Datasets

- wave_benchmarks.zip (https://ir.library.oregonstate.edu/concern/parent/47429f155/file_sets/jh343z59f)

要求

使用Python Outlier Detection (PyOD) (https://github.com/yzhao062/pyod)或其他已知的工具包来完成分析工作

提交的内容

- 完整的分析代码
- 分析报告：展示分析的思路，详细过程，结果及你的分析
- 所选择的数据集在README中说明，数据文件不要上传到Github中

代码仓库

https://github.com/BinhuiXie/data_mining_project4 (https://github.com/BinhuiXie/data_mining_project4)

In [1]:
```
import pandas as pd
import os
import time
import warnings
import numpy as np

warnings.filterwarnings('ignore')

# timekeeping
timekeeping = time.time()
```

In [2]:
```
PAGEB_ROOT = 'wave/benchmarks'
benchmark_list = os.listdir(PAGEB_ROOT)
print(len(benchmark_list))
```

```
1080
```

1. 数据来源说明

根据论文[1]可知，数据集中会引入4种不同的层次的不相关特征（i.e., noise）。

要创建新的不相关特征，首先从原始母集中随机选择一个特征。 然后，对于原始数据集中的每个数据点，通过从原始数据点的值进行统一采样（替换）来为此特征选择一个值。 结果是新添加的特征与某些原始特征具有相同的边缘分布，但是其值不包含有关数据点异常状态的信息。这保留了真实数据的特质，同时允许引入噪声。

为了简化确定需要多少不相关特征的过程，如果数据集已经具有d维特征，而我们想评估$d^{'}$维，即将成对平均距离增加一个因子α所需的维数，那么

$$d^{'} = \left(\alpha\sqrt{d}\right)^2 \quad (1),$$

其中$\alpha \in \{1.0, 1.2, 1.5, 2.0\}$.

[1] Emmott A, Das S, Dietterich T G, et al. A Meta-Analysis of the Anomaly Detection Problem[J]. arXiv: Artificial Intelligence, 2015.

随机选取一个csv文件，确定该数据集的原始特征有哪些?

In [3]:
```
df = pd.read_csv(os.path.join(PAGEB_ROOT, benchmark_list[0]))
df.info()
df.head()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 3167 entries, 0 to 3166
Data columns (total 90 columns):
 #   Column          Non-Null Count  Dtype  
---  ------          --------------  -----  
 0   point.id        3167 non-null   object 
 1   motherset       3167 non-null   object 
 2   origin          3167 non-null   object 
 3   original.label  3167 non-null   int64  
 4   diff.score      3167 non-null   float64
 5   ground.truth    3167 non-null   object 
 6   V               3167 non-null   float64
 7   V.1             3167 non-null   float64
 8   V.2             3167 non-null   float64
 9   V.3             3167 non-null   float64
 10  V.4             3167 non-null   float64
 11  V.5             3167 non-null   float64
 12  V.6             3167 non-null   float64
 13  V.7             3167 non-null   float64
 14  V.8             3167 non-null   float64
 15  V.9             3167 non-null   float64
 16  V.10            3167 non-null   float64
 17  V.11            3167 non-null   float64
 18  V.12            3167 non-null   float64
```

```
19  V.13            3167 non-null   float64
20  V.14            3167 non-null   float64
21  V.15            3167 non-null   float64
22  V.16            3167 non-null   float64
23  V.17            3167 non-null   float64
24  V.18            3167 non-null   float64
25  V.19            3167 non-null   float64
26  V.20            3167 non-null   float64
27  noise..1        3167 non-null   float64
28  noise..2        3167 non-null   float64
29  noise..3        3167 non-null   float64
30  noise..4        3167 non-null   float64
31  noise..5        3167 non-null   float64
32  noise..6        3167 non-null   float64
33  noise..7        3167 non-null   float64
34  noise..8        3167 non-null   float64
35  noise..9        3167 non-null   float64
36  noise..10       3167 non-null   float64
37  noise..11       3167 non-null   float64
38  noise..12       3167 non-null   float64
39  noise..13       3167 non-null   float64
40  noise..14       3167 non-null   float64
41  noise..15       3167 non-null   float64
42  noise..16       3167 non-null   float64
43  noise..17       3167 non-null   float64
44  noise..18       3167 non-null   float64
45  noise..19       3167 non-null   float64
46  noise..20       3167 non-null   float64
47  noise..21       3167 non-null   float64
48  noise..22       3167 non-null   float64
49  noise..23       3167 non-null   float64
50  noise..24       3167 non-null   float64
51  noise..25       3167 non-null   float64
52  noise..26       3167 non-null   float64
53  noise..27       3167 non-null   float64
54  noise..28       3167 non-null   float64
55  noise..29       3167 non-null   float64
56  noise..30       3167 non-null   float64
57  noise..31       3167 non-null   float64
58  noise..32       3167 non-null   float64
59  noise..33       3167 non-null   float64
60  noise..34       3167 non-null   float64
61  noise..35       3167 non-null   float64
62  noise..36       3167 non-null   float64
63  noise..37       3167 non-null   float64
64  noise..38       3167 non-null   float64
65  noise..39       3167 non-null   float64
66  noise..40       3167 non-null   float64
67  noise..41       3167 non-null   float64
68  noise..42       3167 non-null   float64
69  noise..43       3167 non-null   float64
70  noise..44       3167 non-null   float64
71  noise..45       3167 non-null   float64
```

```
 72  noise..46       3167 non-null   float64
 73  noise..47       3167 non-null   float64
 74  noise..48       3167 non-null   float64
 75  noise..49       3167 non-null   float64
 76  noise..50       3167 non-null   float64
 77  noise..51       3167 non-null   float64
 78  noise..52       3167 non-null   float64
 79  noise..53       3167 non-null   float64
 80  noise..54       3167 non-null   float64
 81  noise..55       3167 non-null   float64
 82  noise..56       3167 non-null   float64
 83  noise..57       3167 non-null   float64
 84  noise..58       3167 non-null   float64
 85  noise..59       3167 non-null   float64
 86  noise..60       3167 non-null   float64
 87  noise..61       3167 non-null   float64
 88  noise..62       3167 non-null   float64
 89  noise..63       3167 non-null   float64
dtypes: float64(85), int64(1), object(4)
memory usage: 2.2+ MB
```

Out[3]:

	point.id	motherset	origin	original.label	diff.score	ground.truth	V
0	wave_point_2031	wave	multiclass	2	0.000419	nominal	0.242400
1	wave_point_2344	wave	multiclass	0	0.133717	anomaly	0.875982
2	wave_point_0849	wave	multiclass	2	0.001321	nominal	-0.094190
3	wave_point_4662	wave	multiclass	0	0.248145	anomaly	0.658188
4	wave_point_1214	wave	multiclass	1	0.042073	nominal	0.064206

5 rows × 90 columns

根据以上的信息我们可以确定，pageb这个数据集的原始特征维度$d = 21$（`V`，`V.1 ~ V.20`）。因此，由等式（1）可知，所有csv文件所包含的列数可能为$27 = \left(1.0 \times \sqrt{21}\right)^2 + 6, 36 = \left(1.2 \times \sqrt{21}\right)^2 + 6,$ $53 = \left(1.5 \times \sqrt{21}\right)^2 + 6, 90 = \left(2.0 \times \sqrt{21}\right)^2 + 6.$

下面我们遍历所有csv文件，验证一下。

In [4]:
```
d_set = set()
d_count = 0
for i in range(len(benchmark_list)):
    df = pd.read_csv(os.path.join(PAGEB_ROOT, benchmark_list[i]))
    d_set.add(len(df.columns))
    d_count += len(df)
print('Possible columns of all csv files:', d_set)
print('Total amount:', d_count)
```

```
Possible columns of all csv files: {90, 27, 36, 53}
Total amount: 2632953
```

2. 实验思路一

将所有的csv文件共同的特征合并，并将合并的数据分成训练集和测试集

2.1 数据特征提取

为了充分利用所提供的数据集完成离群点分析与异常检测，将提取所有csv文件共同的特征（即原始特征，V，V.1 ~ V.20）作为算法或模型的输入，用于检测该条数据是否属于异常点。

In [5]:
```
ORIGIN_FEATURES = ['V', 'V.1', 'V.2', 'V.3', 'V.4', 'V.5', 'V.6', '
V.7', 'V.8', 'V.9','V.10',
                   'V.11', 'V.12', 'V.13', 'V.14', 'V.15', 'V.16',
'V.17', 'V.18', 'V.19', 'V.20',
                   'ground.truth']
def feature_section(benchmark_list):
    concat_data = pd.DataFrame()
    for i in benchmark_list:
        df = pd.read_csv(os.path.join(PAGEB_ROOT, i))
        concat_data = concat_data.append(df[ORIGIN_FEATURES])
    return concat_data
```

In [6]:
```
concat_data = feature_section(benchmark_list=benchmark_list)
concat_data.info()
concat_data.head()
```

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 2632953 entries, 0 to 3009
Data columns (total 22 columns):
 #   Column         Dtype  
---  ------         -----  
 0   V              float64
 1   V.1            float64
 2   V.2            float64
 3   V.3            float64
 4   V.4            float64
 5   V.5            float64
 6   V.6            float64
 7   V.7            float64
 8   V.8            float64
 9   V.9            float64
 10  V.10           float64
 11  V.11           float64
 12  V.12           float64
 13  V.13           float64
 14  V.14           float64
 15  V.15           float64
 16  V.16           float64
 17  V.17           float64
 18  V.18           float64
 19  V.19           float64
 20  V.20           float64
 21  ground.truth   object 
dtypes: float64(21), object(1)
memory usage: 462.0+ MB
```

Out[6]:

	V	V.1	V.2	V.3	V.4	V.5	V.6	V.7	
0	0.242400	-0.739089	0.460923	0.345094	-1.376929	-0.483581	-0.566436	-0.715453	
1	0.875982	-0.255060	-1.525660	-0.891447	0.011388	0.227481	-0.447375	-0.961720	-
2	-0.094190	0.247950	0.090543	-0.863183	-0.423578	-1.172594	-0.348157	-0.566546	-
3	0.658188	0.086607	-0.624964	-0.304973	0.762151	-0.825332	-1.494119	-0.629545	-
4	0.064206	1.851888	0.317821	1.793612	0.791943	1.335416	1.194675	1.374960	-

5 rows × 22 columns

2.2 数据集划分

train set : test set = 8 : 2

In [7]:
```
from sklearn.model_selection import train_test_split

train, test = train_test_split(concat_data, test_size=0.2, random_s
tate=2020)

def data_label_split(data, label_column='ground.truth'):
    x = data.drop(label_column, axis=1)
    y = []
    for i in data[label_column].values:
        if i == 'nominal':
            y.append(0)
        else:
            y.append(1)
    y = np.array(y)
    return x, y

X_train, y_train = data_label_split(train)
X_test, y_test = data_label_split(test)
```

In [8]:
```
from sklearn.utils.multiclass import type_of_target
type_of_target(y_train)
```

Out[8]: 'binary'

2.3 t-SNE降维，用于可视化

对所有的csv文件合并之后的所有数据进行tSNE降维，为了后面可视化

In [9]:
```
from sklearn.manifold import TSNE
# T-SNE Implementation
t0 = time.time()
X_train_reduced_tsne = TSNE(n_components=2, random_state=2020, init
='pca', n_iter=2000).fit_transform(X_train.values)
X_test_reduced_tsne = TSNE(n_components=2, random_state=2020, init=
'pca', n_iter=2000).fit_transform(X_test.values)
t1 = time.time()
print("T-SNE took {:.2} s".format(t1 - t0))
```

```
T-SNE took 9.5e+03 s
```

2.4 模型比较

单一模型

- KNN
- PCA
- LOF

组合模型

- **Average**: average scores of all detectors
- **Maximization**: maximum score across all detectors.
- **Average of Maximum (AOM)**
- **Maximum of Average (MOA)**

ref: https://github.com/yzhao062/pyod/tree/master/examples (https://github.com/yzhao062/pyod/tree/master/examples)

kNN

初始化一个 `pyod.models.knn.KNN` 检测器, 模型拟合, 然后给出预测。

In [10]:
```
# train the KNN detector
from pyod.models.knn import KNN

clf_name = 'KNN'
clf = KNN()
clf.fit(X_train)

# get the prediction labels and outlier scores of the training data
y_train_pred = clf.labels_  # binary labels (0: inliers, 1: outliers)
y_train_scores = clf.decision_scores_  # raw outlier scores

# get the prediction on the test data
y_test_pred = clf.predict(X_test)  # outlier labels (0 or 1)
y_test_scores = clf.decision_function(X_test)  # outlier scores
```

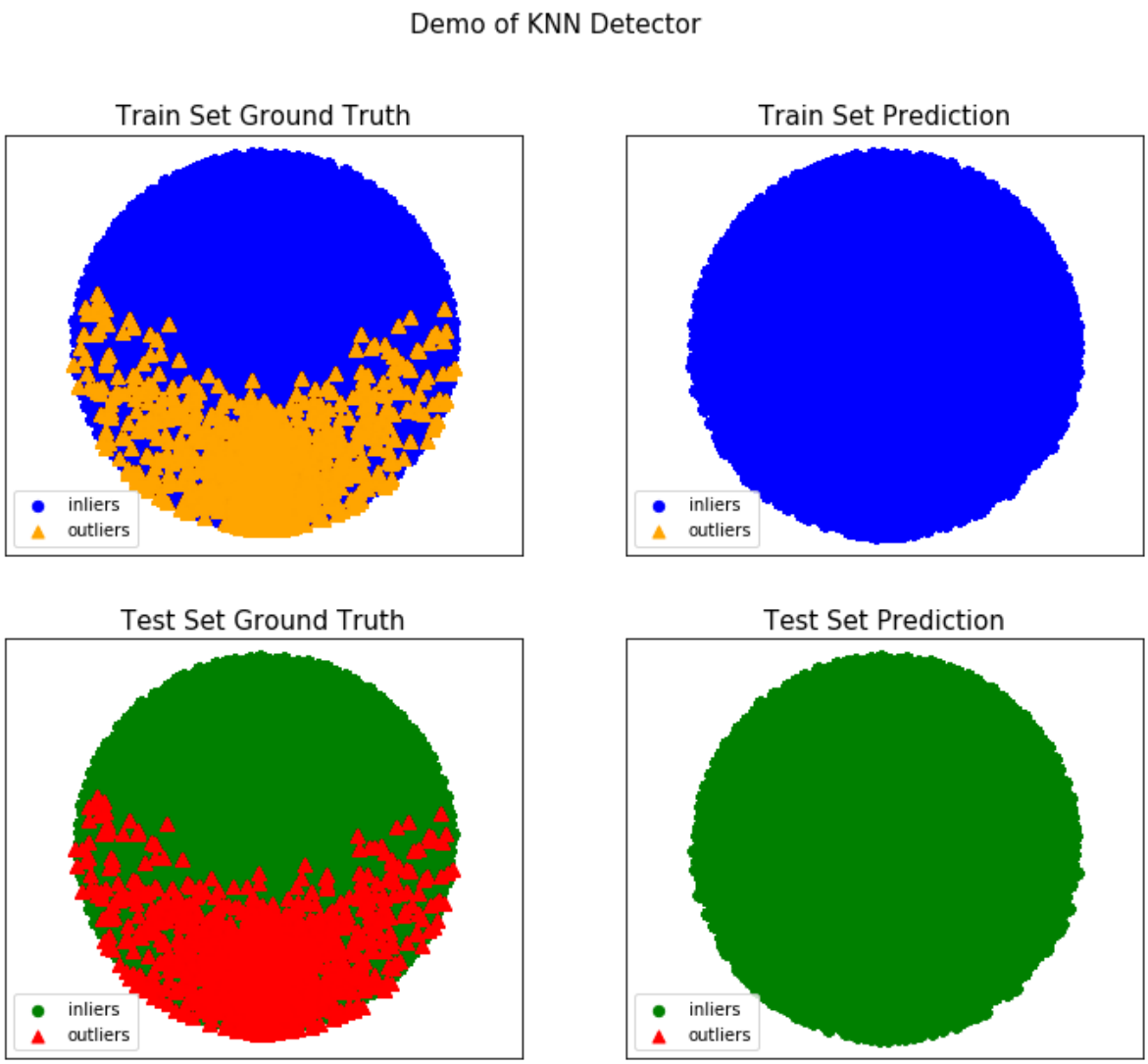
利用 `ROC` 和 `Precision @ Rank` 评估预测。

In [11]:
```
from pyod.utils.data import evaluate_print
# evaluate and print the results
print("\nOn Training Data:")
evaluate_print(clf_name, y_train, y_train_scores)
print("\nOn Test Data:")
evaluate_print(clf_name, y_test, y_test_scores)
```

```
On Training Data:
KNN ROC:0.5, precision @ rank n:0.0

On Test Data:
KNN ROC:0.5, precision @ rank n:0.0
```

可视化 KNN 的结果

In [12]:
```
from pyod.utils.example import visualize
visualize(clf_name, X_train_reduced_tsne, y_train, X_test_reduced_t
sne, y_test, y_train_pred,
          y_test_pred, show_figure=True, save_figure=False)
```



PCA

初始化一个 pyod.models.pca.PCA 检测器, 模型拟合, 然后给出预测。

In [13]:
```
# train PCA detector
from pyod.models.pca import PCA

clf_name = 'PCA'
clf = PCA(n_components=3)
clf.fit(X_train)

# get the prediction labels and outlier scores of the training data
y_train_pred = clf.labels_  # binary labels (0: inliers, 1: outliers)
y_train_scores = clf.decision_scores_  # raw outlier scores

# get the prediction on the test data
y_test_pred = clf.predict(X_test)  # outlier labels (0 or 1)
y_test_scores = clf.decision_function(X_test)  # outlier scores
```

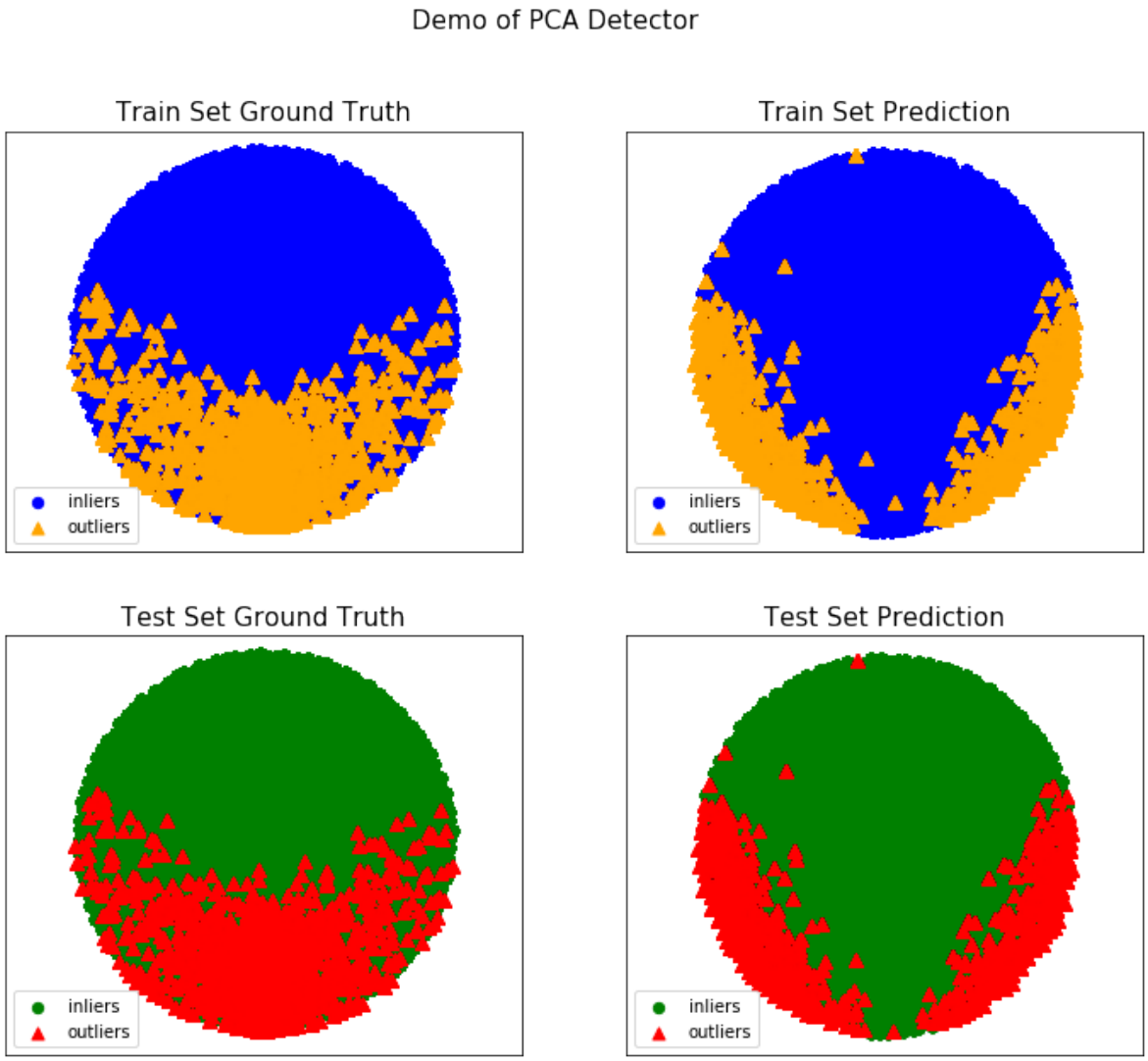
利用 ROC 和 Precision @ Rank 评估预测

In [14]:
```
# evaluate and print the results
print("\nOn Training Data:")
evaluate_print(clf_name, y_train, y_train_scores)
print("\nOn Test Data:")
evaluate_print(clf_name, y_test, y_test_scores)
```

```
On Training Data:
PCA ROC:0.6463, precision @ rank n:0.1699

On Test Data:
PCA ROC:0.6472, precision @ rank n:0.1726
```

可视化 PCA 的结果

In [15]:
```
visualize(clf_name, X_train_reduced_tsne, y_train, X_test_reduced_t
sne, y_test, y_train_pred,
          y_test_pred, show_figure=True, save_figure=False)
```



LOF

初始化一个 `pyod.models.lof.LOF` 检测器, 模型拟合, 然后给出预测。

In [16]:
```
# train LOF detector
from pyod.models.lof import LOF
clf_name = 'LOF'
clf = LOF()
clf.fit(X_train)

# get the prediction labels and outlier scores of the training data
y_train_pred = clf.labels_  # binary labels (0: inliers, 1: outliers)
y_train_scores = clf.decision_scores_  # raw outlier scores

