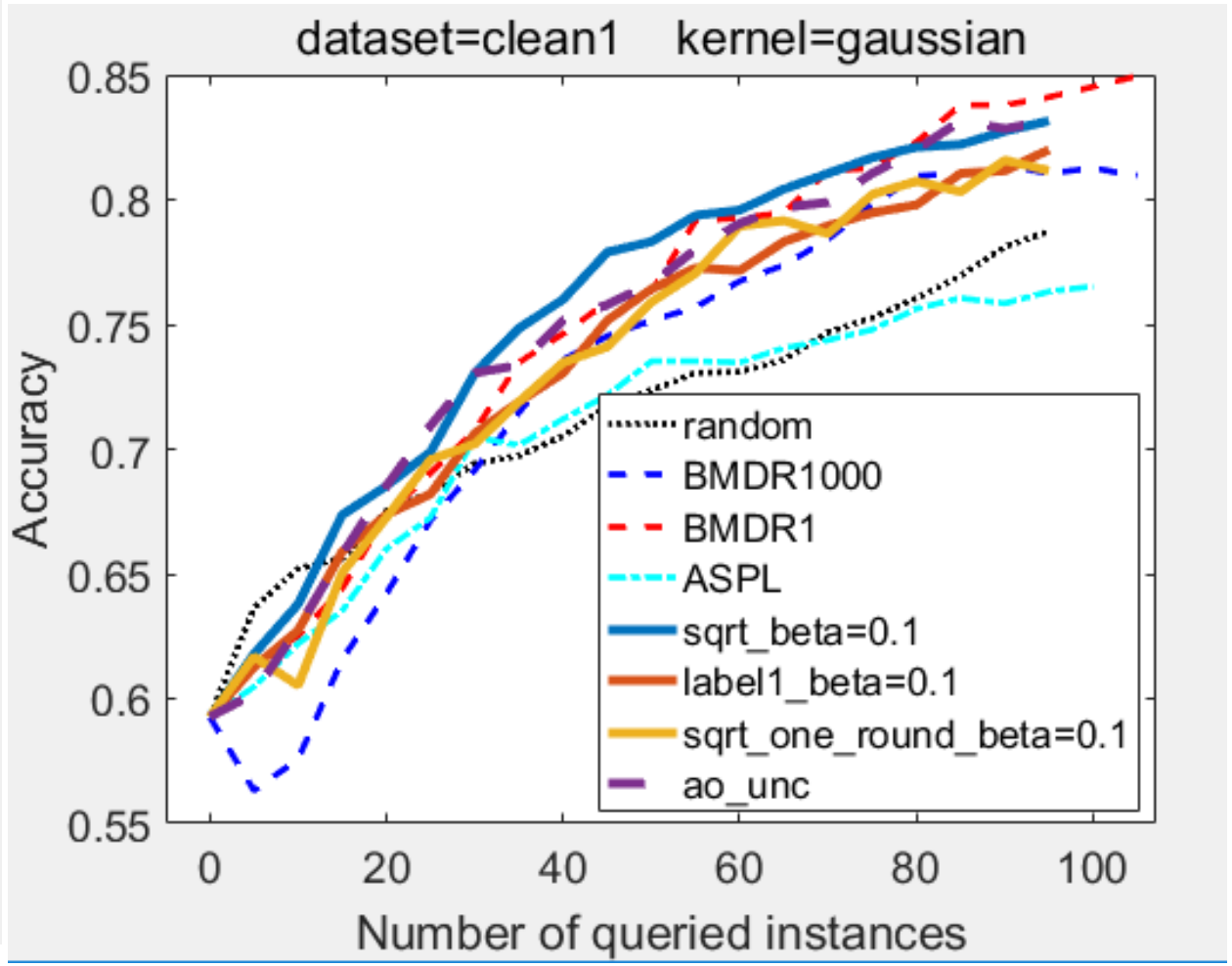
Dataset	thyroid	ionosphere	clean1
# Instances	215	351	476
Dataset	australian	svmguide3	image
# Instances	690	1284	2086
Dataset	krvskp	phoneme	phishing
# Instances	3196	5404	11055