# get the prediction on the test data
y_test_pred = clf.predict(X_test)  # outlier labels (0 or 1)
y_test_scores = clf.decision_function(X_test)  # outlier scores
```

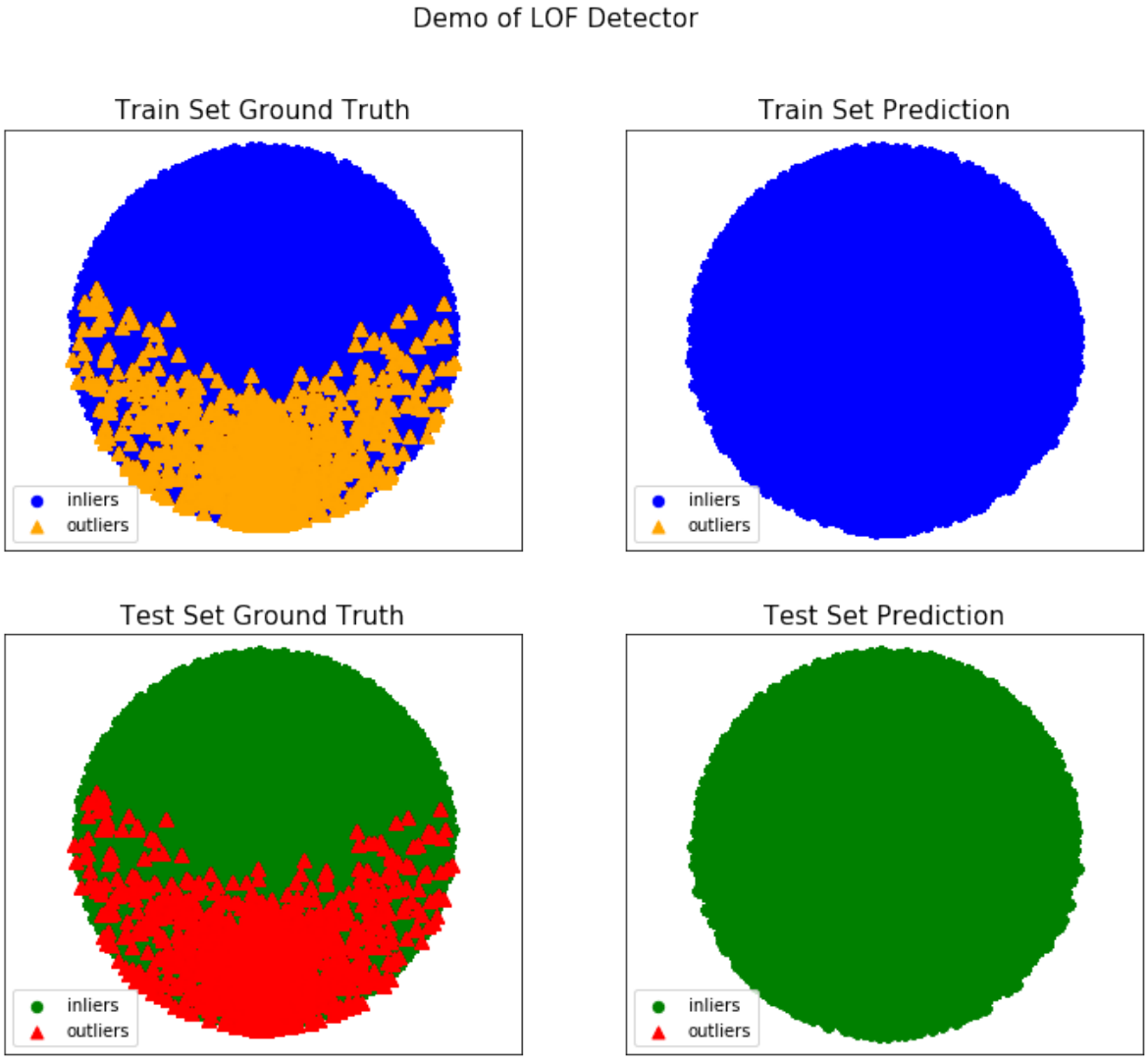
利用 ROC 和 Precision @ Rank 评估预测

In [17]:
```
# evaluate and print the results
print("\nOn Training Data:")
evaluate_print(clf_name, y_train, y_train_scores)
print("\nOn Test Data:")
evaluate_print(clf_name, y_test, y_test_scores)
```

```
On Training Data:
LOF ROC:0.5, precision @ rank n:0.0

On Test Data:
LOF ROC:0.5, precision @ rank n:0.0
```

可视化 LOF 的结果

In [18]:
```
# visualize the results
visualize(clf_name, X_train_reduced_tsne, y_train, X_test_reduced_t
sne, y_test, y_train_pred,
          y_test_pred, show_figure=True, save_figure=False)
```



结合评估的结果和可视化的结果来看，对比的三种单一模型中，最好的是PCA，可视化的结果也显示PCA的预测分布与真实的相接近

Model Combination

用不同的k(10 ~ 200)初始化20个 kNN 离群点检测器，然后得到所有的离群点的分数。

In [19]:
```
from pyod.models.knn import KNN  # kNN detector
from pyod.models.combination import aom, moa, average, maximization
from pyod.utils.utility import standardizer
```

In [20]:
```
# standardizing data for processing
X_train_norm, X_test_norm = standardizer(X_train, X_test)

n_clf = 20  # number of base detectors

# initialize 20 base detectors for combination
k_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100, 110, 120, 130, 1
40, 150, 160, 170, 180, 190, 200]

train_scores = np.zeros([X_train.shape[0], n_clf])
test_scores = np.zeros([X_test.shape[0], n_clf])

print('Combining {n_clf} kNN detectors'.format(n_clf=n_clf))

for i in range(n_clf):
    k = k_list[i]

    clf = KNN(n_neighbors=k, method='largest')
    clf.fit(X_train_norm)

    train_scores[:, i] = clf.decision_scores_
    test_scores[:, i] = clf.decision_function(X_test_norm)
```

```
Combining 20 kNN detectors
```

In [21]:
```
# Decision scores have to be normalized before combination
train_scores_norm, test_scores_norm = standardizer(train_scores, te
st_scores)

# Combination by average
y_by_average = average(test_scores_norm)
# Combination by max
y_by_maximization = maximization(test_scores_norm)
# Combination by aom
y_by_aom = aom(test_scores_norm, n_buckets=5)
# Combination by moa
y_by_moa = moa(test_scores_norm, n_buckets=5)
```

In [22]:
```
print("\nOn Test Data:")
evaluate_print('Combination by Average', y_test, y_by_average)
evaluate_print('Combination by Maximization', y_test, y_by_maximiza
tion)
evaluate_print('Combination by AOM', y_test, y_by_aom)
evaluate_print('Combination by MOA', y_test, y_by_moa)
```

```
On Test Data:
Combination by Average ROC:0.8717, precision @ rank n:1.0
Combination by Maximization ROC:0.8717, precision @ rank n:1.0
Combination by AOM ROC:0.8717, precision @ rank n:1.0
Combination by MOA ROC:0.8717, precision @ rank n:1.0
```

对比单一模型的 KNN ， 使用多个 KNN 并且将所有结果整合之后会得到不错的效果

In [23]:
```
m, s = divmod(time.time()-timekeeping, 60)
h, m = divmod(m, 60)
print ('run time: %02d:%02d:%02d' % (h, m, s))
```

```
run time: 04:50:18
```

2020.6.30 update

对每个csv文件分开处理，每个csv文件训练一个model并测试结果

用 ROC 和 precision @ rank n 测试模型的性能

In [24]:
```
# evaluate using ROC and precision @ rank n

from sklearn.utils import column_or_1d
from sklearn.utils import check_consistent_length
from sklearn.metrics import roc_auc_score

from pyod.utils.utility import precision_n_scores
import numpy as np

def evaluate(y, y_pred):
    y = column_or_1d(y)
    y_pred = column_or_1d(y_pred)
    check_consistent_length(y, y_pred)

#     print('ROC:{roc}, precision @ rank n:{prn}'.format(
#         roc=np.round(roc_auc_score(y, y_pred), decimals=4),
#         prn=np.round(precision_n_scores(y, y_pred), decimals=4)))

    return np.round(roc_auc_score(y, y_pred), decimals=4), np.round
(precision_n_scores(y, y_pred), decimals=4)
```

利用tSNE工具将高维数据降维到2d，然后用散点图可视化

In [25]:
```
# tSNE dimension reduction for visualization

from sklearn.manifold import TSNE

def tsne(original_data):
    # T-SNE Implementation
    t0 = time.time()
    reduced_tsne = TSNE(n_components=2, random_state=2020, init='pc
a').fit_transform(original_data.values)
    t1 = time.time()
    print("T-SNE took {:.2} s".format(t1 - t0))
    return reduced_tsne
```

模型的训练和预测过程

In [26]:
```
# fit model in unsupervised manner and predict

def model_evaluation(clf, data):

    X_train, y_train = data_label_split(data)

    clf.fit(X_train)

    # get the prediction labels and outlier scores of the training
data
    y_train_pred = clf.labels_  # binary labels (0: inliers, 1: out
liers)
    y_train_scores = clf.decision_scores_  # raw outlier scores


    roc, prn = evaluate(y_train, y_train_scores)


    return y_train_pred, roc, prn
```

利用散点图，将真实的数据分布（tSNE降维后）与预测后的分布进行可视化对比

In [27]:
```
import matplotlib.patches as mpatches
import matplotlib.pyplot as plt

def visualization(data, y_pred):

    X_train, y_train = data_label_split(data)
    X_reduced_tsne = tsne(X_train)

    f, (ax0, ax1) = plt.subplots(1, 2, figsize=(16,6))


    blue_patch = mpatches.Patch(color='#0A0AFF', label='nominal')
    red_patch = mpatches.Patch(color='#AF0000', label='anomaly')

     # true visualization
    ax0.scatter(X_reduced_tsne[:,0], X_reduced_tsne[:,1], c=(y_trai
n == 0), cmap='coolwarm', label='nominal', linewidths=2)
    ax0.scatter(X_reduced_tsne[:,0], X_reduced_tsne[:,1], c=(y_trai
n == 1), cmap='coolwarm', label='anomaly', linewidths=2)
    ax0.set_title('ground-truth t-SNE visualization', fontsize=14)

    ax0.legend(handles=[blue_patch, red_patch])
    ax0.set_xticks([])
    ax0.set_yticks([])

    # predicted visualization
    ax1.scatter(X_reduced_tsne[:,0], X_reduced_tsne[:,1], c=(y_pred
== 0), cmap='coolwarm', label='nominal', linewidths=2)
    ax1.scatter(X_reduced_tsne[:,0], X_reduced_tsne[:,1], c=(y_pred
== 1), cmap='coolwarm', label='anomaly', linewidths=2)
    ax1.set_title('prediction t-SNE visualization', fontsize=14)

    ax1.legend(handles=[blue_patch, red_patch])
    ax1.set_xticks([])
    ax1.set_yticks([])

    plt.show()
```

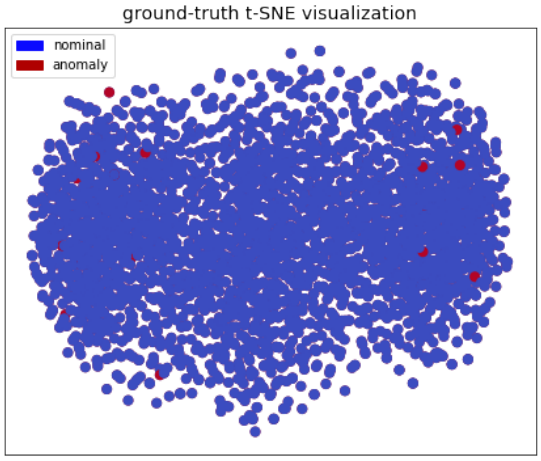
此处只比较三种单一模型 KNN，PCA，LOF ， 可以添加或替换成其他任意一种算法。

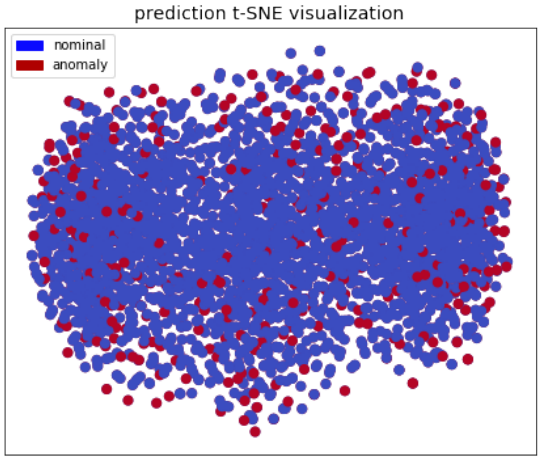
每100个csv文件中，对其中的一个数据集的结果输出并进行了可视化对比。

最后输出所有csv文件的三种模型的评估结果。

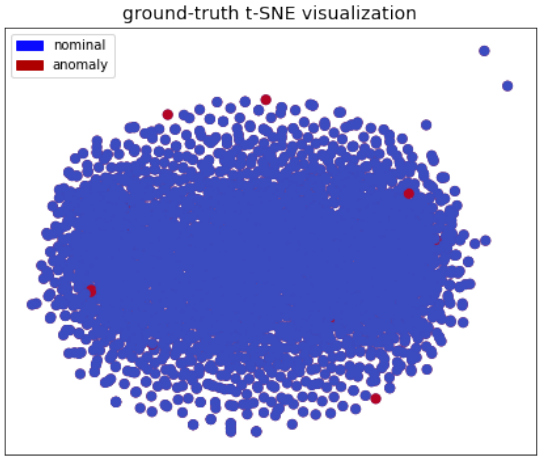
In [30]:
```
from pyod.models.knn import KNN
from pyod.models.pca import PCA
from pyod.models.lof import LOF
import prettytable as pt

# Add or replace models
model_list = {'KNN': KNN(), 'PCA': PCA(), 'LOF': LOF()}

tb = pt.PrettyTable( ['csv_file', 'model', 'ROC', 'precision @ rank n'])
for i in range(len(benchmark_list)):

    df = pd.read_csv(os.path.join(PAGEB_ROOT, benchmark_list[i]))

    df = df.drop(['point.id', 'motherset', 'origin', 'original.label', 'diff.score'], axis=1)

    best_roc = 0
    best_model = None
    best_pred = None
    best_prn = None
    for model in model_list:
        y_train_pred, roc, prn = model_evaluation(model_list[model], df)
        tb.add_row([benchmark_list[i], model, roc, prn])
        if roc >= best_roc:
            best_roc = roc
            best_pred = y_train_pred
            best_model = model
            best_prn = prn

    if (i + 1) % 100 == 0:
        # visualize once / 100 files
        print(i, benchmark_list[i])
        print('best model:', best_model, 'ROC:', best_roc, 'precision @ rank n:', best_prn)
        visualization(df, best_pred)

print(tb)
```

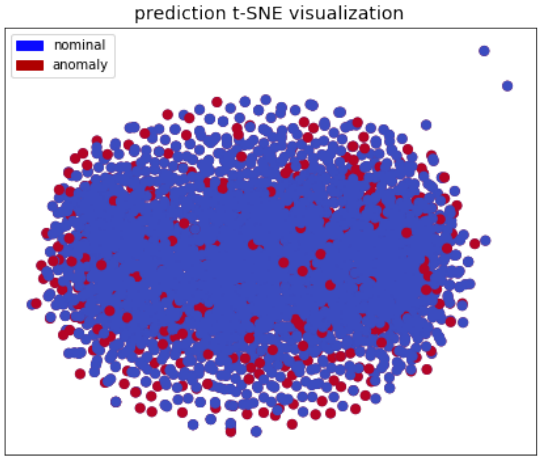
```
99 wave_benchmark_0650.csv
best model: KNN ROC: 0.6631 precision @ rank n: 0.0625
T-SNE took 5.3 s
```



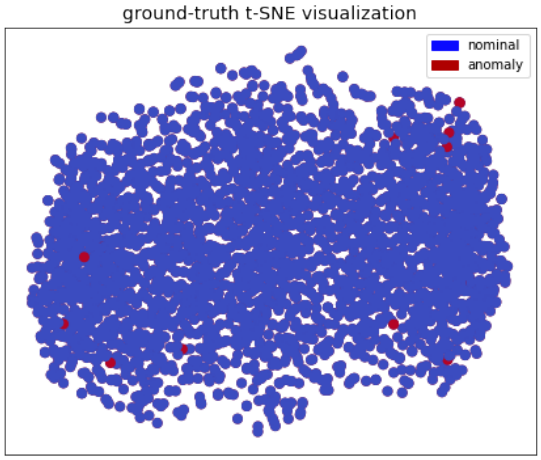


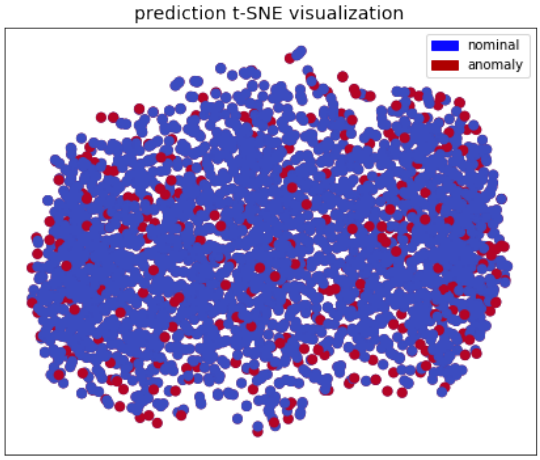

```
199 wave_benchmark_0676.csv
best model: KNN ROC: 0.5597 precision @ rank n: 0.0
T-SNE took 5.9 s
```



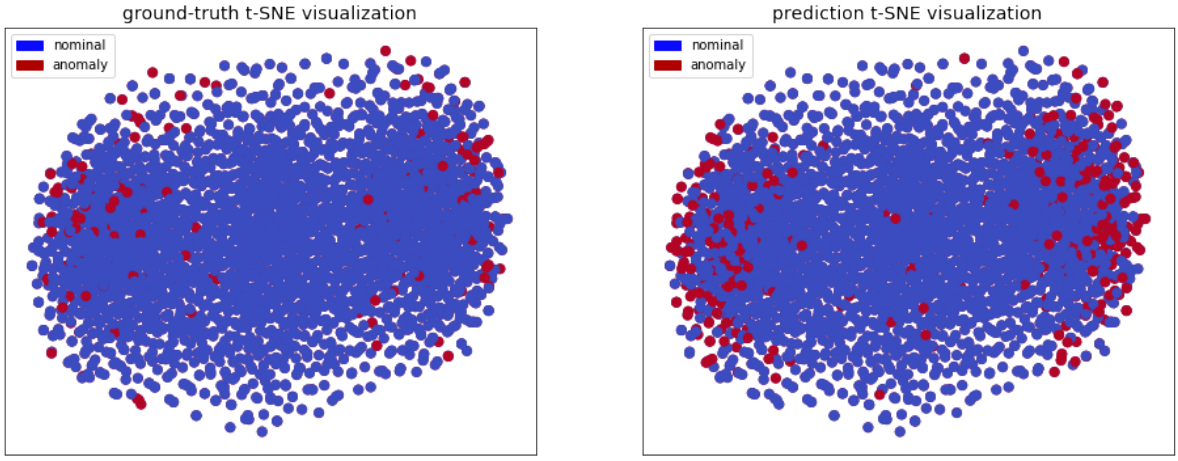



```
299 wave_benchmark_0661.csv
best model: LOF ROC: 0.7718 precision @ rank n: 0.0625
T-SNE took 5.1 s
```

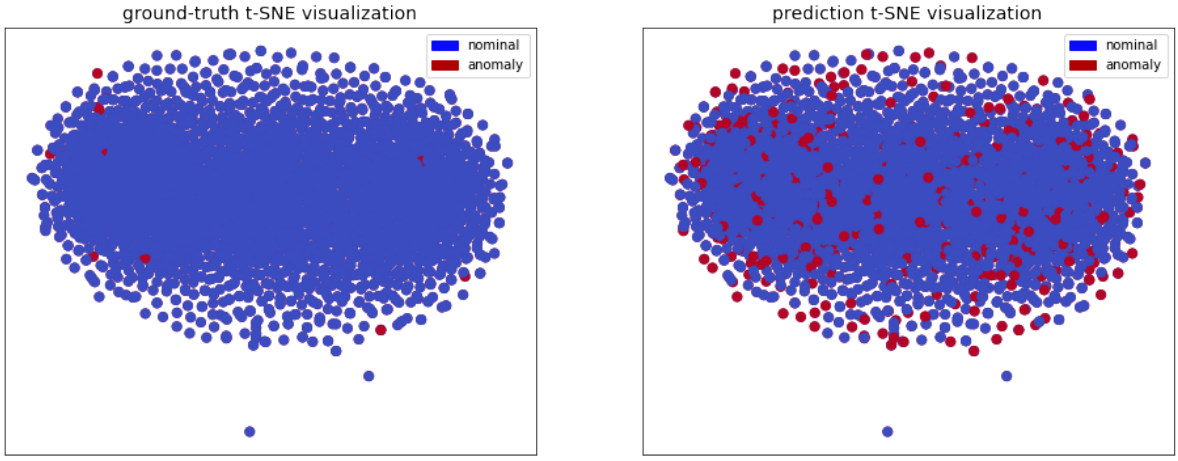




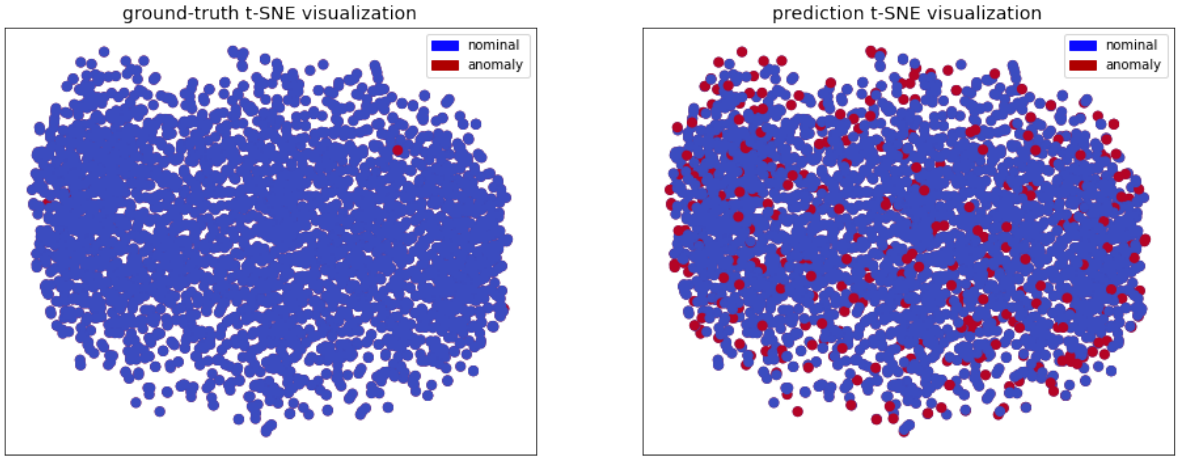

```
399 wave_benchmark_1234.csv
best model: PCA ROC: 0.6585 precision @ rank n: 0.1195
T-SNE took 5.8 s
```



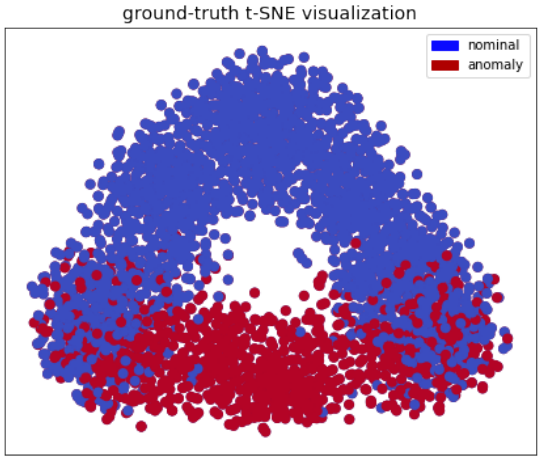

```
499 wave_benchmark_0659.csv
best model: LOF ROC: 0.6881 precision @ rank n: 0.0625
T-SNE took 5.8 s
```

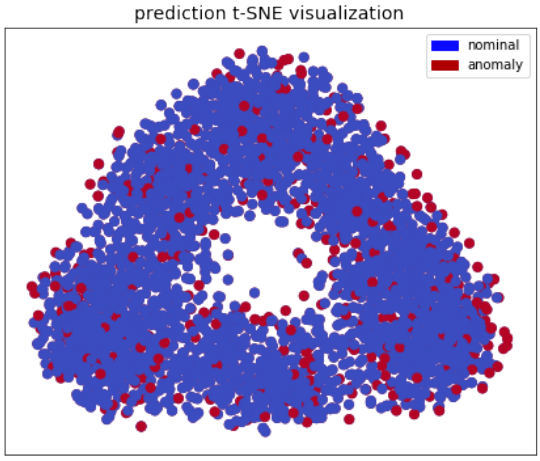



```
599 wave_benchmark_0323.csv
best model: LOF ROC: 0.8845 precision @ rank n: 0.0
T-SNE took 5.2 s
```

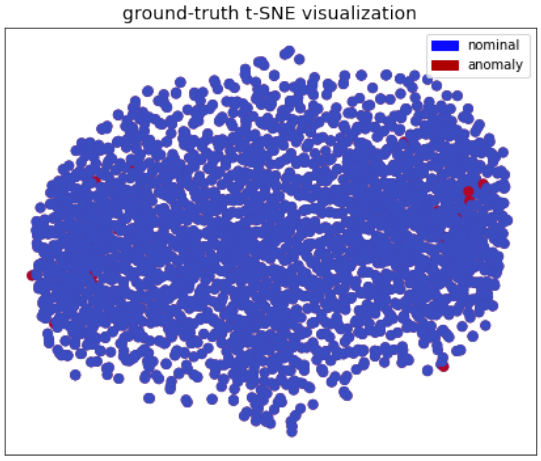


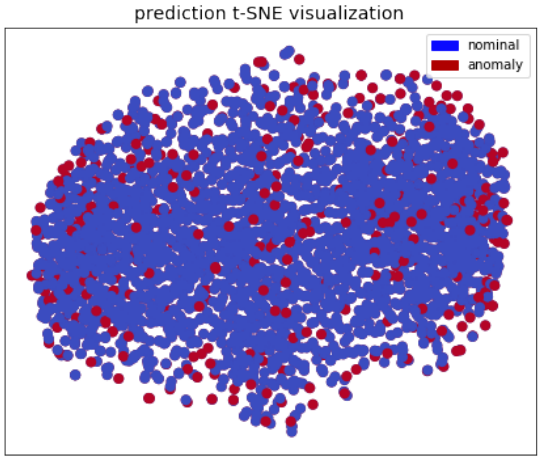

```
699 wave_benchmark_0104.csv
best model: LOF ROC: 0.528 precision @ rank n: 0.331
T-SNE took 4.5 s
```



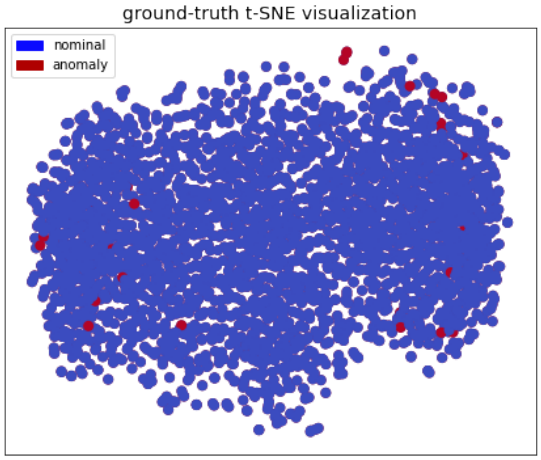


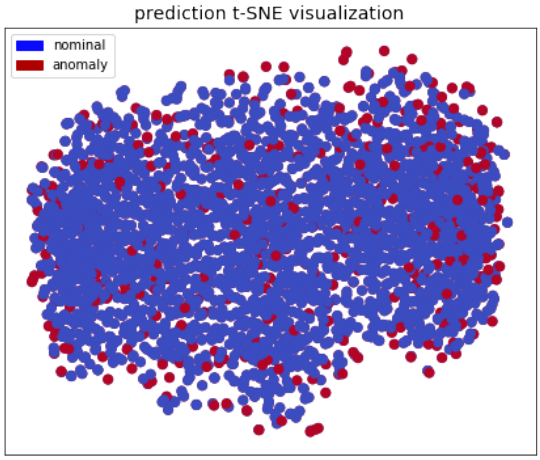

```
799 wave_benchmark_0621.csv
best model: KNN ROC: 0.7867 precision @ rank n: 0.0625
T-SNE took 5.2 s
```



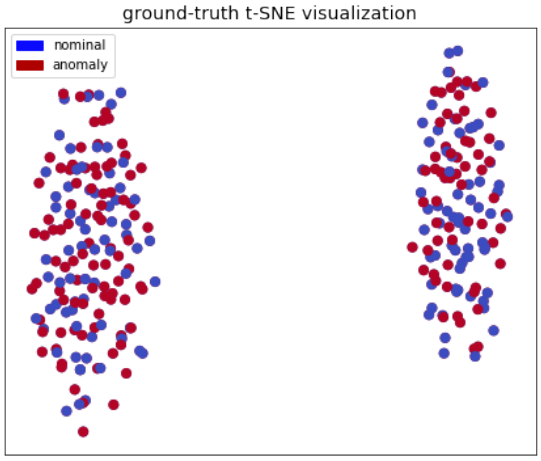


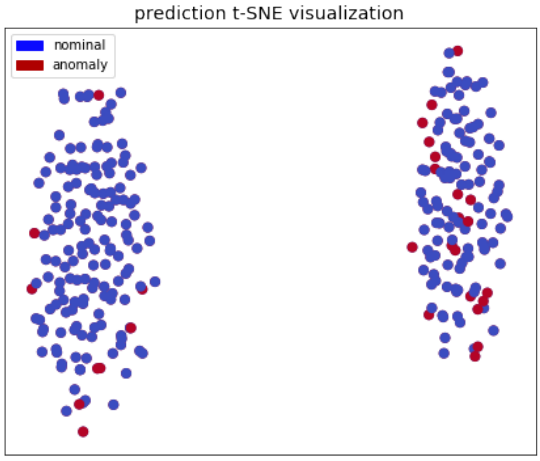

```
899 wave_benchmark_1005.csv
best model: LOF ROC: 0.7417 precision @ rank n: 0.1935
T-SNE took 5.1 s
```