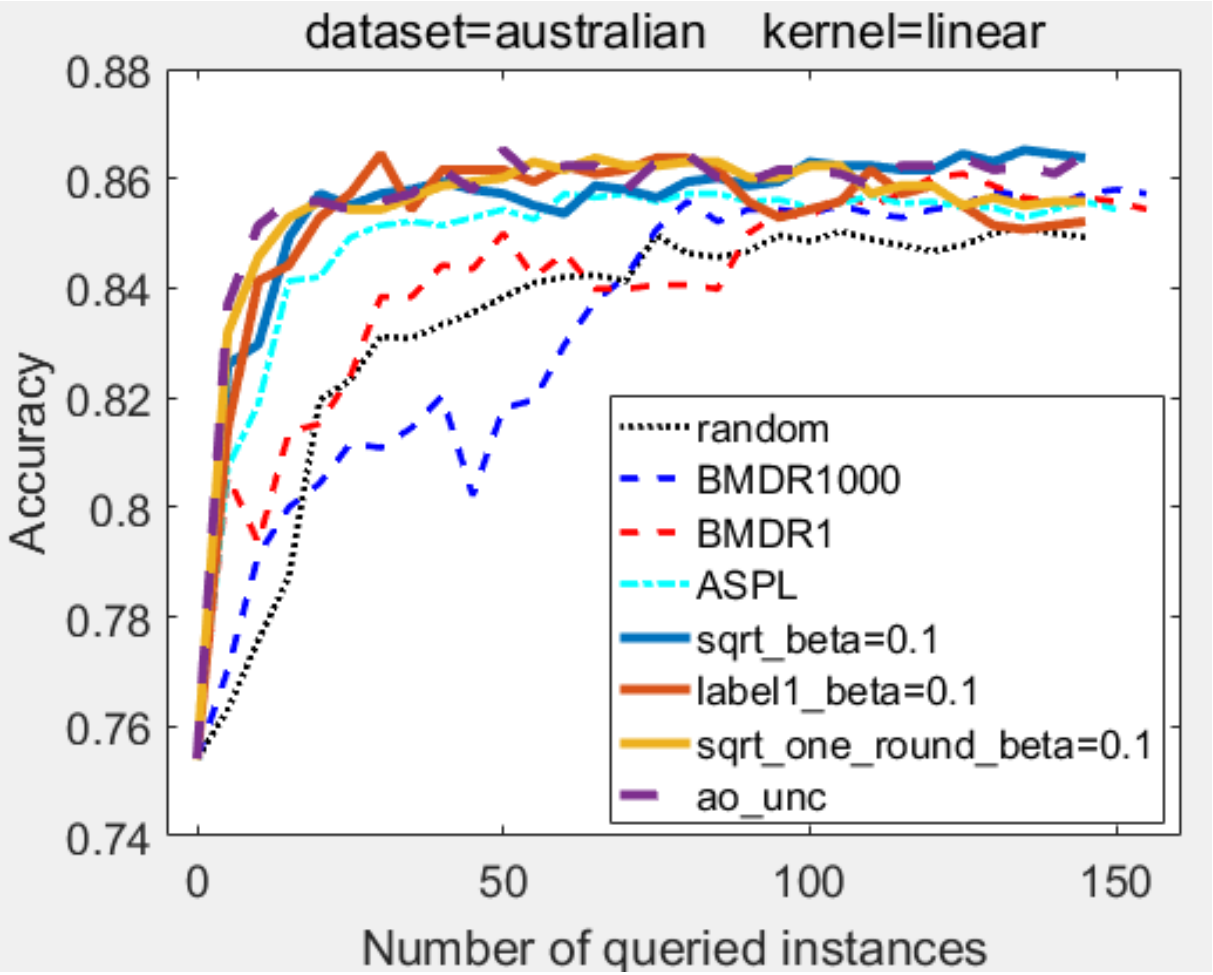
我们的方法重复了5次，对于样本数大于1000的数据集，每次查询随机采样了30%的样本以加速计算