```
999 wave_benchmark_0283.csv
best model: PCA ROC: 0.5099 precision @ rank n: 0.5533
T-SNE took 0.66 s
```





csv_file	model	ROC	precision @ rank n
wave_benchmark_1317.csv	KNN	0.5977	0.1132
wave_benchmark_1317.csv	PCA	0.5684	0.0566
wave_benchmark_1317.csv	LOF	0.5772	0.0943
wave_benchmark_0057.csv	KNN	0.5009	0.3282
wave_benchmark_0057.csv	PCA	0.4928	0.3354
wave_benchmark_0057.csv	LOF	0.5058	0.3262
wave_benchmark_1260.csv	KNN	0.6108	0.0881
wave_benchmark_1260.csv	PCA	0.5892	0.0818
wave_benchmark_1260.csv	LOF	0.6084	0.0881
wave_benchmark_0942.csv	KNN	0.666	0.1613
wave_benchmark_0942.csv	PCA	0.6446	0.0
wave_benchmark_0942.csv	LOF	0.658	0.1935
wave_benchmark_0185.csv	KNN	0.5098	0.4763
wave_benchmark_0185.csv	PCA	0.5035	0.4786
wave_benchmark_0185.csv	LOF	0.5141	0.4786
wave_benchmark_1266.csv	KNN	0.677	0.1384
wave_benchmark_1266.csv	PCA	0.6181	0.0755
wave_benchmark_1266.csv	LOF	0.6766	0.1195
wave_benchmark_0297.csv	KNN	0.4818	0.5319
wave_benchmark_0297.csv	PCA	0.4557	0.5106
wave_benchmark_0297.csv	LOF	0.4638	0.5035
wave_benchmark_1023.csv	KNN	0.4644	0.0
wave_benchmark_1023.csv	PCA	0.593	0.0833
wave_benchmark_1023.csv	LOF	0.5035	0.0
wave_benchmark_0155.csv	KNN	0.5072	0.3527
wave_benchmark_0155.csv	PCA	0.525	0.3774
wave_benchmark_0155.csv	LOF	0.5365	0.3852
wave_benchmark_0156.csv	KNN	0.5017	0.3588
wave_benchmark_0156.csv	PCA	0.5159	0.3743
wave_benchmark_0156.csv	LOF	0.5106	0.3511
wave_benchmark_0934.csv	KNN	0.734	0.0968
wave_benchmark_0934.csv	PCA	0.6838	0.0645
wave_benchmark_0934.csv	LOF	0.712	0.0645
wave_benchmark_0123.csv	KNN	0.4879	0.3712
wave_benchmark_0123.csv	PCA	0.4473	0.362
wave_benchmark_0123.csv	LOF	0.5326	0.4121

wave_benchmark_0440.csv	KNN	0.5862	0.0
wave_benchmark_0440.csv	PCA	0.8364	0.0
wave_benchmark_0440.csv	LOF	0.6877	0.0
wave_benchmark_0963.csv	KNN	0.7925	0.0645
wave_benchmark_0963.csv	PCA	0.6213	0.0323
wave_benchmark_0963.csv	LOF	0.7949	0.0968
wave_benchmark_0217.csv	KNN	0.4539	0.4266
wave_benchmark_0217.csv	PCA	0.4683	0.4605
wave_benchmark_0217.csv	LOF	0.4525	0.4312
wave_benchmark_0178.csv	KNN	0.4649	0.3469
wave_benchmark_0178.csv	PCA	0.4516	0.3529
wave_benchmark_0178.csv	LOF	0.4724	0.356
wave_benchmark_0180.csv	KNN	0.4977	0.3931
wave_benchmark_0180.csv	PCA	0.4694	0.3616
wave_benchmark_0180.csv	LOF	0.5107	0.4059
wave_benchmark_0080.csv	KNN	0.5349	0.3571
wave_benchmark_0080.csv	PCA	0.4972	0.3179
wave_benchmark_0080.csv	LOF	0.5212	0.3344
wave_benchmark_0430.csv	KNN	0.1932	0.0
wave_benchmark_0430.csv	PCA	0.2938	0.0
wave_benchmark_0430.csv	LOF	0.1611	0.0
wave_benchmark_1020.csv	KNN	0.6356	0.0323
wave_benchmark_1020.csv	PCA	0.5888	0.0
wave_benchmark_1020.csv	LOF	0.6161	0.0
wave_benchmark_0998.csv	KNN	0.6264	0.0323
wave_benchmark_0998.csv	PCA	0.6388	0.0
wave_benchmark_0998.csv	LOF	0.6167	0.0323
wave_benchmark_0031.csv	KNN	0.5479	0.3703
wave_benchmark_0031.csv	PCA	0.5638	0.3937
wave_benchmark_0031.csv	LOF	0.5446	0.354
wave_benchmark_0429.csv	KNN	0.4529	0.0
wave_benchmark_0429.csv	PCA	0.4254	0.0
wave_benchmark_0429.csv	LOF	0.5476	0.0
wave_benchmark_1004.csv	KNN	0.7011	0.0645
wave_benchmark_1004.csv	PCA	0.7107	0.0
wave_benchmark_1004.csv	LOF	0.7075	0.0645
wave_benchmark_0139.csv	KNN	0.4843	0.3765
wave_benchmark_0139.csv	PCA	0.4505	0.3453
wave_benchmark_0139.csv	LOF	0.4999	0.3862
wave_benchmark_1228.csv	KNN	0.6631	0.1761
wave_benchmark_1228.csv	PCA	0.6855	0.1006
wave_benchmark_1228.csv	LOF	0.6444	0.1698
wave_benchmark_1638.csv	KNN	0.4637	0.0637
wave_benchmark_1638.csv	PCA	0.5521	0.121
wave_benchmark_1638.csv	LOF	0.4853	0.0701
wave_benchmark_1580.csv	KNN	0.5841	0.1194
wave_benchmark_1580.csv	PCA	0.5459	0.1164
wave_benchmark_1580.csv	LOF	0.5544	0.1164
wave_benchmark_0929.csv	KNN	0.6159	0.0
wave_benchmark_0929.csv	PCA	0.6489	0.0323
wave_benchmark_0929.csv	LOF	0.6362	0.0323
wave_benchmark_0144.csv	KNN	0.5258	0.3828
wave_benchmark_0144.csv	PCA	0.5225	0.3873

wave_benchmark_0144.csv	LOF	0.5636	0.41	
wave_benchmark_0046.csv	KNN	0.5139	0.3468	
wave_benchmark_0046.csv	PCA	0.4904	0.3576	
wave_benchmark_0046.csv	LOF	0.5068	0.3409	
wave_benchmark_0355.csv	KNN	0.8266	0.0	
wave_benchmark_0355.csv	PCA	0.6436	0.0	
wave_benchmark_0355.csv	LOF	0.8384	0.0	
wave_benchmark_1508.csv	KNN	0.6345	0.1821	
wave_benchmark_1508.csv	PCA	0.5982	0.1403	
wave_benchmark_1508.csv	LOF	0.6059	0.1552	
wave_benchmark_0905.csv	KNN	0.6958	0.0968	
wave_benchmark_0905.csv	PCA	0.7133	0.0323	
wave_benchmark_0905.csv	LOF	0.6567	0.0968	
wave_benchmark_1225.csv	KNN	0.7156	0.1698	
wave_benchmark_1225.csv	PCA	0.7191	0.1321	
wave_benchmark_1225.csv	LOF	0.6945	0.1384	
wave_benchmark_0343.csv	KNN	0.7363	0.25	
wave_benchmark_0343.csv	PCA	0.6409	0.0	
wave_benchmark_0343.csv	LOF	0.7743	0.0	
wave_benchmark_1026.csv	KNN	0.5468	0.0	
wave_benchmark_1026.csv	PCA	0.6196	0.0	
wave_benchmark_1026.csv	LOF	0.568	0.0	
wave_benchmark_0931.csv	KNN	0.6416	0.0	
wave_benchmark_0931.csv	PCA	0.675	0.0	
wave_benchmark_0931.csv	LOF	0.6256	0.0	
wave_benchmark_0935.csv	KNN	0.71	0.0645	
wave_benchmark_0935.csv	PCA	0.6693	0.0323	
wave_benchmark_0935.csv	LOF	0.7014	0.0645	
wave_benchmark_1623.csv	KNN	0.4057	0.0503	
wave_benchmark_1623.csv	PCA	0.6064	0.1321	
wave_benchmark_1623.csv	LOF	0.4558	0.0818	
wave_benchmark_0457.csv	KNN	0.4157	0.0	
wave_benchmark_0457.csv	PCA	0.4488	0.0	
wave_benchmark_0457.csv	LOF	0.4498	0.0	
wave_benchmark_0243.csv	KNN	0.5111	0.5737	
wave_benchmark_0243.csv	PCA	0.6057	0.6158	
wave_benchmark_0243.csv	LOF	0.4976	0.5789	
wave_benchmark_1013.csv	KNN	0.6885	0.0323	
wave_benchmark_1013.csv	PCA	0.6249	0.0645	
wave_benchmark_1013.csv	LOF	0.6962	0.0323	
wave_benchmark_0396.csv	KNN	0.5982	0.0	
wave_benchmark_0396.csv	PCA	0.6779	0.0	
wave_benchmark_0396.csv	LOF	0.5544	0.0	
wave_benchmark_1631.csv	KNN	0.4567	0.0764	
wave_benchmark_1631.csv	PCA	0.5695	0.1146	
wave_benchmark_1631.csv	LOF	0.4801	0.0892	
wave_benchmark_1632.csv	KNN	0.4283	0.0645	
wave_benchmark_1632.csv	PCA	0.5747	0.1355	
wave_benchmark_1632.csv	LOF	0.4486	0.0774	
wave_benchmark_0400.csv	KNN	0.8002	0.0	
wave_benchmark_0400.csv	PCA	0.885	0.0	
wave_benchmark_0400.csv	LOF	0.8277	0.0	
wave_benchmark_0175.csv	KNN	0.4685	0.3544	

wave_benchmark_0175.csv	PCA	0.4525	0.3594	
wave_benchmark_0175.csv	LOF	0.4983	0.3844	
wave_benchmark_0751.csv	KNN	0.3604	0.0	
wave_benchmark_0751.csv	PCA	0.5253	0.0	
wave_benchmark_0751.csv	LOF	0.3958	0.0	
wave_benchmark_0977.csv	KNN	0.6056	0.0	
wave_benchmark_0977.csv	PCA	0.5478	0.0	
wave_benchmark_0977.csv	LOF	0.6071	0.0	
wave_benchmark_0018.csv	KNN	0.519	0.3417	
wave_benchmark_0018.csv	PCA	0.5042	0.3458	
wave_benchmark_0018.csv	LOF	0.522	0.3367	
wave_benchmark_1586.csv	KNN	0.6422	0.2149	
wave_benchmark_1586.csv	PCA	0.6634	0.203	
wave_benchmark_1586.csv	LOF	0.6254	0.1672	
wave_benchmark_0099.csv	KNN	0.5359	0.3568	
wave_benchmark_0099.csv	PCA	0.5559	0.3692	
wave_benchmark_0099.csv	LOF	0.5432	0.3609	
wave_benchmark_0454.csv	KNN	0.6648	0.0	
wave_benchmark_0454.csv	PCA	0.9203	0.0	
wave_benchmark_0454.csv	LOF	0.6418	0.0	
wave_benchmark_1262.csv	KNN	0.7197	0.1761	
wave_benchmark_1262.csv	PCA	0.6392	0.0692	
wave_benchmark_1262.csv	LOF	0.6811	0.0881	
wave_benchmark_0105.csv	KNN	0.5077	0.3429	
wave_benchmark_0105.csv	PCA	0.4775	0.332	
wave_benchmark_0105.csv	LOF	0.5129	0.333	
wave_benchmark_1635.csv	KNN	0.4591	0.071	
wave_benchmark_1635.csv	PCA	0.5939	0.1742	
wave_benchmark_1635.csv	LOF	0.4864	0.1161	
wave_benchmark_1230.csv	KNN	0.7014	0.1761	
wave_benchmark_1230.csv	PCA	0.6793	0.1195	
wave_benchmark_1230.csv	LOF	0.6693	0.1572	
wave_benchmark_0027.csv	KNN	0.5669	0.3902	
wave_benchmark_0027.csv	PCA	0.5664	0.4032	
wave_benchmark_0027.csv	LOF	0.5369	0.3543	
wave_benchmark_1563.csv	KNN	0.6704	0.2149	
wave_benchmark_1563.csv	PCA	0.5946	0.1612	
wave_benchmark_1563.csv	LOF	0.6262	0.1284	
wave_benchmark_0939.csv	KNN	0.646	0.0323	
wave_benchmark_0939.csv	PCA	0.6546	0.0323	
wave_benchmark_0939.csv	LOF	0.6386	0.0323	
wave_benchmark_0728.csv	KNN	0.4839	0.0	
wave_benchmark_0728.csv	PCA	0.5934	0.0	
wave_benchmark_0728.csv	LOF	0.4985	0.0	
wave_benchmark_1289.csv	KNN	0.6571	0.1447	
wave_benchmark_1289.csv	PCA	0.6774	0.0943	
wave_benchmark_1289.csv	LOF	0.643	0.1384	
wave_benchmark_0055.csv	KNN	0.5067	0.3447	
wave_benchmark_0055.csv	PCA	0.4936	0.3389	
wave_benchmark_0055.csv	LOF	0.5108	0.3535	
wave_benchmark_1019.csv	KNN	0.6235	0.0	
wave_benchmark_1019.csv	PCA	0.5761	0.0	
wave_benchmark_1019.csv	LOF	0.6143	0.0	

wave_benchmark_0748.csv	KNN	0.4588	0.0
wave_benchmark_0748.csv	PCA	0.7327	0.0
wave_benchmark_0748.csv	LOF	0.5008	0.0
wave_benchmark_1007.csv	KNN	0.8074	0.1935
wave_benchmark_1007.csv	PCA	0.6196	0.0323
wave_benchmark_1007.csv	LOF	0.812	0.129
wave_benchmark_1246.csv	KNN	0.6674	0.1195
wave_benchmark_1246.csv	PCA	0.6033	0.0818
wave_benchmark_1246.csv	LOF	0.6498	0.1132
wave_benchmark_1253.csv	KNN	0.622	0.1195
wave_benchmark_1253.csv	PCA	0.6143	0.0881
wave_benchmark_1253.csv	LOF	0.6138	0.1006
wave_benchmark_1022.csv	KNN	0.427	0.0
wave_benchmark_1022.csv	PCA	0.4722	0.0
wave_benchmark_1022.csv	LOF	0.4986	0.0
wave_benchmark_0066.csv	KNN	0.5352	0.3634
wave_benchmark_0066.csv	PCA	0.4934	0.3413
wave_benchmark_0066.csv	LOF	0.5195	0.3544
wave_benchmark_0717.csv	KNN	0.6966	0.0
wave_benchmark_0717.csv	PCA	0.6162	0.0
wave_benchmark_0717.csv	LOF	0.6753	0.0
wave_benchmark_0154.csv	KNN	0.5004	0.3844
wave_benchmark_0154.csv	PCA	0.5064	0.3833
wave_benchmark_0154.csv	LOF	0.5226	0.3941
wave_benchmark_0143.csv	KNN	0.5232	0.3799
wave_benchmark_0143.csv	PCA	0.5205	0.3821
wave_benchmark_0143.csv	LOF	0.5691	0.4246
wave_benchmark_0281.csv	KNN	0.463	0.5097
wave_benchmark_0281.csv	PCA	0.5014	0.5256
wave_benchmark_0281.csv	LOF	0.4627	0.5128
wave_benchmark_1251.csv	KNN	0.6041	0.0818
wave_benchmark_1251.csv	PCA	0.5611	0.0881
wave_benchmark_1251.csv	LOF	0.5923	0.0503
wave_benchmark_0701.csv	KNN	0.7411	0.0625
wave_benchmark_0701.csv	PCA	0.5699	0.0
wave_benchmark_0701.csv	LOF	0.7295	0.0
wave_benchmark_0318.csv	KNN	0.7	0.0
wave_benchmark_0318.csv	PCA	0.6589	0.0
wave_benchmark_0318.csv	LOF	0.7026	0.0
wave_benchmark_0360.csv	KNN	0.4362	0.0
wave_benchmark_0360.csv	PCA	0.4195	0.0
wave_benchmark_0360.csv	LOF	0.3927	0.0
wave_benchmark_0049.csv	KNN	0.5398	0.3706
wave_benchmark_0049.csv	PCA	0.4964	0.3541
wave_benchmark_0049.csv	LOF	0.5324	0.3599
wave_benchmark_0321.csv	KNN	0.6853	0.0
wave_benchmark_0321.csv	PCA	0.7045	0.0
wave_benchmark_0321.csv	LOF	0.7266	0.0
wave_benchmark_0424.csv	KNN	0.6494	0.0
wave_benchmark_0424.csv	PCA	0.2918	0.0
wave_benchmark_0424.csv	LOF	0.5794	0.5
wave_benchmark_1573.csv	KNN	0.6146	0.1881
wave_benchmark_1573.csv	PCA	0.5594	0.1164

wave_benchmark_1573.csv	LOF	0.5928	0.1672
wave_benchmark_0165.csv	KNN	0.4813	0.373
wave_benchmark_0165.csv	PCA	0.434	0.3591
wave_benchmark_0165.csv	LOF	0.5218	0.3978
wave_benchmark_0011.csv	KNN	0.5093	0.3242
wave_benchmark_0011.csv	PCA	0.4929	0.3354
wave_benchmark_0011.csv	LOF	0.5143	0.3343
wave_benchmark_0379.csv	KNN	0.8306	0.0
wave_benchmark_0379.csv	PCA	0.6499	0.0
wave_benchmark_0379.csv	LOF	0.8355	0.0
wave_benchmark_0230.csv	KNN	0.5001	0.4865
wave_benchmark_0230.csv	PCA	0.4986	0.4821
wave_benchmark_0230.csv	LOF	0.5024	0.4888
wave_benchmark_0258.csv	KNN	0.5601	0.5795
wave_benchmark_0258.csv	PCA	0.616	0.642
wave_benchmark_0258.csv	LOF	0.5567	0.5795
wave_benchmark_0967.csv	KNN	0.7453	0.0968
wave_benchmark_0967.csv	PCA	0.6451	0.0323
wave_benchmark_0967.csv	LOF	0.7589	0.129
wave_benchmark_1624.csv	KNN	0.4276	0.0649
wave_benchmark_1624.csv	PCA	0.5559	0.1494
wave_benchmark_1624.csv	LOF	0.4514	0.0779
wave_benchmark_0251.csv	KNN	0.5006	0.5333
wave_benchmark_0251.csv	PCA	0.5718	0.6
wave_benchmark_0251.csv	LOF	0.4854	0.5222
wave_benchmark_0147.csv	KNN	0.5101	0.372
wave_benchmark_0147.csv	PCA	0.5171	0.3929
wave_benchmark_0147.csv	LOF	0.5706	0.4371
wave_benchmark_0907.csv	KNN	0.6715	0.0968
wave_benchmark_0907.csv	PCA	0.6619	0.0323
wave_benchmark_0907.csv	LOF	0.6643	0.0968
wave_benchmark_1016.csv	KNN	0.6619	0.0645
wave_benchmark_1016.csv	PCA	0.6359	0.0323
wave_benchmark_1016.csv	LOF	0.635	0.0645
wave_benchmark_0777.csv	KNN	0.4372	0.1667
wave_benchmark_0777.csv	PCA	0.4083	0.0
wave_benchmark_0777.csv	LOF	0.4261	0.0
wave_benchmark_0730.csv	KNN	0.4356	0.0
wave_benchmark_0730.csv	PCA	0.4955	0.0
wave_benchmark_0730.csv	LOF	0.5141	0.0
wave_benchmark_1037.csv	KNN	0.3664	0.0
wave_benchmark_1037.csv	PCA	0.418	0.0
wave_benchmark_1037.csv	LOF	0.3853	0.0
wave_benchmark_0698.csv	KNN	0.5965	0.0
wave_benchmark_0698.csv	PCA	0.6432	0.0
wave_benchmark_0698.csv	LOF	0.5894	0.0
wave_benchmark_0252.csv	KNN	0.4427	0.5351
wave_benchmark_0252.csv	PCA	0.5121	0.5838
wave_benchmark_0252.csv	LOF	0.4637	0.5568
wave_benchmark_0650.csv	KNN	0.6631	0.0625
wave_benchmark_0650.csv	PCA	0.6405	0.0
wave_benchmark_0650.csv	LOF	0.6111	0.0625
wave_benchmark_0641.csv	KNN	0.7517	0.0

wave_benchmark_0641.csv	PCA	0.5143	0.0	
wave_benchmark_0641.csv	LOF	0.7494	0.0625	
wave_benchmark_1555.csv	KNN	0.5949	0.1522	
wave_benchmark_1555.csv	PCA	0.5511	0.1254	
wave_benchmark_1555.csv	LOF	0.5788	0.1373	
wave_benchmark_0172.csv	KNN	0.4685	0.3631	
wave_benchmark_0172.csv	PCA	0.4441	0.3522	
wave_benchmark_0172.csv	LOF	0.4813	0.381	
wave_benchmark_1574.csv	KNN	0.5842	0.1433	
wave_benchmark_1574.csv	PCA	0.5726	0.1284	
wave_benchmark_1574.csv	LOF	0.5615	0.1194	
wave_benchmark_1634.csv	KNN	0.4287	0.0506	
wave_benchmark_1634.csv	PCA	0.5661	0.1519	
wave_benchmark_1634.csv	LOF	0.4499	0.0633	
wave_benchmark_1252.csv	KNN	0.6602	0.1698	
wave_benchmark_1252.csv	PCA	0.6348	0.1447	
wave_benchmark_1252.csv	LOF	0.6392	0.1509	
wave_benchmark_0458.csv	KNN	0.4194	0.0	
wave_benchmark_0458.csv	PCA	0.5553	0.0	
wave_benchmark_0458.csv	LOF	0.4654	0.0	
wave_benchmark_0709.csv	KNN	0.7009	0.0625	
wave_benchmark_0709.csv	PCA	0.5983	0.0	
wave_benchmark_0709.csv	LOF	0.694	0.0625	
wave_benchmark_1551.csv	KNN	0.5662	0.1493	
wave_benchmark_1551.csv	PCA	0.5415	0.1194	
wave_benchmark_1551.csv	LOF	0.5437	0.1164	
wave_benchmark_1075.csv	KNN	0.3425	0.0	
wave_benchmark_1075.csv	PCA	0.3999	0.0	
wave_benchmark_1075.csv	LOF	0.3863	0.0	
wave_benchmark_0605.csv	KNN	0.7592	0.0	
wave_benchmark_0605.csv	PCA	0.6475	0.0	
wave_benchmark_0605.csv	LOF	0.7556	0.0	
wave_benchmark_0190.csv	KNN	0.4885	0.4596	
wave_benchmark_0190.csv	PCA	0.5109	0.4642	
wave_benchmark_0190.csv	LOF	0.4829	0.448	
wave_benchmark_0032.csv	KNN	0.5602	0.3882	
wave_benchmark_0032.csv	PCA	0.5649	0.38	
wave_benchmark_0032.csv	LOF	0.5408	0.3616	
wave_benchmark_1276.csv	KNN	0.6	0.0755	
wave_benchmark_1276.csv	PCA	0.5835	0.0818	
wave_benchmark_1276.csv	LOF	0.5804	0.0503	
wave_benchmark_1522.csv	KNN	0.6654	0.2299	
wave_benchmark_1522.csv	PCA	0.6757	0.209	
wave_benchmark_1522.csv	LOF	0.6206	0.1612	
wave_benchmark_0092.csv	KNN	0.5239	0.3611	
wave_benchmark_0092.csv	PCA	0.5515	0.4033	
wave_benchmark_0092.csv	LOF	0.5252	0.3621	
wave_benchmark_0735.csv	KNN	0.5655	0.0	
wave_benchmark_0735.csv	PCA	0.6093	0.0	
wave_benchmark_0735.csv	LOF	0.6059	0.0	
wave_benchmark_1027.csv	KNN	0.2871	0.0	
wave_benchmark_1027.csv	PCA	0.5701	0.0	
wave_benchmark_1027.csv	LOF	0.3088	0.0	

wave_benchmark_0311.csv	KNN	0.6977	0.0	
wave_benchmark_0311.csv	PCA	0.4796	0.0	
wave_benchmark_0311.csv	LOF	0.6686	0.0	
wave_benchmark_0965.csv	KNN	0.8203	0.1613	
wave_benchmark_0965.csv	PCA	0.681	0.0645	
wave_benchmark_0965.csv	LOF	0.8115	0.1613	
wave_benchmark_0711.csv	KNN	0.763	0.0	
wave_benchmark_0711.csv	PCA	0.5533	0.0	
wave_benchmark_0711.csv	LOF	0.7671	0.0	
wave_benchmark_0303.csv	KNN	0.733	0.0	
wave_benchmark_0303.csv	PCA	0.7309	0.0	
wave_benchmark_0303.csv	LOF	0.6658	0.0	
wave_benchmark_0081.csv	KNN	0.5844	0.4052	
wave_benchmark_0081.csv	PCA	0.5738	0.4243	
wave_benchmark_0081.csv	LOF	0.5342	0.343	
wave_benchmark_0779.csv	KNN	0.4264	0.1667	
wave_benchmark_0779.csv	PCA	0.506	0.1667	
wave_benchmark_0779.csv	LOF	0.46	0.1667	
wave_benchmark_1270.csv	KNN	0.6483	0.1698	
wave_benchmark_1270.csv	PCA	0.593	0.0692	
wave_benchmark_1270.csv	LOF	0.6493	0.1447	
wave_benchmark_1002.csv	KNN	0.7532	0.0323	
wave_benchmark_1002.csv	PCA	0.6381	0.0323	
wave_benchmark_1002.csv	LOF	0.7333	0.0323	
wave_benchmark_0272.csv	KNN	0.4937	0.5359	
wave_benchmark_0272.csv	PCA	0.5545	0.5801	
wave_benchmark_0272.csv	LOF	0.4988	0.5249	
wave_benchmark_0264.csv	KNN	0.5381	0.5938	
wave_benchmark_0264.csv	PCA	0.6036	0.6354	
wave_benchmark_0264.csv	LOF	0.5158	0.599	
wave_benchmark_1588.csv	KNN	0.6394	0.2	
wave_benchmark_1588.csv	PCA	0.6526	0.1672	
wave_benchmark_1588.csv	LOF	0.6221	0.1761	
wave_benchmark_0714.csv	KNN	0.7175	0.0625	
wave_benchmark_0714.csv	PCA	0.4905	0.0	
wave_benchmark_0714.csv	LOF	0.6969	0.0625	
wave_benchmark_1543.csv	KNN	0.6518	0.1881	
wave_benchmark_1543.csv	PCA	0.5757	0.1343	
wave_benchmark_1543.csv	LOF	0.589	0.1284	
wave_benchmark_1535.csv	KNN	0.6315	0.203	
wave_benchmark_1535.csv	PCA	0.6322	0.1791	
wave_benchmark_1535.csv	LOF	0.6154	0.1701	
wave_benchmark_1633.csv	KNN	0.4728	0.0897	
wave_benchmark_1633.csv	PCA	0.5987	0.1731	
wave_benchmark_1633.csv	LOF	0.5036	0.0833	
wave_benchmark_1598.csv	KNN	0.5688	0.1313	
wave_benchmark_1598.csv	PCA	0.5947	0.1463	
wave_benchmark_1598.csv	LOF	0.5617	0.1373	
wave_benchmark_0267.csv	KNN	0.462	0.497	
wave_benchmark_0267.csv	PCA	0.5501	0.5449	
wave_benchmark_0267.csv	LOF	0.4368	0.4731	
wave_benchmark_0645.csv	KNN	0.7338	0.0625	
wave_benchmark_0645.csv	PCA	0.6389	0.0	

wave_benchmark_0645.csv	LOF	0.741	0.0625	
wave_benchmark_0255.csv	KNN	0.5197	0.5753	
wave_benchmark_0255.csv	PCA	0.5554	0.5914	
wave_benchmark_0255.csv	LOF	0.5164	0.5699	
wave_benchmark_0715.csv	KNN	0.7126	0.0625	
wave_benchmark_0715.csv	PCA	0.5553	0.0	
wave_benchmark_0715.csv	LOF	0.7448	0.0	
wave_benchmark_0773.csv	KNN	0.376	0.0	
wave_benchmark_0773.csv	PCA	0.3723	0.0	
wave_benchmark_0773.csv	LOF	0.3918	0.0	
wave_benchmark_0921.csv	KNN	0.742	0.0323	
wave_benchmark_0921.csv	PCA	0.6877	0.0645	
wave_benchmark_0921.csv	LOF	0.736	0.0645	
wave_benchmark_0994.csv	KNN	0.6901	0.0968	
wave_benchmark_0994.csv	PCA	0.6395	0.0645	
wave_benchmark_0994.csv	LOF	0.6637	0.0645	
wave_benchmark_0298.csv	KNN	0.4811	0.4937	
wave_benchmark_0298.csv	PCA	0.4949	0.519	
wave_benchmark_0298.csv	LOF	0.4851	0.5063	
wave_benchmark_0169.csv	KNN	0.4824	0.357	
wave_benchmark_0169.csv	PCA	0.4522	0.36	
wave_benchmark_0169.csv	LOF	0.53	0.4077	
wave_benchmark_1526.csv	KNN	0.6525	0.2179	
wave_benchmark_1526.csv	PCA	0.6442	0.197	
wave_benchmark_1526.csv	LOF	0.6261	0.1821	
wave_benchmark_0628.csv	KNN	0.6502	0.0625	
wave_benchmark_0628.csv	PCA	0.6473	0.0	
wave_benchmark_0628.csv	LOF	0.6119	0.0625	
wave_benchmark_0088.csv	KNN	0.5664	0.3631	
wave_benchmark_0088.csv	PCA	0.5688	0.4015	
wave_benchmark_0088.csv	LOF	0.5228	0.3216	
wave_benchmark_1334.csv	KNN	0.4474	0.0462	
wave_benchmark_1334.csv	PCA	0.5337	0.0923	
wave_benchmark_1334.csv	LOF	0.4904	0.0462	
wave_benchmark_1503.csv	KNN	0.6597	0.197	
wave_benchmark_1503.csv	PCA	0.6069	0.1403	
wave_benchmark_1503.csv	LOF	0.5966	0.1463	
wave_benchmark_0085.csv	KNN	0.5685	0.3865	
wave_benchmark_0085.csv	PCA	0.584	0.4202	
wave_benchmark_0085.csv	LOF	0.5532	0.3507	
wave_benchmark_1558.csv	KNN	0.5963	0.1881	
wave_benchmark_1558.csv	PCA	0.578	0.1284	
wave_benchmark_1558.csv	LOF	0.5872	0.1761	
wave_benchmark_0771.csv	KNN	0.5376	0.0	
wave_benchmark_0771.csv	PCA	0.5667	0.0	
wave_benchmark_0771.csv	LOF	0.4892	0.0	
wave_benchmark_0187.csv	KNN	0.5145	0.4989	
wave_benchmark_0187.csv	PCA	0.5116	0.4815	
wave_benchmark_0187.csv	LOF	0.5086	0.4967	
wave_benchmark_0753.csv	KNN	0.4915	0.0	
wave_benchmark_0753.csv	PCA	0.6316	0.1667	
wave_benchmark_0753.csv	LOF	0.4953	0.0	
wave_benchmark_1512.csv	KNN	0.597	0.1701	

wave_benchmark_1512.csv	PCA	0.5747	0.1522	
wave_benchmark_1512.csv	LOF	0.5762	0.1522	
wave_benchmark_0275.csv	KNN	0.4938	0.5864	
wave_benchmark_0275.csv	PCA	0.5622	0.6073	
wave_benchmark_0275.csv	LOF	0.4928	0.5759	
wave_benchmark_1249.csv	KNN	0.6498	0.1132	
wave_benchmark_1249.csv	PCA	0.6302	0.0818	
wave_benchmark_1249.csv	LOF	0.6471	0.0881	
wave_benchmark_0991.csv	KNN	0.6768	0.129	
wave_benchmark_0991.csv	PCA	0.6921	0.0645	
wave_benchmark_0991.csv	LOF	0.681	0.129	
wave_benchmark_1640.csv	KNN	0.4624	0.0774	
wave_benchmark_1640.csv	PCA	0.5619	0.1355	
wave_benchmark_1640.csv	LOF	0.4844	0.1097	
wave_benchmark_1569.csv	KNN	0.6239	0.1403	
wave_benchmark_1569.csv	PCA	0.5658	0.1224	
wave_benchmark_1569.csv	LOF	0.5818	0.1015	
wave_benchmark_0138.csv	KNN	0.4685	0.3667	
wave_benchmark_0138.csv	PCA	0.4536	0.3647	
wave_benchmark_0138.csv	LOF	0.4873	0.3804	
wave_benchmark_1611.csv	KNN	0.5903	0.1493	
wave_benchmark_1611.csv	PCA	0.5608	0.1284	
wave_benchmark_1611.csv	LOF	0.569	0.1463	
wave_benchmark_0100.csv	KNN	0.5236	0.364	
wave_benchmark_0100.csv	PCA	0.5428	0.3824	
wave_benchmark_0100.csv	LOF	0.5246	0.3621	
wave_benchmark_0667.csv	KNN	0.761	0.0625	
wave_benchmark_0667.csv	PCA	0.5629	0.0	
wave_benchmark_0667.csv	LOF	0.7361	0.0625	
wave_benchmark_0388.csv	KNN	0.8644	0.0	
wave_benchmark_0388.csv	PCA	0.8514	0.0	
wave_benchmark_0388.csv	LOF	0.8772	0.0	
wave_benchmark_0397.csv	KNN	0.9246	0.0	
wave_benchmark_0397.csv	PCA	0.9327	0.0	
wave_benchmark_0397.csv	LOF	0.8989	0.3333	
wave_benchmark_0964.csv	KNN	0.7921	0.0968	
wave_benchmark_0964.csv	PCA	0.6188	0.0	
wave_benchmark_0964.csv	LOF	0.7933	0.0645	
wave_benchmark_0211.csv	KNN	0.4998	0.4888	
wave_benchmark_0211.csv	PCA	0.5008	0.4732	
wave_benchmark_0211.csv	LOF	0.4938	0.4799	
wave_benchmark_0199.csv	KNN	0.4812	0.4617	
wave_benchmark_0199.csv	PCA	0.4845	0.455	
wave_benchmark_0199.csv	LOF	0.4812	0.4685	
wave_benchmark_0159.csv	KNN	0.4948	0.3486	
wave_benchmark_0159.csv	PCA	0.5091	0.3589	
wave_benchmark_0159.csv	LOF	0.5114	0.3544	
wave_benchmark_0317.csv	KNN	0.6576	0.0	
wave_benchmark_0317.csv	PCA	0.6354	0.0	
wave_benchmark_0317.csv	LOF	0.6479	0.0	
wave_benchmark_1626.csv	KNN	0.444	0.0654	
wave_benchmark_1626.csv	PCA	0.5682	0.1438	
wave_benchmark_1626.csv	LOF	0.4666	0.0784	

wave_benchmark_1239.csv	KNN	0.6053	0.1006
wave_benchmark_1239.csv	PCA	0.6137	0.1069
wave_benchmark_1239.csv	LOF	0.5979	0.0692
wave_benchmark_0666.csv	KNN	0.7223	0.0
wave_benchmark_0666.csv	PCA	0.6359	0.0
wave_benchmark_0666.csv	LOF	0.733	0.0
wave_benchmark_0381.csv	KNN	0.9536	0.0
wave_benchmark_0381.csv	PCA	0.7139	0.0
wave_benchmark_0381.csv	LOF	0.9532	0.0
wave_benchmark_1223.csv	KNN	0.6985	0.195
wave_benchmark_1223.csv	PCA	0.6917	0.1132
wave_benchmark_1223.csv	LOF	0.6815	0.1321
wave_benchmark_0299.csv	KNN	0.4751	0.4894
wave_benchmark_0299.csv	PCA	0.5056	0.5106
wave_benchmark_0299.csv	LOF	0.4701	0.4752
wave_benchmark_0613.csv	KNN	0.6363	0.0
wave_benchmark_0613.csv	PCA	0.6162	0.0625
wave_benchmark_0613.csv	LOF	0.5974	0.0
wave_benchmark_1278.csv	KNN	0.5997	0.1132
wave_benchmark_1278.csv	PCA	0.5672	0.0881
wave_benchmark_1278.csv	LOF	0.5759	0.0755
wave_benchmark_0712.csv	KNN	0.7168	0.0
wave_benchmark_0712.csv	PCA	0.6269	0.0
wave_benchmark_0712.csv	LOF	0.7347	0.0
wave_benchmark_0742.csv	KNN	0.2412	0.0
wave_benchmark_0742.csv	PCA	0.5722	0.0
wave_benchmark_0742.csv	LOF	0.3221	0.0
wave_benchmark_0353.csv	KNN	0.601	0.0
wave_benchmark_0353.csv	PCA	0.4957	0.0
wave_benchmark_0353.csv	LOF	0.6085	0.0
wave_benchmark_0268.csv	KNN	0.4838	0.5225
wave_benchmark_0268.csv	PCA	0.5948	0.6124
wave_benchmark_0268.csv	LOF	0.4993	0.5618
wave_benchmark_0045.csv	KNN	0.5391	0.3512
wave_benchmark_0045.csv	PCA	0.4904	0.3431
wave_benchmark_0045.csv	LOF	0.5219	0.332
wave_benchmark_0337.csv	KNN	0.6682	0.0
wave_benchmark_0337.csv	PCA	0.6436	0.0
wave_benchmark_0337.csv	LOF	0.6606	0.0
wave_benchmark_1560.csv	KNN	0.5563	0.1164
wave_benchmark_1560.csv	PCA	0.5556	0.1224
wave_benchmark_1560.csv	LOF	0.5375	0.1104
wave_benchmark_1229.csv	KNN	0.6716	0.1509
wave_benchmark_1229.csv	PCA	0.6711	0.1069
wave_benchmark_1229.csv	LOF	0.6695	0.1447
wave_benchmark_1513.csv	KNN	0.6208	0.1851
wave_benchmark_1513.csv	PCA	0.5898	0.1552
wave_benchmark_1513.csv	LOF	0.6036	0.1463
wave_benchmark_1596.csv	KNN	0.5924	0.1463
wave_benchmark_1596.csv	PCA	0.6025	0.1582
wave_benchmark_1596.csv	LOF	0.5808	0.1313
wave_benchmark_0235.csv	KNN	0.5122	0.4738
wave_benchmark_0235.csv	PCA	0.5083	0.4897

wave_benchmark_0235.csv	LOF	0.511	0.4601	
wave_benchmark_1254.csv	KNN	0.61	0.0881	
wave_benchmark_1254.csv	PCA	0.5931	0.044	
wave_benchmark_1254.csv	LOF	0.6023	0.0755	
wave_benchmark_0996.csv	KNN	0.656	0.0	
wave_benchmark_0996.csv	PCA	0.6636	0.0323	
wave_benchmark_0996.csv	LOF	0.6237	0.0	
wave_benchmark_0477.csv	KNN	0.4591	0.0	
wave_benchmark_0477.csv	PCA	0.393	0.0	
wave_benchmark_0477.csv	LOF	0.4921	0.0	
wave_benchmark_0902.csv	KNN	0.7635	0.0968	
wave_benchmark_0902.csv	PCA	0.6747	0.0323	
wave_benchmark_0902.csv	LOF	0.7444	0.0645	
wave_benchmark_1257.csv	KNN	0.6084	0.1258	
wave_benchmark_1257.csv	PCA	0.5786	0.0692	
wave_benchmark_1257.csv	LOF	0.5935	0.0943	
wave_benchmark_1330.csv	KNN	0.4596	0.0469	
wave_benchmark_1330.csv	PCA	0.6159	0.1562	
wave_benchmark_1330.csv	LOF	0.4859	0.0781	
wave_benchmark_0746.csv	KNN	0.4279	0.0	
wave_benchmark_0746.csv	PCA	0.6668	0.0	
wave_benchmark_0746.csv	LOF	0.449	0.0	
wave_benchmark_1298.csv	KNN	0.6594	0.1258	
wave_benchmark_1298.csv	PCA	0.6519	0.1321	
wave_benchmark_1298.csv	LOF	0.6296	0.1069	
wave_benchmark_1625.csv	KNN	0.3833	0.0645	
wave_benchmark_1625.csv	PCA	0.5607	0.1484	
wave_benchmark_1625.csv	LOF	0.4459	0.0839	
wave_benchmark_1514.csv	KNN	0.6201	0.1642	
wave_benchmark_1514.csv	PCA	0.5826	0.1522	
wave_benchmark_1514.csv	LOF	0.5975	0.1313	
wave_benchmark_0676.csv	KNN	0.5597	0.0	
wave_benchmark_0676.csv	PCA	0.5501	0.0	
wave_benchmark_0676.csv	LOF	0.531	0.0	
wave_benchmark_1539.csv	KNN	0.568	0.1373	
wave_benchmark_1539.csv	PCA	0.5985	0.1701	
wave_benchmark_1539.csv	LOF	0.5698	0.1224	
wave_benchmark_0708.csv	KNN	0.7272	0.0625	
wave_benchmark_0708.csv	PCA	0.6151	0.0	
wave_benchmark_0708.csv	LOF	0.7161	0.125	
wave_benchmark_0383.csv	KNN	0.9876	0.0	
wave_benchmark_0383.csv	PCA	0.9319	0.0	
wave_benchmark_0383.csv	LOF	0.9855	0.0	
wave_benchmark_1224.csv	KNN	0.7094	0.195	
wave_benchmark_1224.csv	PCA	0.6935	0.1195	
wave_benchmark_1224.csv	LOF	0.7003	0.1572	
wave_benchmark_0382.csv	KNN	0.8158	0.0	
wave_benchmark_0382.csv	PCA	0.63	0.0	
wave_benchmark_0382.csv	LOF	0.7739	0.0	
wave_benchmark_0093.csv	KNN	0.5402	0.359	
wave_benchmark_0093.csv	PCA	0.5664	0.4034	
wave_benchmark_0093.csv	LOF	0.5332	0.3669	
wave_benchmark_0140.csv	KNN	0.4843	0.3617	

wave_benchmark_0140.csv	PCA	0.4634	0.3587
wave_benchmark_0140.csv	LOF	0.4896	0.3617
wave_benchmark_0173.csv	KNN	0.4799	0.3624
wave_benchmark_0173.csv	PCA	0.4619	0.3491
wave_benchmark_0173.csv	LOF	0.5046	0.3809
wave_benchmark_0635.csv	KNN	0.6674	0.125
wave_benchmark_0635.csv	PCA	0.6687	0.0
wave_benchmark_0635.csv	LOF	0.6348	0.0625
wave_benchmark_1236.csv	KNN	0.5869	0.0566
wave_benchmark_1236.csv	PCA	0.6146	0.1069
wave_benchmark_1236.csv	LOF	0.5605	0.0503
wave_benchmark_1326.csv	KNN	0.5004	0.0308
wave_benchmark_1326.csv	PCA	0.61	0.0923
wave_benchmark_1326.csv	LOF	0.5346	0.0615
wave_benchmark_1036.csv	KNN	0.4158	0.0
wave_benchmark_1036.csv	PCA	0.4671	0.0
wave_benchmark_1036.csv	LOF	0.396	0.0
wave_benchmark_0972.csv	KNN	0.6844	0.0323
wave_benchmark_0972.csv	PCA	0.5511	0.0
wave_benchmark_0972.csv	LOF	0.6656	0.0645
wave_benchmark_0263.csv	KNN	0.5232	0.5652
wave_benchmark_0263.csv	PCA	0.5893	0.5978
wave_benchmark_0263.csv	LOF	0.5207	0.5707
wave_benchmark_0913.csv	KNN	0.6795	0.0
wave_benchmark_0913.csv	PCA	0.5602	0.0
wave_benchmark_0913.csv	LOF	0.6784	0.0323
wave_benchmark_0128.csv	KNN	0.4853	0.3646
wave_benchmark_0128.csv	PCA	0.448	0.3706
wave_benchmark_0128.csv	LOF	0.5146	0.3946
wave_benchmark_1571.csv	KNN	0.6562	0.197
wave_benchmark_1571.csv	PCA	0.6051	0.1463
wave_benchmark_1571.csv	LOF	0.6263	0.1642
wave_benchmark_1039.csv	KNN	0.365	0.0
wave_benchmark_1039.csv	PCA	0.4945	0.0
wave_benchmark_1039.csv	LOF	0.3452	0.0
wave_benchmark_0248.csv	KNN	0.504	0.5622
wave_benchmark_0248.csv	PCA	0.5845	0.6324
wave_benchmark_0248.csv	LOF	0.4916	0.5568
wave_benchmark_0738.csv	KNN	0.2606	0.0
wave_benchmark_0738.csv	PCA	0.3469	0.0
wave_benchmark_0738.csv	LOF	0.2841	0.0
wave_benchmark_0974.csv	KNN	0.6864	0.0323
wave_benchmark_0974.csv	PCA	0.5558	0.0323
wave_benchmark_0974.csv	LOF	0.6941	0.0323
wave_benchmark_0287.csv	KNN	0.4812	0.4899
wave_benchmark_0287.csv	PCA	0.4962	0.5302
wave_benchmark_0287.csv	LOF	0.4696	0.5168
wave_benchmark_1592.csv	KNN	0.6476	0.1791
wave_benchmark_1592.csv	PCA	0.6444	0.1731
wave_benchmark_1592.csv	LOF	0.628	0.1642
wave_benchmark_0016.csv	KNN	0.5193	0.345
wave_benchmark_0016.csv	PCA	0.5106	0.345
wave_benchmark_0016.csv	LOF	0.5189	0.336

wave_benchmark_0761.csv	KNN	0.4434	0.0	
wave_benchmark_0761.csv	PCA	0.3616	0.0	
wave_benchmark_0761.csv	LOF	0.5406	0.0	
wave_benchmark_0179.csv	KNN	0.4915	0.3835	
wave_benchmark_0179.csv	PCA	0.4775	0.3736	
wave_benchmark_0179.csv	LOF	0.5064	0.4004	
wave_benchmark_1529.csv	KNN	0.649	0.2388	
wave_benchmark_1529.csv	PCA	0.6665	0.1612	
wave_benchmark_1529.csv	LOF	0.6363	0.194	
wave_benchmark_1274.csv	KNN	0.6147	0.1321	
wave_benchmark_1274.csv	PCA	0.606	0.0881	
wave_benchmark_1274.csv	LOF	0.6058	0.1195	
wave_benchmark_0413.csv	KNN	0.6198	0.0	
wave_benchmark_0413.csv	PCA	0.3192	0.0	
wave_benchmark_0413.csv	LOF	0.6562	0.0	
wave_benchmark_1604.csv	KNN	0.6593	0.1881	
wave_benchmark_1604.csv	PCA	0.5861	0.1463	
wave_benchmark_1604.csv	LOF	0.6007	0.1373	
wave_benchmark_0665.csv	KNN	0.8311	0.125	
wave_benchmark_0665.csv	PCA	0.561	0.0	
wave_benchmark_0665.csv	LOF	0.8286	0.1875	
wave_benchmark_0223.csv	KNN	0.4905	0.4594	
wave_benchmark_0223.csv	PCA	0.482	0.4664	
wave_benchmark_0223.csv	LOF	0.4961	0.4548	
wave_benchmark_0664.csv	KNN	0.7718	0.125	
wave_benchmark_0664.csv	PCA	0.5806	0.0	
wave_benchmark_0664.csv	LOF	0.7803	0.0625	
wave_benchmark_0916.csv	KNN	0.5835	0.0323	
wave_benchmark_0916.csv	PCA	0.5732	0.0	
wave_benchmark_0916.csv	LOF	0.5698	0.0323	
wave_benchmark_0993.csv	KNN	0.6318	0.0	
wave_benchmark_0993.csv	PCA	0.6615	0.0323	
wave_benchmark_0993.csv	LOF	0.6188	0.0	
wave_benchmark_0740.csv	KNN	0.4986	0.0	
wave_benchmark_0740.csv	PCA	0.4445	0.0	
wave_benchmark_0740.csv	LOF	0.5146	0.0	
wave_benchmark_0692.csv	KNN	0.7571	0.0625	
wave_benchmark_0692.csv	PCA	0.7597	0.0625	
wave_benchmark_0692.csv	LOF	0.7456	0.0625	
wave_benchmark_0276.csv	KNN	0.4791	0.5385	
wave_benchmark_0276.csv	PCA	0.5346	0.5549	
wave_benchmark_0276.csv	LOF	0.4804	0.5604	
wave_benchmark_0710.csv	KNN	0.738	0.25	
wave_benchmark_0710.csv	PCA	0.684	0.0	
wave_benchmark_0710.csv	LOF	0.7382	0.25	
wave_benchmark_0358.csv	KNN	0.8349	0.0	
wave_benchmark_0358.csv	PCA	0.6971	0.0	
wave_benchmark_0358.csv	LOF	0.8127	0.0	
wave_benchmark_1523.csv	KNN	0.7033	0.2537	
wave_benchmark_1523.csv	PCA	0.688	0.1582	
wave_benchmark_1523.csv	LOF	0.6686	0.209	
wave_benchmark_0320.csv	KNN	0.6793	0.0	
wave_benchmark_0320.csv	PCA	0.5744	0.0	

wave_benchmark_0320.csv	LOF	0.6303	0.0
wave_benchmark_0653.csv	KNN	0.6344	0.0625
wave_benchmark_0653.csv	PCA	0.6668	0.0625
wave_benchmark_0653.csv	LOF	0.597	0.0625
wave_benchmark_0328.csv	KNN	0.9369	0.0
wave_benchmark_0328.csv	PCA	0.8618	0.0
wave_benchmark_0328.csv	LOF	0.9589	0.0
wave_benchmark_0690.csv	KNN	0.7097	0.125
wave_benchmark_0690.csv	PCA	0.6437	0.0
wave_benchmark_0690.csv	LOF	0.71	0.125
wave_benchmark_0197.csv	KNN	0.4701	0.4444
wave_benchmark_0197.csv	PCA	0.4824	0.4511
wave_benchmark_0197.csv	LOF	0.474	0.4378
wave_benchmark_0418.csv	KNN	0.718	0.0
wave_benchmark_0418.csv	PCA	0.5509	0.0
wave_benchmark_0418.csv	LOF	0.7195	0.0
wave_benchmark_0050.csv	KNN	0.5047	0.33
wave_benchmark_0050.csv	PCA	0.4767	0.3269
wave_benchmark_0050.csv	LOF	0.5111	0.329
wave_benchmark_0743.csv	KNN	0.5063	0.0
wave_benchmark_0743.csv	PCA	0.6734	0.0
wave_benchmark_0743.csv	LOF	0.547	0.0
wave_benchmark_0084.csv	KNN	0.5911	0.393
wave_benchmark_0084.csv	PCA	0.586	0.4105
wave_benchmark_0084.csv	LOF	0.5379	0.3247
wave_benchmark_1333.csv	KNN	0.4856	0.0606
wave_benchmark_1333.csv	PCA	0.6117	0.1515