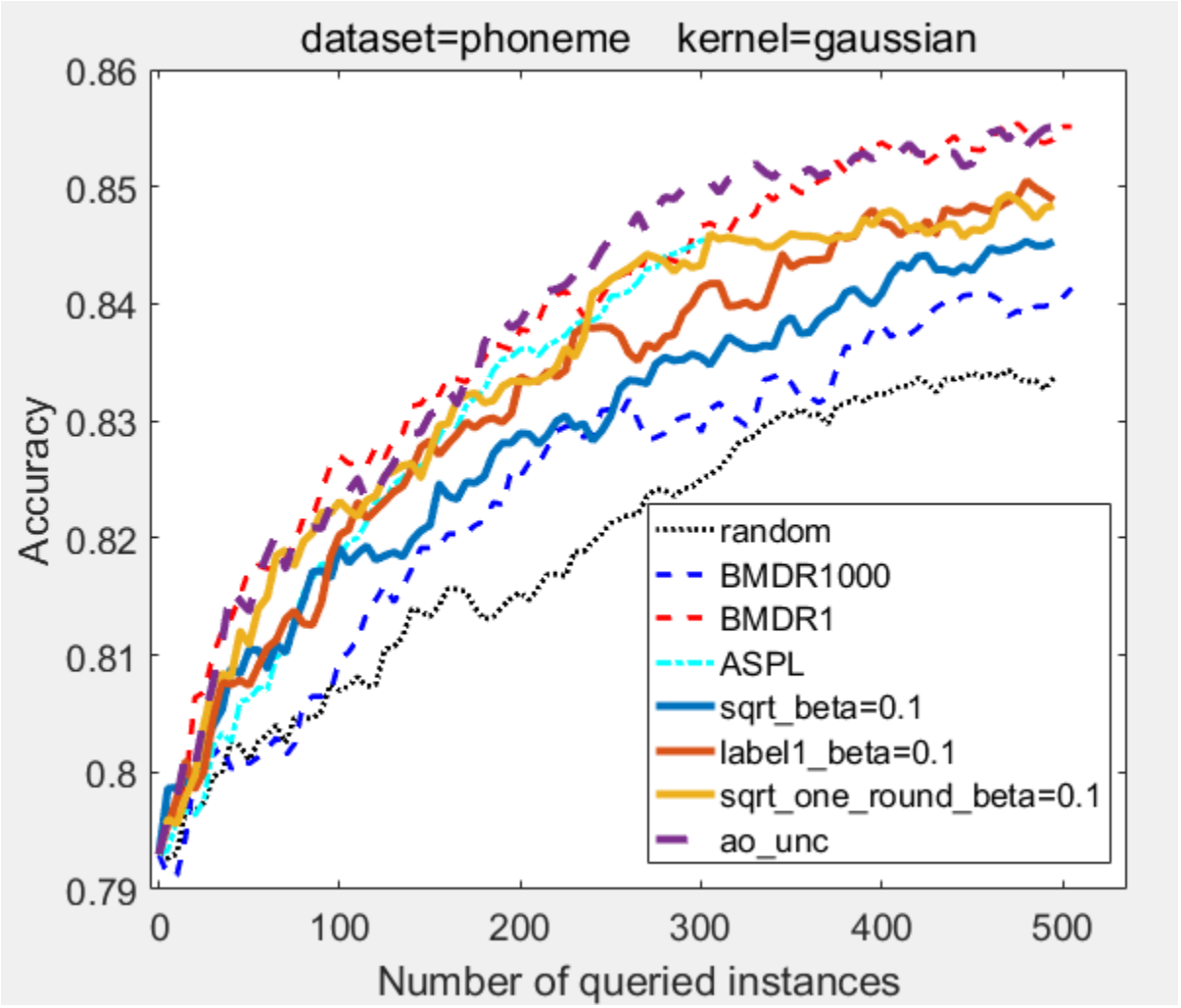

dataset=thyroid kernel=gaussian
Accuracy
Number of queried instances
random
BMDR1000
BMDR1
ASPL
sqrt_beta=0.1
label1_beta=0.1
sqrt_one_round_beta=0.1
ao_unc