wave_benchmark_1333.csv	LOF	0.5159	0.0909
wave_benchmark_1219.csv	KNN	0.6438	0.0818
wave_benchmark_1219.csv	PCA	0.6042	0.0818
wave_benchmark_1219.csv	LOF	0.6327	0.0755
wave_benchmark_0638.csv	KNN	0.4875	0.0
wave_benchmark_0638.csv	PCA	0.5797	0.0
wave_benchmark_0638.csv	LOF	0.5015	0.0
wave_benchmark_0231.csv	KNN	0.4843	0.468
wave_benchmark_0231.csv	PCA	0.4886	0.4475
wave_benchmark_0231.csv	LOF	0.4856	0.4635
wave_benchmark_0990.csv	KNN	0.8125	0.0323
wave_benchmark_0990.csv	PCA	0.7318	0.0645
wave_benchmark_0990.csv	LOF	0.7846	0.0323
wave_benchmark_1578.csv	KNN	0.6068	0.1612
wave_benchmark_1578.csv	PCA	0.5949	0.1313
wave_benchmark_1578.csv	LOF	0.5925	0.1403
wave_benchmark_0067.csv	KNN	0.5065	0.3278
wave_benchmark_0067.csv	PCA	0.4981	0.3309
wave_benchmark_0067.csv	LOF	0.5189	0.3443
wave_benchmark_1507.csv	KNN	0.6219	0.1731
wave_benchmark_1507.csv	PCA	0.5869	0.1522
wave_benchmark_1507.csv	LOF	0.5827	0.1552
wave_benchmark_1275.csv	KNN	0.6313	0.1069
wave_benchmark_1275.csv	PCA	0.5676	0.0692
wave_benchmark_1275.csv	LOF	0.6009	0.1258
wave_benchmark_0256.csv	KNN	0.4474	0.5132

wave_benchmark_0256.csv	PCA	0.5171	0.5714
wave_benchmark_0256.csv	LOF	0.4493	0.5344
wave_benchmark_0463.csv	KNN	0.4774	0.0
wave_benchmark_0463.csv	PCA	0.77	0.0
wave_benchmark_0463.csv	LOF	0.5362	0.0
wave_benchmark_0385.csv	KNN	0.7867	0.25
wave_benchmark_0385.csv	PCA	0.831	0.0
wave_benchmark_0385.csv	LOF	0.744	0.25
wave_benchmark_0286.csv	KNN	0.5542	0.5603
wave_benchmark_0286.csv	PCA	0.5623	0.5704
wave_benchmark_0286.csv	LOF	0.5534	0.5634
wave_benchmark_0351.csv	KNN	0.8959	0.0
wave_benchmark_0351.csv	PCA	0.7755	0.0
wave_benchmark_0351.csv	LOF	0.8987	0.0
wave_benchmark_1222.csv	KNN	0.7217	0.1824
wave_benchmark_1222.csv	PCA	0.6873	0.1069
wave_benchmark_1222.csv	LOF	0.697	0.1321
wave_benchmark_0273.csv	KNN	0.5072	0.5574
wave_benchmark_0273.csv	PCA	0.5821	0.5956
wave_benchmark_0273.csv	LOF	0.4978	0.541
wave_benchmark_0407.csv	KNN	0.5916	0.0
wave_benchmark_0407.csv	PCA	0.3972	0.0
wave_benchmark_0407.csv	LOF	0.638	0.0
wave_benchmark_0637.csv	KNN	0.5978	0.0
wave_benchmark_0637.csv	PCA	0.6027	0.0
wave_benchmark_0637.csv	LOF	0.5867	0.0
wave_benchmark_0741.csv	KNN	0.3941	0.0
wave_benchmark_0741.csv	PCA	0.6202	0.0
wave_benchmark_0741.csv	LOF	0.3963	0.0
wave_benchmark_1008.csv	KNN	0.7414	0.1613
wave_benchmark_1008.csv	PCA	0.6339	0.0323
wave_benchmark_1008.csv	LOF	0.7431	0.1613
wave_benchmark_0129.csv	KNN	0.4744	0.3566
wave_benchmark_0129.csv	PCA	0.4433	0.3485
wave_benchmark_0129.csv	LOF	0.5151	0.3972
wave_benchmark_0697.csv	KNN	0.5639	0.0
wave_benchmark_0697.csv	PCA	0.6535	0.0
wave_benchmark_0697.csv	LOF	0.5281	0.0
wave_benchmark_0296.csv	KNN	0.4611	0.4453
wave_benchmark_0296.csv	PCA	0.4786	0.4964
wave_benchmark_0296.csv	LOF	0.4745	0.5109
wave_benchmark_1510.csv	KNN	0.6719	0.1851
wave_benchmark_1510.csv	PCA	0.6026	0.1373
wave_benchmark_1510.csv	LOF	0.6366	0.1433
wave_benchmark_0622.csv	KNN	0.6905	0.125
wave_benchmark_0622.csv	PCA	0.6875	0.0
wave_benchmark_0622.csv	LOF	0.6966	0.0625
wave_benchmark_1595.csv	KNN	0.6183	0.1851
wave_benchmark_1595.csv	PCA	0.6373	0.1791
wave_benchmark_1595.csv	LOF	0.6038	0.1612
wave_benchmark_0017.csv	KNN	0.5178	0.347
wave_benchmark_0017.csv	PCA	0.4935	0.3363
wave_benchmark_0017.csv	LOF	0.5059	0.3402

wave_benchmark_0999.csv	KNN	0.6301	0.0	
wave_benchmark_0999.csv	PCA	0.6719	0.0	
wave_benchmark_0999.csv	LOF	0.6175	0.0	
wave_benchmark_0752.csv	KNN	0.6315	0.0	
wave_benchmark_0752.csv	PCA	0.7576	0.0	
wave_benchmark_0752.csv	LOF	0.6199	0.0	
wave_benchmark_0239.csv	KNN	0.4882	0.4869	
wave_benchmark_0239.csv	PCA	0.4798	0.4782	
wave_benchmark_0239.csv	LOF	0.4933	0.4913	
wave_benchmark_1542.csv	KNN	0.6868	0.2328	
wave_benchmark_1542.csv	PCA	0.6302	0.1672	
wave_benchmark_1542.csv	LOF	0.6283	0.1552	
wave_benchmark_0359.csv	KNN	0.7794	0.0	
wave_benchmark_0359.csv	PCA	0.6671	0.0	
wave_benchmark_0359.csv	LOF	0.7724	0.0	
wave_benchmark_1261.csv	KNN	0.7232	0.1698	
wave_benchmark_1261.csv	PCA	0.6252	0.1195	
wave_benchmark_1261.csv	LOF	0.672	0.1132	
wave_benchmark_0660.csv	KNN	0.6162	0.0	
wave_benchmark_0660.csv	PCA	0.5592	0.0	
wave_benchmark_0660.csv	LOF	0.6116	0.0625	
wave_benchmark_0607.csv	KNN	0.682	0.0625	
wave_benchmark_0607.csv	PCA	0.5105	0.0	
wave_benchmark_0607.csv	LOF	0.7121	0.0625	
wave_benchmark_0300.csv	KNN	0.402	0.4503	
wave_benchmark_0300.csv	PCA	0.4368	0.4768	
wave_benchmark_0300.csv	LOF	0.4086	0.4503	
wave_benchmark_1524.csv	KNN	0.6568	0.2299	
wave_benchmark_1524.csv	PCA	0.6674	0.1851	
wave_benchmark_1524.csv	LOF	0.6333	0.1672	
wave_benchmark_0679.csv	KNN	0.6124	0.0	
wave_benchmark_0679.csv	PCA	0.5919	0.0625	
wave_benchmark_0679.csv	LOF	0.6035	0.0	
wave_benchmark_0204.csv	KNN	0.492	0.4687	
wave_benchmark_0204.csv	PCA	0.4812	0.4432	
wave_benchmark_0204.csv	LOF	0.4934	0.4571	
wave_benchmark_0174.csv	KNN	0.4966	0.388	
wave_benchmark_0174.csv	PCA	0.4539	0.364	
wave_benchmark_0174.csv	LOF	0.5109	0.394	
wave_benchmark_0061.csv	KNN	0.5379	0.3427	
wave_benchmark_0061.csv	PCA	0.4953	0.3354	
wave_benchmark_0061.csv	LOF	0.5188	0.323	
wave_benchmark_0734.csv	KNN	0.5517	0.0	
wave_benchmark_0734.csv	PCA	0.6527	0.0	
wave_benchmark_0734.csv	LOF	0.5712	0.0	
wave_benchmark_0627.csv	KNN	0.5532	0.0	
wave_benchmark_0627.csv	PCA	0.6544	0.0	
wave_benchmark_0627.csv	LOF	0.5462	0.0	
wave_benchmark_1244.csv	KNN	0.7238	0.1824	
wave_benchmark_1244.csv	PCA	0.615	0.0818	
wave_benchmark_1244.csv	LOF	0.6933	0.1006	
wave_benchmark_0616.csv	KNN	0.4707	0.0625	
wave_benchmark_0616.csv	PCA	0.5148	0.0	

wave_benchmark_0616.csv	LOF	0.4709	0.0625	
wave_benchmark_0135.csv	KNN	0.4808	0.3773	
wave_benchmark_0135.csv	PCA	0.4606	0.3612	
wave_benchmark_0135.csv	LOF	0.5089	0.3924	
wave_benchmark_0200.csv	KNN	0.519	0.4922	
wave_benchmark_0200.csv	PCA	0.5244	0.4834	
wave_benchmark_0200.csv	LOF	0.5152	0.4945	
wave_benchmark_0151.csv	KNN	0.5023	0.369	
wave_benchmark_0151.csv	PCA	0.5213	0.3757	
wave_benchmark_0151.csv	LOF	0.5305	0.3935	
wave_benchmark_0341.csv	KNN	0.7465	0.0	
wave_benchmark_0341.csv	PCA	0.7067	0.0	
wave_benchmark_0341.csv	LOF	0.6835	0.25	
wave_benchmark_0661.csv	KNN	0.7458	0.0625	
wave_benchmark_0661.csv	PCA	0.6958	0.0	
wave_benchmark_0661.csv	LOF	0.7718	0.0625	
wave_benchmark_0039.csv	KNN	0.5301	0.3503	
wave_benchmark_0039.csv	PCA	0.5501	0.3813	
wave_benchmark_0039.csv	LOF	0.5264	0.344	
wave_benchmark_1284.csv	KNN	0.743	0.2075	
wave_benchmark_1284.csv	PCA	0.7106	0.1195	
wave_benchmark_1284.csv	LOF	0.7092	0.1447	
wave_benchmark_0219.csv	KNN	0.4976	0.4737	
wave_benchmark_0219.csv	PCA	0.5043	0.4805	
wave_benchmark_0219.csv	LOF	0.4906	0.4622	
wave_benchmark_0271.csv	KNN	0.5507	0.5682	
wave_benchmark_0271.csv	PCA	0.589	0.5932	
wave_benchmark_0271.csv	LOF	0.5573	0.565	
wave_benchmark_0377.csv	KNN	0.423	0.0	
wave_benchmark_0377.csv	PCA	0.2129	0.0	
wave_benchmark_0377.csv	LOF	0.4187	0.0	
wave_benchmark_1077.csv	KNN	0.4819	0.0	
wave_benchmark_1077.csv	PCA	0.5012	0.0	
wave_benchmark_1077.csv	LOF	0.5203	0.0	
wave_benchmark_0001.csv	KNN	0.5508	0.3659	
wave_benchmark_0001.csv	PCA	0.4997	0.3427	
wave_benchmark_0001.csv	LOF	0.5204	0.3246	
wave_benchmark_0265.csv	KNN	0.4875	0.547	
wave_benchmark_0265.csv	PCA	0.5883	0.6188	
wave_benchmark_0265.csv	LOF	0.4927	0.5635	
wave_benchmark_0632.csv	KNN	0.6867	0.0625	
wave_benchmark_0632.csv	PCA	0.689	0.0	
wave_benchmark_0632.csv	LOF	0.6531	0.0625	
wave_benchmark_0333.csv	KNN	0.4428	0.0	
wave_benchmark_0333.csv	PCA	0.6576	0.0	
wave_benchmark_0333.csv	LOF	0.4696	0.0	
wave_benchmark_1567.csv	KNN	0.6366	0.1881	
wave_benchmark_1567.csv	PCA	0.5703	0.1373	
wave_benchmark_1567.csv	LOF	0.6105	0.1284	
wave_benchmark_0933.csv	KNN	0.6523	0.0323	
wave_benchmark_0933.csv	PCA	0.7463	0.0323	
wave_benchmark_0933.csv	LOF	0.6378	0.0645	
wave_benchmark_0912.csv	KNN	0.6906	0.0323	

wave_benchmark_0912.csv	PCA	0.6403	0.0323	
wave_benchmark_0912.csv	LOF	0.6694	0.0	
wave_benchmark_0030.csv	KNN	0.5592	0.3796	
wave_benchmark_0030.csv	PCA	0.5688	0.4103	
wave_benchmark_0030.csv	LOF	0.5449	0.3697	
wave_benchmark_1305.csv	KNN	0.7331	0.1635	
wave_benchmark_1305.csv	PCA	0.6159	0.0629	
wave_benchmark_1305.csv	LOF	0.7012	0.1006	
wave_benchmark_0292.csv	KNN	0.4705	0.5212	
wave_benchmark_0292.csv	PCA	0.4819	0.5273	
wave_benchmark_0292.csv	LOF	0.4816	0.5394	
wave_benchmark_0153.csv	KNN	0.5131	0.3698	
wave_benchmark_0153.csv	PCA	0.5303	0.3779	
wave_benchmark_0153.csv	LOF	0.5414	0.4009	
wave_benchmark_0043.csv	KNN	0.5099	0.3458	
wave_benchmark_0043.csv	PCA	0.4689	0.3552	
wave_benchmark_0043.csv	LOF	0.5094	0.3421	
wave_benchmark_1314.csv	KNN	0.6235	0.0881	
wave_benchmark_1314.csv	PCA	0.5742	0.0503	
wave_benchmark_1314.csv	LOF	0.5965	0.0629	
wave_benchmark_0691.csv	KNN	0.7094	0.0625	
wave_benchmark_0691.csv	PCA	0.66	0.0	
wave_benchmark_0691.csv	LOF	0.7051	0.0625	
wave_benchmark_0389.csv	KNN	0.6875	0.0	
wave_benchmark_0389.csv	PCA	0.5951	0.0	
wave_benchmark_0389.csv	LOF	0.6769	0.0	
wave_benchmark_0985.csv	KNN	0.7905	0.2258	
wave_benchmark_0985.csv	PCA	0.7326	0.0	
wave_benchmark_0985.csv	LOF	0.7848	0.1613	
wave_benchmark_0419.csv	KNN	0.55	0.0	
wave_benchmark_0419.csv	PCA	0.6662	0.0	
wave_benchmark_0419.csv	LOF	0.5949	0.0	
wave_benchmark_0193.csv	KNN	0.4905	0.4706	
wave_benchmark_0193.csv	PCA	0.5011	0.4638	
wave_benchmark_0193.csv	LOF	0.4869	0.4729	
wave_benchmark_0988.csv	KNN	0.7326	0.129	
wave_benchmark_0988.csv	PCA	0.6582	0.0323	
wave_benchmark_0988.csv	LOF	0.768	0.0968	
wave_benchmark_0427.csv	KNN	0.3507	0.0	
wave_benchmark_0427.csv	PCA	0.805	0.0	
wave_benchmark_0427.csv	LOF	0.2957	0.0	
wave_benchmark_0626.csv	KNN	0.6556	0.0625	
wave_benchmark_0626.csv	PCA	0.6986	0.0	
wave_benchmark_0626.csv	LOF	0.6312	0.0625	
wave_benchmark_1618.csv	KNN	0.5989	0.1791	
wave_benchmark_1618.csv	PCA	0.5909	0.1403	
wave_benchmark_1618.csv	LOF	0.5907	0.1731	
wave_benchmark_0465.csv	KNN	0.1558	0.0	
wave_benchmark_0465.csv	PCA	0.3811	0.0	
wave_benchmark_0465.csv	LOF	0.111	0.0	
wave_benchmark_0452.csv	KNN	0.3939	0.0	
wave_benchmark_0452.csv	PCA	0.6467	0.0	
wave_benchmark_0452.csv	LOF	0.3776	0.0	

wave_benchmark_1540.csv	KNN	0.6199	0.1851
wave_benchmark_1540.csv	PCA	0.6309	0.1791
wave_benchmark_1540.csv	LOF	0.5893	0.1582
wave_benchmark_1292.csv	KNN	0.6614	0.1447
wave_benchmark_1292.csv	PCA	0.682	0.1132
wave_benchmark_1292.csv	LOF	0.6597	0.1258
wave_benchmark_0750.csv	KNN	0.5979	0.0
wave_benchmark_0750.csv	PCA	0.6226	0.0
wave_benchmark_0750.csv	LOF	0.6119	0.0
wave_benchmark_0643.csv	KNN	0.8507	0.25
wave_benchmark_0643.csv	PCA	0.6558	0.0
wave_benchmark_0643.csv	LOF	0.834	0.125
wave_benchmark_0108.csv	KNN	0.5391	0.3536
wave_benchmark_0108.csv	PCA	0.4993	0.3536
wave_benchmark_0108.csv	LOF	0.511	0.3337
wave_benchmark_0971.csv	KNN	0.6952	0.0323
wave_benchmark_0971.csv	PCA	0.6713	0.0
wave_benchmark_0971.csv	LOF	0.6917	0.0645
wave_benchmark_0137.csv	KNN	0.4938	0.3858
wave_benchmark_0137.csv	PCA	0.4631	0.3701
wave_benchmark_0137.csv	LOF	0.5022	0.4035
wave_benchmark_0009.csv	KNN	0.5229	0.3429
wave_benchmark_0009.csv	PCA	0.4792	0.3409
wave_benchmark_0009.csv	LOF	0.5194	0.3369
wave_benchmark_1615.csv	KNN	0.6107	0.1463
wave_benchmark_1615.csv	PCA	0.5542	0.1254
wave_benchmark_1615.csv	LOF	0.5973	0.1284
wave_benchmark_0054.csv	KNN	0.5378	0.3646
wave_benchmark_0054.csv	PCA	0.5072	0.3495
wave_benchmark_0054.csv	LOF	0.532	0.3576
wave_benchmark_0386.csv	KNN	0.7862	0.0
wave_benchmark_0386.csv	PCA	0.7616	0.0
wave_benchmark_0386.csv	LOF	0.8101	0.0
wave_benchmark_0012.csv	KNN	0.4968	0.3382
wave_benchmark_0012.csv	PCA	0.4878	0.3421
wave_benchmark_0012.csv	LOF	0.5196	0.3617
wave_benchmark_1533.csv	KNN	0.6188	0.1761
wave_benchmark_1533.csv	PCA	0.6308	0.2
wave_benchmark_1533.csv	LOF	0.6074	0.1612
wave_benchmark_1210.csv	KNN	0.7152	0.1572
wave_benchmark_1210.csv	PCA	0.6242	0.0755
wave_benchmark_1210.csv	LOF	0.6898	0.1195
wave_benchmark_1062.csv	KNN	0.2942	0.0
wave_benchmark_1062.csv	PCA	0.3337	0.0
wave_benchmark_1062.csv	LOF	0.3488	0.0
wave_benchmark_0196.csv	KNN	0.4785	0.4309
wave_benchmark_0196.csv	PCA	0.4799	0.4333
wave_benchmark_0196.csv	LOF	0.4679	0.4169
wave_benchmark_0470.csv	KNN	0.2539	0.0
wave_benchmark_0470.csv	PCA	0.5232	0.0
wave_benchmark_0470.csv	LOF	0.3644	0.0
wave_benchmark_0685.csv	KNN	0.8352	0.0625
wave_benchmark_0685.csv	PCA	0.7447	0.0

wave_benchmark_0685.csv	LOF	0.8163	0.125
wave_benchmark_1553.csv	KNN	0.6314	0.203
wave_benchmark_1553.csv	PCA	0.5935	0.1701
wave_benchmark_1553.csv	LOF	0.6182	0.197
wave_benchmark_0919.csv	KNN	0.5418	0.0645
wave_benchmark_0919.csv	PCA	0.5961	0.0
wave_benchmark_0919.csv	LOF	0.5301	0.0
wave_benchmark_1329.csv	KNN	0.3482	0.0152
wave_benchmark_1329.csv	PCA	0.5135	0.0606
wave_benchmark_1329.csv	LOF	0.4143	0.0455
wave_benchmark_1313.csv	KNN	0.6483	0.1258
wave_benchmark_1313.csv	PCA	0.5795	0.0629
wave_benchmark_1313.csv	LOF	0.6082	0.0943
wave_benchmark_1627.csv	KNN	0.404	0.0449
wave_benchmark_1627.csv	PCA	0.549	0.1218
wave_benchmark_1627.csv	LOF	0.4322	0.0705
wave_benchmark_0370.csv	KNN	0.6706	0.0
wave_benchmark_0370.csv	PCA	0.5927	0.0
wave_benchmark_0370.csv	LOF	0.6127	0.0
wave_benchmark_1221.csv	KNN	0.7181	0.1887
wave_benchmark_1221.csv	PCA	0.6904	0.1447
wave_benchmark_1221.csv	LOF	0.6991	0.1509
wave_benchmark_0402.csv	KNN	0.68	0.0
wave_benchmark_0402.csv	PCA	0.7188	0.0
wave_benchmark_0402.csv	LOF	0.7005	0.0
wave_benchmark_0455.csv	KNN	0.4259	0.0
wave_benchmark_0455.csv	PCA	0.3443	0.0
wave_benchmark_0455.csv	LOF	0.4289	0.0
wave_benchmark_0448.csv	KNN	0.9007	0.0
wave_benchmark_0448.csv	PCA	0.8069	0.0
wave_benchmark_0448.csv	LOF	0.9137	0.0
wave_benchmark_1248.csv	KNN	0.6771	0.1572
wave_benchmark_1248.csv	PCA	0.5912	0.0755
wave_benchmark_1248.csv	LOF	0.6495	0.1195
wave_benchmark_1552.csv	KNN	0.608	0.1791
wave_benchmark_1552.csv	PCA	0.5872	0.1313
wave_benchmark_1552.csv	LOF	0.5895	0.1642
wave_benchmark_0101.csv	KNN	0.5226	0.3597
wave_benchmark_0101.csv	PCA	0.4757	0.3473
wave_benchmark_0101.csv	LOF	0.5061	0.3263
wave_benchmark_0289.csv	KNN	0.5194	0.5039
wave_benchmark_0289.csv	PCA	0.5097	0.5039
wave_benchmark_0289.csv	LOF	0.5308	0.5039
wave_benchmark_1589.csv	KNN	0.6931	0.2328
wave_benchmark_1589.csv	PCA	0.6621	0.2
wave_benchmark_1589.csv	LOF	0.6584	0.191
wave_benchmark_0349.csv	KNN	0.4919	0.0
wave_benchmark_0349.csv	PCA	0.696	0.0
wave_benchmark_0349.csv	LOF	0.5795	0.0
wave_benchmark_1235.csv	KNN	0.635	0.1195
wave_benchmark_1235.csv	PCA	0.6438	0.1321
wave_benchmark_1235.csv	LOF	0.607	0.1258
wave_benchmark_1238.csv	KNN	0.6088	0.0818

wave_benchmark_1238.csv	PCA	0.6206	0.0881
wave_benchmark_1238.csv	LOF	0.5995	0.0692
wave_benchmark_0956.csv	KNN	0.5574	0.0
wave_benchmark_0956.csv	PCA	0.547	0.0
wave_benchmark_0956.csv	LOF	0.548	0.0
wave_benchmark_0244.csv	KNN	0.4864	0.5398
wave_benchmark_0244.csv	PCA	0.5649	0.5625
wave_benchmark_0244.csv	LOF	0.4875	0.5455
wave_benchmark_0022.csv	KNN	0.5654	0.3789
wave_benchmark_0022.csv	PCA	0.5737	0.4322
wave_benchmark_0022.csv	LOF	0.5357	0.3411
wave_benchmark_0342.csv	KNN	0.8425	0.0
wave_benchmark_0342.csv	PCA	0.4377	0.0
wave_benchmark_0342.csv	LOF	0.8472	0.0
wave_benchmark_0719.csv	KNN	0.7515	0.0
wave_benchmark_0719.csv	PCA	0.6989	0.0
wave_benchmark_0719.csv	LOF	0.7511	0.0
wave_benchmark_0445.csv	KNN	0.4633	0.0
wave_benchmark_0445.csv	PCA	0.8577	0.0
wave_benchmark_0445.csv	LOF	0.5005	0.0
wave_benchmark_0226.csv	KNN	0.4826	0.4533
wave_benchmark_0226.csv	PCA	0.4963	0.479
wave_benchmark_0226.csv	LOF	0.4807	0.4556
wave_benchmark_0074.csv	KNN	0.5036	0.3411
wave_benchmark_0074.csv	PCA	0.4806	0.3294
wave_benchmark_0074.csv	LOF	0.5083	0.3567
wave_benchmark_0236.csv	KNN	0.4601	0.4388
wave_benchmark_0236.csv	PCA	0.4704	0.4503
wave_benchmark_0236.csv	LOF	0.4666	0.448
wave_benchmark_1220.csv	KNN	0.6643	0.1321
wave_benchmark_1220.csv	PCA	0.6356	0.0881
wave_benchmark_1220.csv	LOF	0.639	0.1132
wave_benchmark_1572.csv	KNN	0.6	0.1582
wave_benchmark_1572.csv	PCA	0.5556	0.1552
wave_benchmark_1572.csv	LOF	0.5852	0.1463
wave_benchmark_0732.csv	KNN	0.5086	0.0