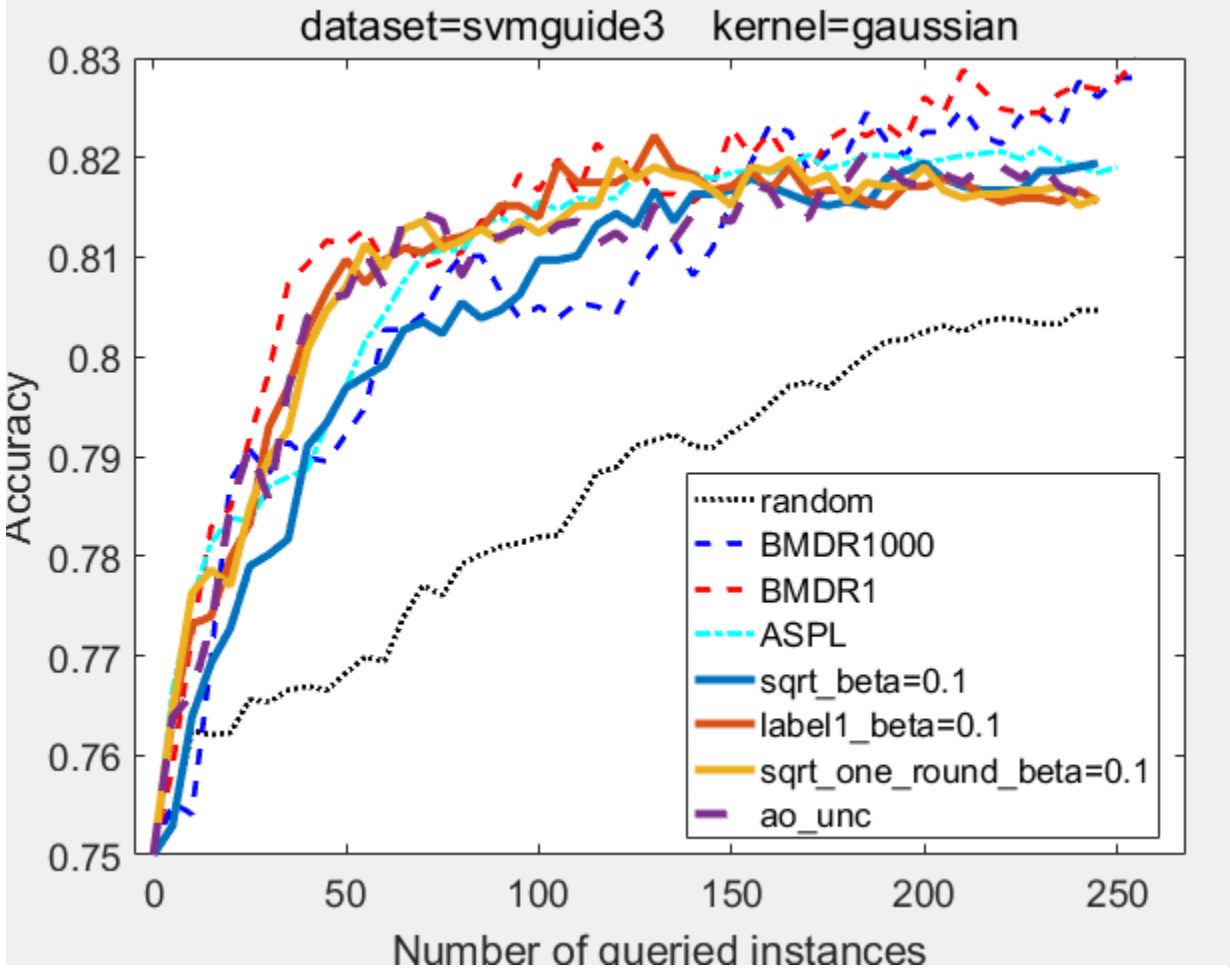

dataset=krvskp kernel=gaussian
Accuracy
Number of queried instances
random
BMDR1000
BMDR1
ASPL
sqrt_beta=0.1
label1_beta=0.1
sqrt_one_round_beta=0.1
ao_unc