wave_benchmark_0732.csv	PCA	0.4773	0.0
wave_benchmark_0732.csv	LOF	0.4617	0.0
wave_benchmark_0960.csv	KNN	0.5829	0.0
wave_benchmark_0960.csv	PCA	0.5284	0.0
wave_benchmark_0960.csv	LOF	0.5522	0.0
wave_benchmark_0363.csv	KNN	0.704	0.0
wave_benchmark_0363.csv	PCA	0.5825	0.0
wave_benchmark_0363.csv	LOF	0.7611	0.0
wave_benchmark_0760.csv	KNN	0.5275	0.0
wave_benchmark_0760.csv	PCA	0.6873	0.0
wave_benchmark_0760.csv	LOF	0.5151	0.0
wave_benchmark_0904.csv	KNN	0.8377	0.0968
wave_benchmark_0904.csv	PCA	0.6616	0.0323
wave_benchmark_0904.csv	LOF	0.8326	0.0645
wave_benchmark_0194.csv	KNN	0.4871	0.451
wave_benchmark_0194.csv	PCA	0.49	0.4738
wave_benchmark_0194.csv	LOF	0.4801	0.4533

wave_benchmark_0435.csv	KNN	0.7907	0.0
wave_benchmark_0435.csv	PCA	0.8603	0.0
wave_benchmark_0435.csv	LOF	0.8234	0.0
wave_benchmark_0036.csv	KNN	0.5237	0.3468
wave_benchmark_0036.csv	PCA	0.5483	0.3792
wave_benchmark_0036.csv	LOF	0.5186	0.3357
wave_benchmark_1311.csv	KNN	0.6525	0.0881
wave_benchmark_1311.csv	PCA	0.5967	0.0881
wave_benchmark_1311.csv	LOF	0.6163	0.0692
wave_benchmark_0228.csv	KNN	0.4529	0.433
wave_benchmark_0228.csv	PCA	0.4638	0.4353
wave_benchmark_0228.csv	LOF	0.4503	0.4196
wave_benchmark_0068.csv	KNN	0.5124	0.3462
wave_benchmark_0068.csv	PCA	0.4851	0.3383
wave_benchmark_0068.csv	LOF	0.4982	0.3146
wave_benchmark_0428.csv	KNN	0.6736	0.0
wave_benchmark_0428.csv	PCA	0.8824	0.0
wave_benchmark_0428.csv	LOF	0.7565	0.0
wave_benchmark_0615.csv	KNN	0.608	0.0
wave_benchmark_0615.csv	PCA	0.5692	0.0
wave_benchmark_0615.csv	LOF	0.6051	0.0
wave_benchmark_0472.csv	KNN	0.4505	0.0
wave_benchmark_0472.csv	PCA	0.4038	0.0
wave_benchmark_0472.csv	LOF	0.514	0.0
wave_benchmark_0157.csv	KNN	0.5145	0.3605
wave_benchmark_0157.csv	PCA	0.5271	0.3889
wave_benchmark_0157.csv	LOF	0.5279	0.373
wave_benchmark_0677.csv	KNN	0.6026	0.0
wave_benchmark_0677.csv	PCA	0.5078	0.0625
wave_benchmark_0677.csv	LOF	0.6056	0.0625
wave_benchmark_1520.csv	KNN	0.5726	0.1433
wave_benchmark_1520.csv	PCA	0.5556	0.1433
wave_benchmark_1520.csv	LOF	0.5679	0.1493
wave_benchmark_0237.csv	KNN	0.4838	0.4612
wave_benchmark_0237.csv	PCA	0.4967	0.4703
wave_benchmark_0237.csv	LOF	0.4793	0.4475
wave_benchmark_1025.csv	KNN	0.543	0.0833
wave_benchmark_1025.csv	PCA	0.5079	0.0
wave_benchmark_1025.csv	LOF	0.5618	0.0833
wave_benchmark_0229.csv	KNN	0.499	0.4821
wave_benchmark_0229.csv	PCA	0.4993	0.4843
wave_benchmark_0229.csv	LOF	0.5031	0.4776
wave_benchmark_1269.csv	KNN	0.6743	0.1258
wave_benchmark_1269.csv	PCA	0.635	0.0881
wave_benchmark_1269.csv	LOF	0.6744	0.1132
wave_benchmark_1290.csv	KNN	0.6889	0.1698
wave_benchmark_1290.csv	PCA	0.6707	0.1132
wave_benchmark_1290.csv	LOF	0.6859	0.1509
wave_benchmark_1234.csv	KNN	0.6494	0.1384
wave_benchmark_1234.csv	PCA	0.6585	0.1195
wave_benchmark_1234.csv	LOF	0.6399	0.1384
wave_benchmark_0713.csv	KNN	0.6989	0.0625
wave_benchmark_0713.csv	PCA	0.6305	0.0

wave_benchmark_0713.csv	LOF	0.6566	0.0	
wave_benchmark_0293.csv	KNN	0.5465	0.5435	
wave_benchmark_0293.csv	PCA	0.5533	0.5217	
wave_benchmark_0293.csv	LOF	0.5323	0.5217	
wave_benchmark_0288.csv	KNN	0.4753	0.5137	
wave_benchmark_0288.csv	PCA	0.5208	0.5548	
wave_benchmark_0288.csv	LOF	0.4726	0.4863	
wave_benchmark_0433.csv	KNN	0.4194	0.0	
wave_benchmark_0433.csv	PCA	0.5135	0.0	
wave_benchmark_0433.csv	LOF	0.3411	0.0	
wave_benchmark_0091.csv	KNN	0.5489	0.3822	
wave_benchmark_0091.csv	PCA	0.5607	0.4064	
wave_benchmark_0091.csv	LOF	0.5477	0.3773	
wave_benchmark_0076.csv	KNN	0.5001	0.3166	
wave_benchmark_0076.csv	PCA	0.4924	0.3187	
wave_benchmark_0076.csv	LOF	0.5077	0.3354	
wave_benchmark_0352.csv	KNN	0.6828	0.0	
wave_benchmark_0352.csv	PCA	0.5161	0.0	
wave_benchmark_0352.csv	LOF	0.6477	0.0	
wave_benchmark_0678.csv	KNN	0.5012	0.0	
wave_benchmark_0678.csv	PCA	0.5639	0.0	
wave_benchmark_0678.csv	LOF	0.4796	0.0	
wave_benchmark_1610.csv	KNN	0.652	0.1851	
wave_benchmark_1610.csv	PCA	0.5721	0.1254	
wave_benchmark_1610.csv	LOF	0.6263	0.1463	
wave_benchmark_0688.csv	KNN	0.7262	0.0625	
wave_benchmark_0688.csv	PCA	0.6732	0.0625	
wave_benchmark_0688.csv	LOF	0.6906	0.0625	
wave_benchmark_0010.csv	KNN	0.52	0.3407	
wave_benchmark_0010.csv	PCA	0.4775	0.3257	
wave_benchmark_0010.csv	LOF	0.5098	0.3337	
wave_benchmark_0464.csv	KNN	0.6553	0.0	
wave_benchmark_0464.csv	PCA	0.6933	0.0	
wave_benchmark_0464.csv	LOF	0.7987	0.0	
wave_benchmark_0280.csv	KNN	0.5479	0.6032	
wave_benchmark_0280.csv	PCA	0.603	0.6614	
wave_benchmark_0280.csv	LOF	0.5467	0.5926	
wave_benchmark_0631.csv	KNN	0.5722	0.0	
wave_benchmark_0631.csv	PCA	0.6777	0.0	
wave_benchmark_0631.csv	LOF	0.5499	0.0	
wave_benchmark_0334.csv	KNN	0.7887	0.0	
wave_benchmark_0334.csv	PCA	0.8493	0.0	
wave_benchmark_0334.csv	LOF	0.7216	0.0	
wave_benchmark_0240.csv	KNN	0.492	0.4813	
wave_benchmark_0240.csv	PCA	0.4851	0.4813	
wave_benchmark_0240.csv	LOF	0.4905	0.4769	
wave_benchmark_0966.csv	KNN	0.72	0.0323	
wave_benchmark_0966.csv	PCA	0.6223	0.0323	
wave_benchmark_0966.csv	LOF	0.7113	0.0645	
wave_benchmark_0242.csv	KNN	0.4811	0.5484	
wave_benchmark_0242.csv	PCA	0.5904	0.6075	
wave_benchmark_0242.csv	LOF	0.4765	0.5538	
wave_benchmark_0986.csv	KNN	0.6282	0.0968	

wave_benchmark_0986.csv	PCA	0.7156	0.0	
wave_benchmark_0986.csv	LOF	0.6329	0.0968	
wave_benchmark_1620.csv	KNN	0.6059	0.1672	
wave_benchmark_1620.csv	PCA	0.5807	0.1791	
wave_benchmark_1620.csv	LOF	0.579	0.1403	
wave_benchmark_1597.csv	KNN	0.5865	0.1612	
wave_benchmark_1597.csv	PCA	0.612	0.1582	
wave_benchmark_1597.csv	LOF	0.5857	0.1403	
wave_benchmark_1309.csv	KNN	0.6723	0.1635	
wave_benchmark_1309.csv	PCA	0.6192	0.1006	
wave_benchmark_1309.csv	LOF	0.6461	0.1069	
wave_benchmark_1614.csv	KNN	0.6072	0.1612	
wave_benchmark_1614.csv	PCA	0.5659	0.1284	
wave_benchmark_1614.csv	LOF	0.5949	0.1433	
wave_benchmark_0221.csv	KNN	0.494	0.4722	
wave_benchmark_0221.csv	PCA	0.4738	0.4358	
wave_benchmark_0221.csv	LOF	0.493	0.4576	
wave_benchmark_1594.csv	KNN	0.6474	0.1881	
wave_benchmark_1594.csv	PCA	0.6513	0.206	
wave_benchmark_1594.csv	LOF	0.6154	0.1493	
wave_benchmark_0216.csv	KNN	0.4898	0.4654	
wave_benchmark_0216.csv	PCA	0.5018	0.4493	
wave_benchmark_0216.csv	LOF	0.4867	0.4654	
wave_benchmark_1575.csv	KNN	0.6182	0.1761	
wave_benchmark_1575.csv	PCA	0.5852	0.1343	
wave_benchmark_1575.csv	LOF	0.5949	0.1373	
wave_benchmark_0002.csv	KNN	0.5228	0.3481	
wave_benchmark_0002.csv	PCA	0.4759	0.3443	
wave_benchmark_0002.csv	LOF	0.5092	0.3423	
wave_benchmark_0198.csv	KNN	0.4948	0.4945	
wave_benchmark_0198.csv	PCA	0.5025	0.4812	
wave_benchmark_0198.csv	LOF	0.4966	0.4879	
wave_benchmark_1012.csv	KNN	0.6788	0.0323	
wave_benchmark_1012.csv	PCA	0.643	0.0323	
wave_benchmark_1012.csv	LOF	0.6606	0.0323	
wave_benchmark_0262.csv	KNN	0.4948	0.543	
wave_benchmark_0262.csv	PCA	0.5918	0.6075	
wave_benchmark_0262.csv	LOF	0.4867	0.5591	
wave_benchmark_0629.csv	KNN	0.7062	0.0625	
wave_benchmark_0629.csv	PCA	0.7069	0.125	
wave_benchmark_0629.csv	LOF	0.6561	0.0625	
wave_benchmark_1557.csv	KNN	0.5652	0.1313	
wave_benchmark_1557.csv	PCA	0.5749	0.1433	
wave_benchmark_1557.csv	LOF	0.543	0.1224	
wave_benchmark_0362.csv	KNN	0.6228	0.25	
wave_benchmark_0362.csv	PCA	0.6871	0.0	
wave_benchmark_0362.csv	LOF	0.5849	0.25	
wave_benchmark_1517.csv	KNN	0.6226	0.1791	
wave_benchmark_1517.csv	PCA	0.5893	0.1313	
wave_benchmark_1517.csv	LOF	0.6064	0.1761	
wave_benchmark_0755.csv	KNN	0.426	0.0	
wave_benchmark_0755.csv	PCA	0.6307	0.0	
wave_benchmark_0755.csv	LOF	0.5124	0.0	

wave_benchmark_0142.csv	KNN	0.5215	0.3951	
wave_benchmark_0142.csv	PCA	0.5189	0.3929	
wave_benchmark_0142.csv	LOF	0.5722	0.4184	
wave_benchmark_0437.csv	KNN	0.5023	0.0	
wave_benchmark_0437.csv	PCA	0.7698	0.0	
wave_benchmark_0437.csv	LOF	0.465	0.0	
wave_benchmark_0924.csv	KNN	0.7438	0.0645	
wave_benchmark_0924.csv	PCA	0.698	0.0323	
wave_benchmark_0924.csv	LOF	0.7268	0.0645	
wave_benchmark_1040.csv	KNN	0.4932	0.0833	
wave_benchmark_1040.csv	PCA	0.5287	0.0833	
wave_benchmark_1040.csv	LOF	0.4722	0.0833	
wave_benchmark_0941.csv	KNN	0.7343	0.129	
wave_benchmark_0941.csv	PCA	0.6726	0.0	
wave_benchmark_0941.csv	LOF	0.7137	0.129	
wave_benchmark_1599.csv	KNN	0.6241	0.1612	
wave_benchmark_1599.csv	PCA	0.6326	0.1642	
wave_benchmark_1599.csv	LOF	0.5989	0.1254	
wave_benchmark_1205.csv	KNN	0.736	0.1761	
wave_benchmark_1205.csv	PCA	0.6303	0.1069	
wave_benchmark_1205.csv	LOF	0.7015	0.1132	
wave_benchmark_0210.csv	KNN	0.4834	0.4695	
wave_benchmark_0210.csv	PCA	0.4968	0.4695	
wave_benchmark_0210.csv	LOF	0.4891	0.465	
wave_benchmark_0213.csv	KNN	0.4846	0.4587	
wave_benchmark_0213.csv	PCA	0.4922	0.4564	
wave_benchmark_0213.csv	LOF	0.4799	0.4495	
wave_benchmark_0257.csv	KNN	0.4494	0.4831	
wave_benchmark_0257.csv	PCA	0.518	0.5225	
wave_benchmark_0257.csv	LOF	0.4356	0.4944	
wave_benchmark_1204.csv	KNN	0.7388	0.2013	
wave_benchmark_1204.csv	PCA	0.6388	0.0692	
wave_benchmark_1204.csv	LOF	0.7162	0.1635	
wave_benchmark_0098.csv	KNN	0.5379	0.3616	
wave_benchmark_0098.csv	PCA	0.5475	0.3755	
wave_benchmark_0098.csv	LOF	0.5322	0.3496	
wave_benchmark_1080.csv	KNN	0.5093	0.0833	
wave_benchmark_1080.csv	PCA	0.5759	0.0833	
wave_benchmark_1080.csv	LOF	0.5159	0.0833	
wave_benchmark_1079.csv	KNN	0.5621	0.0	
wave_benchmark_1079.csv	PCA	0.6488	0.0	
wave_benchmark_1079.csv	LOF	0.5782	0.0	
wave_benchmark_0114.csv	KNN	0.5215	0.3526	
wave_benchmark_0114.csv	PCA	0.4957	0.3376	
wave_benchmark_0114.csv	LOF	0.5325	0.3625	
wave_benchmark_0775.csv	KNN	0.24	0.0	
wave_benchmark_0775.csv	PCA	0.4103	0.0	
wave_benchmark_0775.csv	LOF	0.2675	0.0	
wave_benchmark_0630.csv	KNN	0.6454	0.0	
wave_benchmark_0630.csv	PCA	0.7227	0.0	
wave_benchmark_0630.csv	LOF	0.6145	0.0	
wave_benchmark_1247.csv	KNN	0.6721	0.1447	
wave_benchmark_1247.csv	PCA	0.5975	0.0566	

wave_benchmark_1247.csv	LOF	0.6462	0.1132	
wave_benchmark_0926.csv	KNN	0.7049	0.0645	
wave_benchmark_0926.csv	PCA	0.7106	0.0	
wave_benchmark_0926.csv	LOF	0.6826	0.0645	
wave_benchmark_0014.csv	KNN	0.525	0.3397	
wave_benchmark_0014.csv	PCA	0.496	0.3357	
wave_benchmark_0014.csv	LOF	0.5067	0.3196	
wave_benchmark_0776.csv	KNN	0.4985	0.0	
wave_benchmark_0776.csv	PCA	0.5011	0.0	
wave_benchmark_0776.csv	LOF	0.4286	0.0	
wave_benchmark_0007.csv	KNN	0.5245	0.3736	
wave_benchmark_0007.csv	PCA	0.5038	0.3552	
wave_benchmark_0007.csv	LOF	0.5011	0.3475	
wave_benchmark_0319.csv	KNN	0.7184	0.0	
wave_benchmark_0319.csv	PCA	0.7665	0.0	
wave_benchmark_0319.csv	LOF	0.711	0.0	
wave_benchmark_0209.csv	KNN	0.4834	0.4522	
wave_benchmark_0209.csv	PCA	0.5036	0.4732	
wave_benchmark_0209.csv	LOF	0.4898	0.4522	
wave_benchmark_0160.csv	KNN	0.5068	0.3772	
wave_benchmark_0160.csv	PCA	0.5171	0.3884	
wave_benchmark_0160.csv	LOF	0.5302	0.4007	
wave_benchmark_1201.csv	KNN	0.7015	0.1321	
wave_benchmark_1201.csv	PCA	0.6456	0.0943	
wave_benchmark_1201.csv	LOF	0.6825	0.0881	
wave_benchmark_1240.csv	KNN	0.6194	0.0943	
wave_benchmark_1240.csv	PCA	0.6458	0.1006	
wave_benchmark_1240.csv	LOF	0.6108	0.0881	
wave_benchmark_0102.csv	KNN	0.5033	0.3366	
wave_benchmark_0102.csv	PCA	0.4828	0.3502	
wave_benchmark_0102.csv	LOF	0.4921	0.3103	
wave_benchmark_0097.csv	KNN	0.5567	0.3916	
wave_benchmark_0097.csv	PCA	0.5583	0.3984	
wave_benchmark_0097.csv	LOF	0.5415	0.38	
wave_benchmark_0995.csv	KNN	0.5922	0.0968	
wave_benchmark_0995.csv	PCA	0.6706	0.0323	
wave_benchmark_0995.csv	LOF	0.6008	0.0968	
wave_benchmark_0736.csv	KNN	0.6657	0.0	
wave_benchmark_0736.csv	PCA	0.5998	0.0	
wave_benchmark_0736.csv	LOF	0.6595	0.0	
wave_benchmark_1519.csv	KNN	0.5791	0.1522	
wave_benchmark_1519.csv	PCA	0.5367	0.1313	
wave_benchmark_1519.csv	LOF	0.5722	0.1224	
wave_benchmark_0391.csv	KNN	0.6587	0.0	
wave_benchmark_0391.csv	PCA	0.5349	0.0	
wave_benchmark_0391.csv	LOF	0.63	0.0	
wave_benchmark_0601.csv	KNN	0.7896	0.125	
wave_benchmark_0601.csv	PCA	0.6879	0.0625	
wave_benchmark_0601.csv	LOF	0.7979	0.0625	
wave_benchmark_0399.csv	KNN	0.823	0.0	
wave_benchmark_0399.csv	PCA	0.7178	0.0	
wave_benchmark_0399.csv	LOF	0.7948	0.0	
wave_benchmark_1531.csv	KNN	0.6285	0.1881	

wave_benchmark_1531.csv	PCA	0.6391	0.1851	
wave_benchmark_1531.csv	LOF	0.6073	0.1642	
wave_benchmark_0778.csv	KNN	0.3428	0.0	
wave_benchmark_0778.csv	PCA	0.4896	0.0	
wave_benchmark_0778.csv	LOF	0.3152	0.0	
wave_benchmark_0195.csv	KNN	0.5151	0.4978	
wave_benchmark_0195.csv	PCA	0.5175	0.5	
wave_benchmark_0195.csv	LOF	0.5101	0.4956	
wave_benchmark_0373.csv	KNN	0.6868	0.0	
wave_benchmark_0373.csv	PCA	0.8634	0.0	
wave_benchmark_0373.csv	LOF	0.6725	0.0	
wave_benchmark_0425.csv	KNN	0.0815	0.0	
wave_benchmark_0425.csv	PCA	0.2003	0.0	
wave_benchmark_0425.csv	LOF	0.2955	0.0	
wave_benchmark_0238.csv	KNN	0.5172	0.4856	
wave_benchmark_0238.csv	PCA	0.5065	0.4789	
wave_benchmark_0238.csv	LOF	0.5182	0.49	
wave_benchmark_0331.csv	KNN	0.8596	0.0	
wave_benchmark_0331.csv	PCA	0.8219	0.0	
wave_benchmark_0331.csv	LOF	0.8713	0.0	
wave_benchmark_0225.csv	KNN	0.4852	0.4596	
wave_benchmark_0225.csv	PCA	0.4706	0.4439	
wave_benchmark_0225.csv	LOF	0.4845	0.4619	
wave_benchmark_0335.csv	KNN	0.5949	0.0	
wave_benchmark_0335.csv	PCA	0.6243	0.0	
wave_benchmark_0335.csv	LOF	0.5962	0.0	
wave_benchmark_0249.csv	KNN	0.5131	0.5611	
wave_benchmark_0249.csv	PCA	0.592	0.5778	
wave_benchmark_0249.csv	LOF	0.5066	0.5444	
wave_benchmark_1241.csv	KNN	0.6939	0.1509	
wave_benchmark_1241.csv	PCA	0.6129	0.0755	
wave_benchmark_1241.csv	LOF	0.671	0.0818	
wave_benchmark_0282.csv	KNN	0.5085	0.5253	
wave_benchmark_0282.csv	PCA	0.4969	0.519	
wave_benchmark_0282.csv	LOF	0.5039	0.557	
wave_benchmark_0094.csv	KNN	0.5424	0.3804	
wave_benchmark_0094.csv	PCA	0.5597	0.4024	
wave_benchmark_0094.csv	LOF	0.5517	0.3854	
wave_benchmark_0716.csv	KNN	0.6156	0.0	
wave_benchmark_0716.csv	PCA	0.5664	0.0	
wave_benchmark_0716.csv	LOF	0.6054	0.0	
wave_benchmark_0295.csv	KNN	0.4666	0.522	
wave_benchmark_0295.csv	PCA	0.5052	0.5472	
wave_benchmark_0295.csv	LOF	0.4749	0.522	
wave_benchmark_1242.csv	KNN	0.6974	0.1824	
wave_benchmark_1242.csv	PCA	0.6461	0.0943	
wave_benchmark_1242.csv	LOF	0.6918	0.1509	
wave_benchmark_1213.csv	KNN	0.6544	0.1195	
wave_benchmark_1213.csv	PCA	0.5908	0.0881	
wave_benchmark_1213.csv	LOF	0.6163	0.0881	
wave_benchmark_1021.csv	KNN	0.4153	0.0	
wave_benchmark_1021.csv	PCA	0.7627	0.0	
wave_benchmark_1021.csv	LOF	0.5263	0.0	

wave_benchmark_1017.csv	KNN	0.6226	0.0323	
wave_benchmark_1017.csv	PCA	0.5761	0.0	
wave_benchmark_1017.csv	LOF	0.6059	0.0645	
wave_benchmark_0909.csv	KNN	0.6981	0.0323	
wave_benchmark_0909.csv	PCA	0.5673	0.0	
wave_benchmark_0909.csv	LOF	0.7023	0.0323	
wave_benchmark_0769.csv	KNN	0.4199	0.0	
wave_benchmark_0769.csv	PCA	0.5324	0.0	
wave_benchmark_0769.csv	LOF	0.5082	0.0	
wave_benchmark_0206.csv	KNN	0.4707	0.4573	
wave_benchmark_0206.csv	PCA	0.4963	0.455	
wave_benchmark_0206.csv	LOF	0.4749	0.4688	
wave_benchmark_1015.csv	KNN	0.7421	0.0645	
wave_benchmark_1015.csv	PCA	0.5289	0.0	
wave_benchmark_1015.csv	LOF	0.7267	0.0645	
wave_benchmark_0220.csv	KNN	0.4785	0.472	
wave_benchmark_0220.csv	PCA	0.4859	0.4653	
wave_benchmark_0220.csv	LOF	0.4813	0.4698	
wave_benchmark_0625.csv	KNN	0.6356	0.0625	
wave_benchmark_0625.csv	PCA	0.7096	0.0	
wave_benchmark_0625.csv	LOF	0.6332	0.0625	
wave_benchmark_1294.csv	KNN	0.6525	0.1509	
wave_benchmark_1294.csv	PCA	0.6638	0.0943	
wave_benchmark_1294.csv	LOF	0.6301	0.1384	
wave_benchmark_0768.csv	KNN	0.3574	0.0	
wave_benchmark_0768.csv	PCA	0.426	0.0	
wave_benchmark_0768.csv	LOF	0.3669	0.0	
wave_benchmark_0992.csv	KNN	0.6165	0.0	
wave_benchmark_0992.csv	PCA	0.628	0.0	
wave_benchmark_0992.csv	LOF	0.6059	0.0	
wave_benchmark_0659.csv	KNN	0.6778	0.0625	
wave_benchmark_0659.csv	PCA	0.6452	0.0	
wave_benchmark_0659.csv	LOF	0.6881	0.0625	
wave_benchmark_0026.csv	KNN	0.5545	0.3719	
wave_benchmark_0026.csv	PCA	0.5645	0.3915	
wave_benchmark_0026.csv	LOF	0.5347	0.345	
wave_benchmark_0330.csv	KNN	0.5542	0.25	
wave_benchmark_0330.csv	PCA	0.6648	0.0	
wave_benchmark_0330.csv	LOF	0.5341	0.0	
wave_benchmark_0646.csv	KNN	0.6222	0.0	
wave_benchmark_0646.csv	PCA	0.6049	0.0	