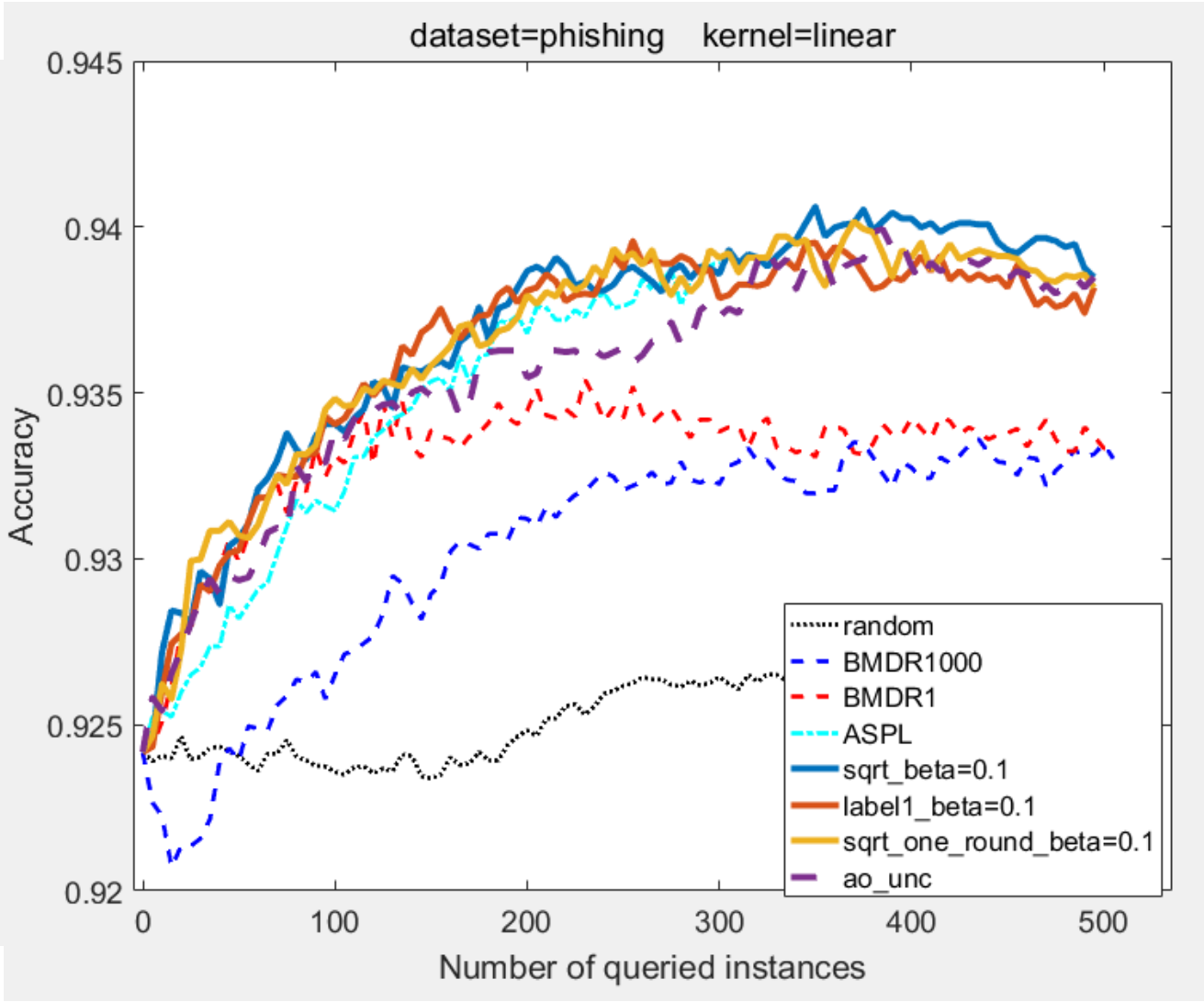

dataset=image kernel=gaussian
Accuracy
Number of queried instances
1
0.95
0.9
0.85
0.8
0
100
200
300
400
random
BMDR1000
BMDR1
ASPL
sqrt_beta=0.1
label1_beta=0.1
sqrt_one_round_beta=0.1
ao_unc


dataset=clean1 kernel=gaussian
Accuracy
Number of queried instances
0.85
0.8
0.75
0.7
0.65
0.6
0.55
0
20
40
60
80
100
random
BMDR1000
BMDR1
ASPL
sqrt_beta=0.1
label1_beta=0.1
sqrt_one_round_beta=0.1
ao_unc


dataset=australian kernel=linear
Accuracy
Number of queried instances
0.88
0.86
0.84
0.82
0.8
0.78
0.76
0.74
0
50
100
150
random
BMDR1000
BMDR1
ASPL
sqrt_beta=0.1
label1_beta=0.1
sqrt_one_round_beta=0.1
ao_unc


dataset=phoneme kernel=gaussian
Accuracy
Number of queried instances
0.86
0.85
0.84
0.83
0.82
0.81
0.8
0.79
0
100
200
300
400
500
random
BMDR1000
BMDR1
ASPL
sqrt_beta=0.1
label1_beta=0.1
sqrt_one_round_beta=0.1
ao_unc


dataset=svmguide3 kernel=gaussian
Accuracy
Number of queried instances
0.83
0.82
0.81
0.8
0.79
0.78
0.77
0.76
0.75
0
50
100
150
200
250
random
BMDR1000
BMDR1
ASPL
sqrt_beta=0.1
label1_beta=0.1
sqrt_one_round_beta=0.1
ao_unc


dataset=phishing kernel=linear
Accuracy
Number of queried instances
0.945
0.94
0.935
0.93
0.925
0.92
0
100
200
300
400
500
random
BMDR1000
BMDR1
ASPL
sqrt_beta=0.1
label1_beta=0.1
sqrt_one_round_beta=0.1
ao_unc