wave_benchmark_0646.csv	LOF	0.6155	0.0	
wave_benchmark_1630.csv	KNN	0.4143	0.044	
wave_benchmark_1630.csv	PCA	0.5798	0.1572	
wave_benchmark_1630.csv	LOF	0.4567	0.0503	
wave_benchmark_0232.csv	KNN	0.4927	0.4705	
wave_benchmark_0232.csv	PCA	0.4798	0.4477	
wave_benchmark_0232.csv	LOF	0.4906	0.4818	
wave_benchmark_0260.csv	KNN	0.473	0.5495	
wave_benchmark_0260.csv	PCA	0.5185	0.5769	
wave_benchmark_0260.csv	LOF	0.4638	0.522	
wave_benchmark_1061.csv	KNN	0.4699	0.0833	
wave_benchmark_1061.csv	PCA	0.4177	0.0833	

wave_benchmark_1061.csv	LOF	0.5498	0.0833
wave_benchmark_1600.csv	KNN	0.578	0.1433
wave_benchmark_1600.csv	PCA	0.605	0.1642
wave_benchmark_1600.csv	LOF	0.5627	0.1343
wave_benchmark_0644.csv	KNN	0.8388	0.125
wave_benchmark_0644.csv	PCA	0.6576	0.0
wave_benchmark_0644.csv	LOF	0.8404	0.0625
wave_benchmark_0329.csv	KNN	0.9893	0.3333
wave_benchmark_0329.csv	PCA	0.9498	0.0
wave_benchmark_0329.csv	LOF	0.9921	0.6667
wave_benchmark_1541.csv	KNN	0.6753	0.2209
wave_benchmark_1541.csv	PCA	0.616	0.1612
wave_benchmark_1541.csv	LOF	0.6264	0.1373
wave_benchmark_0015.csv	KNN	0.4951	0.3142
wave_benchmark_0015.csv	PCA	0.4864	0.3132
wave_benchmark_0015.csv	LOF	0.4943	0.3153
wave_benchmark_0770.csv	KNN	0.4699	0.0
wave_benchmark_0770.csv	PCA	0.6108	0.0
wave_benchmark_0770.csv	LOF	0.5151	0.0
wave_benchmark_0246.csv	KNN	0.4706	0.5217
wave_benchmark_0246.csv	PCA	0.552	0.5707
wave_benchmark_0246.csv	LOF	0.4716	0.5272
wave_benchmark_1001.csv	KNN	0.6876	0.0968
wave_benchmark_1001.csv	PCA	0.6378	0.0
wave_benchmark_1001.csv	LOF	0.69	0.0968
wave_benchmark_0745.csv	KNN	0.4515	0.0
wave_benchmark_0745.csv	PCA	0.6444	0.0
wave_benchmark_0745.csv	LOF	0.5039	0.0
wave_benchmark_1231.csv	KNN	0.6079	0.1006
wave_benchmark_1231.csv	PCA	0.6489	0.1258
wave_benchmark_1231.csv	LOF	0.5756	0.1195
wave_benchmark_0923.csv	KNN	0.6878	0.129
wave_benchmark_0923.csv	PCA	0.6796	0.0
wave_benchmark_0923.csv	LOF	0.6871	0.1613
wave_benchmark_0405.csv	KNN	0.7399	0.25
wave_benchmark_0405.csv	PCA	0.655	0.0
wave_benchmark_0405.csv	LOF	0.7885	0.25
wave_benchmark_1233.csv	KNN	0.6291	0.1321
wave_benchmark_1233.csv	PCA	0.634	0.1132
wave_benchmark_1233.csv	LOF	0.611	0.1069
wave_benchmark_0446.csv	KNN	0.4345	0.0
wave_benchmark_0446.csv	PCA	0.4596	0.0
wave_benchmark_0446.csv	LOF	0.4828	0.0
wave_benchmark_0119.csv	KNN	0.5146	0.3399
wave_benchmark_0119.csv	PCA	0.5017	0.3275
wave_benchmark_0119.csv	LOF	0.5119	0.3368
wave_benchmark_0774.csv	KNN	0.3687	0.0
wave_benchmark_0774.csv	PCA	0.4371	0.0
wave_benchmark_0774.csv	LOF	0.3519	0.0
wave_benchmark_0127.csv	KNN	0.4843	0.3835
wave_benchmark_0127.csv	PCA	0.4327	0.3667
wave_benchmark_0127.csv	LOF	0.5125	0.4044
wave_benchmark_0953.csv	KNN	0.7372	0.0645

wave_benchmark_0953.csv	PCA	0.6476	0.0323	
wave_benchmark_0953.csv	LOF	0.7239	0.0968	
wave_benchmark_0947.csv	KNN	0.764	0.0968	
wave_benchmark_0947.csv	PCA	0.5812	0.0	
wave_benchmark_0947.csv	LOF	0.7668	0.0968	
wave_benchmark_0459.csv	KNN	0.2597	0.0	
wave_benchmark_0459.csv	PCA	0.3708	0.0	
wave_benchmark_0459.csv	LOF	0.2009	0.0	
wave_benchmark_0393.csv	KNN	0.8533	0.0	
wave_benchmark_0393.csv	PCA	0.8505	0.0	
wave_benchmark_0393.csv	LOF	0.7614	0.0	
wave_benchmark_1227.csv	KNN	0.6826	0.1887	
wave_benchmark_1227.csv	PCA	0.671	0.1132	
wave_benchmark_1227.csv	LOF	0.671	0.1698	
wave_benchmark_1216.csv	KNN	0.6269	0.0943	
wave_benchmark_1216.csv	PCA	0.5944	0.1069	
wave_benchmark_1216.csv	LOF	0.5985	0.0818	
wave_benchmark_0395.csv	KNN	0.6705	0.0	
wave_benchmark_0395.csv	PCA	0.7689	0.0	
wave_benchmark_0395.csv	LOF	0.7247	0.0	
wave_benchmark_0642.csv	KNN	0.7878	0.125	
wave_benchmark_0642.csv	PCA	0.6088	0.0	
wave_benchmark_0642.csv	LOF	0.8224	0.1875	
wave_benchmark_0682.csv	KNN	0.8229	0.0625	
wave_benchmark_0682.csv	PCA	0.7368	0.0	
wave_benchmark_0682.csv	LOF	0.8059	0.0625	
wave_benchmark_0654.csv	KNN	0.7551	0.0625	
wave_benchmark_0654.csv	PCA	0.6247	0.0	
wave_benchmark_0654.csv	LOF	0.7639	0.0625	
wave_benchmark_1032.csv	KNN	0.3965	0.0	
wave_benchmark_1032.csv	PCA	0.4393	0.0833	
wave_benchmark_1032.csv	LOF	0.4323	0.0833	
wave_benchmark_1264.csv	KNN	0.716	0.2013	
wave_benchmark_1264.csv	PCA	0.5965	0.044	
wave_benchmark_1264.csv	LOF	0.6817	0.1321	
wave_benchmark_1206.csv	KNN	0.6867	0.1321	
wave_benchmark_1206.csv	PCA	0.6002	0.0881	
wave_benchmark_1206.csv	LOF	0.6631	0.1195	
wave_benchmark_0332.csv	KNN	0.8761	0.0	
wave_benchmark_0332.csv	PCA	0.8884	0.0	
wave_benchmark_0332.csv	LOF	0.8916	0.0	
wave_benchmark_0749.csv	KNN	0.4634	0.0	
wave_benchmark_0749.csv	PCA	0.5909	0.1667	
wave_benchmark_0749.csv	LOF	0.5216	0.0	
wave_benchmark_1332.csv	KNN	0.4492	0.0923	
wave_benchmark_1332.csv	PCA	0.5557	0.1077	
wave_benchmark_1332.csv	LOF	0.4637	0.0923	
wave_benchmark_1300.csv	KNN	0.5696	0.1069	
wave_benchmark_1300.csv	PCA	0.6048	0.0943	
wave_benchmark_1300.csv	LOF	0.5612	0.1069	
wave_benchmark_0460.csv	KNN	0.5918	0.0	
wave_benchmark_0460.csv	PCA	0.7597	0.0	
wave_benchmark_0460.csv	LOF	0.5436	0.0	

wave_benchmark_0670.csv	KNN	0.6521	0.0	
wave_benchmark_0670.csv	PCA	0.6526	0.0	
wave_benchmark_0670.csv	LOF	0.5589	0.0	
wave_benchmark_0047.csv	KNN	0.52	0.3496	
wave_benchmark_0047.csv	PCA	0.4847	0.3376	
wave_benchmark_0047.csv	LOF	0.5176	0.3446	
wave_benchmark_1302.csv	KNN	0.6589	0.1069	
wave_benchmark_1302.csv	PCA	0.6379	0.0755	
wave_benchmark_1302.csv	LOF	0.6427	0.0881	
wave_benchmark_0910.csv	KNN	0.6746	0.0	
wave_benchmark_0910.csv	PCA	0.6464	0.0645	
wave_benchmark_0910.csv	LOF	0.6703	0.0323	
wave_benchmark_0008.csv	KNN	0.5294	0.3601	
wave_benchmark_0008.csv	PCA	0.4956	0.3423	
wave_benchmark_0008.csv	LOF	0.5141	0.3423	
wave_benchmark_1636.csv	KNN	0.4463	0.0774	
wave_benchmark_1636.csv	PCA	0.5412	0.1226	
wave_benchmark_1636.csv	LOF	0.457	0.071	
wave_benchmark_0606.csv	KNN	0.7499	0.0	
wave_benchmark_0606.csv	PCA	0.5796	0.0	
wave_benchmark_0606.csv	LOF	0.7311	0.0625	
wave_benchmark_0063.csv	KNN	0.5257	0.3384	
wave_benchmark_0063.csv	PCA	0.4888	0.3384	
wave_benchmark_0063.csv	LOF	0.511	0.3139	
wave_benchmark_0150.csv	KNN	0.4912	0.3337	
wave_benchmark_0150.csv	PCA	0.5102	0.3703	
wave_benchmark_0150.csv	LOF	0.539	0.3783	
wave_benchmark_1265.csv	KNN	0.6898	0.1824	
wave_benchmark_1265.csv	PCA	0.645	0.0755	
wave_benchmark_1265.csv	LOF	0.69	0.1321	
wave_benchmark_0261.csv	KNN	0.4993	0.5864	
wave_benchmark_0261.csv	PCA	0.5851	0.6126	
wave_benchmark_0261.csv	LOF	0.5001	0.5812	
wave_benchmark_0224.csv	KNN	0.4943	0.4554	
wave_benchmark_0224.csv	PCA	0.4748	0.446	
wave_benchmark_0224.csv	LOF	0.4983	0.4577	
wave_benchmark_0306.csv	KNN	0.5992	0.0	
wave_benchmark_0306.csv	PCA	0.6228	0.0	
wave_benchmark_0306.csv	LOF	0.5573	0.0	
wave_benchmark_1237.csv	KNN	0.6078	0.1195	
wave_benchmark_1237.csv	PCA	0.6239	0.1195	
wave_benchmark_1237.csv	LOF	0.6004	0.1069	
wave_benchmark_0070.csv	KNN	0.5056	0.3297	
wave_benchmark_0070.csv	PCA	0.4856	0.3457	
wave_benchmark_0070.csv	LOF	0.5066	0.3347	
wave_benchmark_0371.csv	KNN	0.664	0.0	
wave_benchmark_0371.csv	PCA	0.6518	0.0	
wave_benchmark_0371.csv	LOF	0.5705	0.0	
wave_benchmark_1281.csv	KNN	0.7119	0.1635	
wave_benchmark_1281.csv	PCA	0.6941	0.1195	
wave_benchmark_1281.csv	LOF	0.6888	0.1384	
wave_benchmark_0324.csv	KNN	0.9474	0.0	
wave_benchmark_0324.csv	PCA	0.9169	0.0	

wave_benchmark_0324.csv	LOF	0.8992	0.0
wave_benchmark_0940.csv	KNN	0.6976	0.0
wave_benchmark_0940.csv	PCA	0.6694	0.0645
wave_benchmark_0940.csv	LOF	0.6649	0.0
wave_benchmark_0950.csv	KNN	0.6616	0.0645
wave_benchmark_0950.csv	PCA	0.5602	0.0
wave_benchmark_0950.csv	LOF	0.6751	0.0645
wave_benchmark_0657.csv	KNN	0.6262	0.0
wave_benchmark_0657.csv	PCA	0.572	0.0
wave_benchmark_0657.csv	LOF	0.6244	0.0
wave_benchmark_0672.csv	KNN	0.5945	0.0
wave_benchmark_0672.csv	PCA	0.4435	0.0
wave_benchmark_0672.csv	LOF	0.5907	0.0
wave_benchmark_1293.csv	KNN	0.6443	0.1447
wave_benchmark_1293.csv	PCA	0.6541	0.0818
wave_benchmark_1293.csv	LOF	0.6359	0.1321
wave_benchmark_0718.csv	KNN	0.6486	0.0
wave_benchmark_0718.csv	PCA	0.6163	0.0625
wave_benchmark_0718.csv	LOF	0.6414	0.0
wave_benchmark_0432.csv	KNN	0.5957	0.0
wave_benchmark_0432.csv	PCA	0.7311	0.0
wave_benchmark_0432.csv	LOF	0.6867	0.0
wave_benchmark_0731.csv	KNN	0.5858	0.0
wave_benchmark_0731.csv	PCA	0.5923	0.0
wave_benchmark_0731.csv	LOF	0.5731	0.0
wave_benchmark_0702.csv	KNN	0.7902	0.125
wave_benchmark_0702.csv	PCA	0.644	0.0
wave_benchmark_0702.csv	LOF	0.7894	0.125
wave_benchmark_1009.csv	KNN	0.6659	0.0645
wave_benchmark_1009.csv	PCA	0.5536	0.0323
wave_benchmark_1009.csv	LOF	0.668	0.0323
wave_benchmark_1273.csv	KNN	0.6007	0.1321
wave_benchmark_1273.csv	PCA	0.572	0.0629
wave_benchmark_1273.csv	LOF	0.6036	0.1321
wave_benchmark_0671.csv	KNN	0.6959	0.0625
wave_benchmark_0671.csv	PCA	0.5373	0.0625
wave_benchmark_0671.csv	LOF	0.68	0.0625
wave_benchmark_0366.csv	KNN	0.6792	0.0
wave_benchmark_0366.csv	PCA	0.662	0.0
wave_benchmark_0366.csv	LOF	0.719	0.0
wave_benchmark_0417.csv	KNN	0.5983	0.0
wave_benchmark_0417.csv	PCA	0.4901	0.0
wave_benchmark_0417.csv	LOF	0.6033	0.0
wave_benchmark_0023.csv	KNN	0.5804	0.3891
wave_benchmark_0023.csv	PCA	0.57	0.4129
wave_benchmark_0023.csv	LOF	0.5341	0.3443
wave_benchmark_0684.csv	KNN	0.742	0.1875
wave_benchmark_0684.csv	PCA	0.7593	0.0625
wave_benchmark_0684.csv	LOF	0.7398	0.125
wave_benchmark_0729.csv	KNN	0.482	0.0
wave_benchmark_0729.csv	PCA	0.4489	0.0
wave_benchmark_0729.csv	LOF	0.5098	0.0
wave_benchmark_0387.csv	KNN	0.878	0.0

wave_benchmark_0387.csv	PCA	0.751	0.0	
wave_benchmark_0387.csv	LOF	0.8792	0.25	
wave_benchmark_0415.csv	KNN	0.5539	0.0	
wave_benchmark_0415.csv	PCA	0.3599	0.0	
wave_benchmark_0415.csv	LOF	0.4858	0.0	
wave_benchmark_0201.csv	KNN	0.4909	0.4434	
wave_benchmark_0201.csv	PCA	0.4998	0.4623	
wave_benchmark_0201.csv	LOF	0.4881	0.4434	
wave_benchmark_1068.csv	KNN	0.4714	0.0	
wave_benchmark_1068.csv	PCA	0.6352	0.0	
wave_benchmark_1068.csv	LOF	0.5033	0.0	
wave_benchmark_0759.csv	KNN	0.4455	0.0	
wave_benchmark_0759.csv	PCA	0.4943	0.0	
wave_benchmark_0759.csv	LOF	0.4441	0.0	
wave_benchmark_0109.csv	KNN	0.5268	0.335	
wave_benchmark_0109.csv	PCA	0.4945	0.334	
wave_benchmark_0109.csv	LOF	0.5309	0.335	
wave_benchmark_0079.csv	KNN	0.4883	0.3435	
wave_benchmark_0079.csv	PCA	0.487	0.3397	
wave_benchmark_0079.csv	LOF	0.5068	0.3569	
wave_benchmark_0145.csv	KNN	0.5129	0.3554	
wave_benchmark_0145.csv	PCA	0.5202	0.3815	
wave_benchmark_0145.csv	LOF	0.5669	0.4112	
wave_benchmark_0191.csv	KNN	0.4866	0.477	
wave_benchmark_0191.csv	PCA	0.4858	0.4539	
wave_benchmark_0191.csv	LOF	0.4848	0.4539	
wave_benchmark_0222.csv	KNN	0.4849	0.4582	
wave_benchmark_0222.csv	PCA	0.4867	0.4535	
wave_benchmark_0222.csv	LOF	0.4873	0.4415	
wave_benchmark_0473.csv	KNN	0.216	0.0	
wave_benchmark_0473.csv	PCA	0.4099	0.0	
wave_benchmark_0473.csv	LOF	0.1718	0.0	
wave_benchmark_1208.csv	KNN	0.6484	0.1761	
wave_benchmark_1208.csv	PCA	0.6417	0.0881	
wave_benchmark_1208.csv	LOF	0.6416	0.1509	
wave_benchmark_0949.csv	KNN	0.7238	0.0645	
wave_benchmark_0949.csv	PCA	0.5784	0.0	
wave_benchmark_0949.csv	LOF	0.7238	0.0645	
wave_benchmark_1511.csv	KNN	0.5932	0.1642	
wave_benchmark_1511.csv	PCA	0.5614	0.1254	
wave_benchmark_1511.csv	LOF	0.5761	0.1552	
wave_benchmark_0758.csv	KNN	0.3837	0.0	
wave_benchmark_0758.csv	PCA	0.4994	0.0	
wave_benchmark_0758.csv	LOF	0.3298	0.0	
wave_benchmark_1554.csv	KNN	0.6492	0.203	
wave_benchmark_1554.csv	PCA	0.5779	0.1433	
wave_benchmark_1554.csv	LOF	0.6329	0.1761	
wave_benchmark_0064.csv	KNN	0.515	0.3563	
wave_benchmark_0064.csv	PCA	0.4783	0.3505	
wave_benchmark_0064.csv	LOF	0.5053	0.3372	
wave_benchmark_1283.csv	KNN	0.7438	0.2516	
wave_benchmark_1283.csv	PCA	0.6959	0.1132	
wave_benchmark_1283.csv	LOF	0.7383	0.2264	

wave_benchmark_0975.csv	KNN	0.7761	0.0323
wave_benchmark_0975.csv	PCA	0.6464	0.0645
wave_benchmark_0975.csv	LOF	0.7472	0.0323
wave_benchmark_0090.csv	KNN	0.5523	0.3813
wave_benchmark_0090.csv	PCA	0.5633	0.4086
wave_benchmark_0090.csv	LOF	0.5428	0.3765
wave_benchmark_1307.csv	KNN	0.7068	0.1635
wave_benchmark_1307.csv	PCA	0.6495	0.1069
wave_benchmark_1307.csv	LOF	0.7153	0.1635
wave_benchmark_1518.csv	KNN	0.5694	0.1403
wave_benchmark_1518.csv	PCA	0.5594	0.1104
wave_benchmark_1518.csv	LOF	0.5547	0.1254
wave_benchmark_0323.csv	KNN	0.8815	0.0
wave_benchmark_0323.csv	PCA	0.7173	0.0
wave_benchmark_0323.csv	LOF	0.8845	0.0
wave_benchmark_1295.csv	KNN	0.6297	0.1069
wave_benchmark_1295.csv	PCA	0.6559	0.0943
wave_benchmark_1295.csv	LOF	0.5992	0.0943
wave_benchmark_0301.csv	KNN	0.8792	0.0
wave_benchmark_0301.csv	PCA	0.8788	0.0
wave_benchmark_0301.csv	LOF	0.8319	0.0
wave_benchmark_0462.csv	KNN	0.5823	0.0
wave_benchmark_0462.csv	PCA	0.4663	0.0
wave_benchmark_0462.csv	LOF	0.5776	0.0
wave_benchmark_0234.csv	KNN	0.4778	0.4814
wave_benchmark_0234.csv	PCA	0.4779	0.4573
wave_benchmark_0234.csv	LOF	0.4814	0.4683
wave_benchmark_1562.csv	KNN	0.6749	0.194
wave_benchmark_1562.csv	PCA	0.6076	0.1373
wave_benchmark_1562.csv	LOF	0.612	0.1104
wave_benchmark_1243.csv	KNN	0.7392	0.2075
wave_benchmark_1243.csv	PCA	0.626	0.0629
wave_benchmark_1243.csv	LOF	0.711	0.1321
wave_benchmark_0461.csv	KNN	0.3633	0.0
wave_benchmark_0461.csv	PCA	0.506	0.0
wave_benchmark_0461.csv	LOF	0.3753	0.0
wave_benchmark_0703.csv	KNN	0.6011	0.0
wave_benchmark_0703.csv	PCA	0.6178	0.0
wave_benchmark_0703.csv	LOF	0.6184	0.0
wave_benchmark_0096.csv	KNN	0.5291	0.3566
wave_benchmark_0096.csv	PCA	0.5476	0.3736
wave_benchmark_0096.csv	LOF	0.5285	0.3497
wave_benchmark_0124.csv	KNN	0.4878	0.3711
wave_benchmark_0124.csv	PCA	0.4322	0.349
wave_benchmark_0124.csv	LOF	0.5278	0.4072
wave_benchmark_0441.csv	KNN	0.2565	0.0
wave_benchmark_0441.csv	PCA	0.4898	0.0
wave_benchmark_0441.csv	LOF	0.2528	0.0
wave_benchmark_1639.csv	KNN	0.462	0.098
wave_benchmark_1639.csv	PCA	0.5354	0.1569
wave_benchmark_1639.csv	LOF	0.4707	0.1046
wave_benchmark_0294.csv	KNN	0.4891	0.4932
wave_benchmark_0294.csv	PCA	0.5165	0.5479

wave_benchmark_0294.csv	LOF	0.4999	0.5411	
wave_benchmark_1315.csv	KNN	0.6278	0.0755	
wave_benchmark_1315.csv	PCA	0.5641	0.0692	
wave_benchmark_1315.csv	LOF	0.6212	0.0755	
wave_benchmark_1521.csv	KNN	0.687	0.2328	
wave_benchmark_1521.csv	PCA	0.6628	0.191	
wave_benchmark_1521.csv	LOF	0.6605	0.1821	
wave_benchmark_0404.csv	KNN	0.8792	0.0	
wave_benchmark_0404.csv	PCA	0.5125	0.0	
wave_benchmark_0404.csv	LOF	0.8857	0.0	
wave_benchmark_0380.csv	KNN	0.8242	0.0	
wave_benchmark_0380.csv	PCA	0.7287	0.0	
wave_benchmark_0380.csv	LOF	0.8095	0.0	
wave_benchmark_0184.csv	KNN	0.4982	0.4656	
wave_benchmark_0184.csv	PCA	0.5141	0.4908	
wave_benchmark_0184.csv	LOF	0.5037	0.4725	
wave_benchmark_0683.csv	KNN	0.7245	0.1875	
wave_benchmark_0683.csv	PCA	0.7593	0.0	
wave_benchmark_0683.csv	LOF	0.7331	0.1875	
wave_benchmark_0436.csv	KNN	0.2587	0.0	
wave_benchmark_0436.csv	PCA	0.3452	0.0	
wave_benchmark_0436.csv	LOF	0.3227	0.0	
wave_benchmark_0285.csv	KNN	0.4844	0.5099	
wave_benchmark_0285.csv	PCA	0.5032	0.5563	
wave_benchmark_0285.csv	LOF	0.4822	0.5364	
wave_benchmark_0955.csv	KNN	0.6296	0.0	
wave_benchmark_0955.csv	PCA	0.5876	0.0	
wave_benchmark_0955.csv	LOF	0.6152	0.0	
wave_benchmark_0304.csv	KNN	0.7611	0.0	
wave_benchmark_0304.csv	PCA	0.7232	0.0	
wave_benchmark_0304.csv	LOF	0.7637	0.0	
wave_benchmark_0394.csv	KNN	0.515	0.0	
wave_benchmark_0394.csv	PCA	0.7014	0.0	
wave_benchmark_0394.csv	LOF	0.4863	0.0	
wave_benchmark_0401.csv	KNN	0.7168	0.0	
wave_benchmark_0401.csv	PCA	0.4835	0.0	
wave_benchmark_0401.csv	LOF	0.6651	0.0	
wave_benchmark_0149.csv	KNN	0.5256	0.4068	
wave_benchmark_0149.csv	PCA	0.5251	0.3828	
wave_benchmark_0149.csv	LOF	0.5726	0.446	
wave_benchmark_0302.csv	KNN	0.8639	0.25	
wave_benchmark_0302.csv	PCA	0.7463	0.0	
wave_benchmark_0302.csv	LOF	0.8901	0.25	
wave_benchmark_0106.csv	KNN	0.5268	0.3643	
wave_benchmark_0106.csv	PCA	0.4915	0.3376	
wave_benchmark_0106.csv	LOF	0.5067	0.3346	
wave_benchmark_0620.csv	KNN	0.6541	0.0625	
wave_benchmark_0620.csv	PCA	0.6103	0.0	
wave_benchmark_0620.csv	LOF	0.6555	0.0625	
wave_benchmark_1617.csv	KNN	0.5878	0.1761	
wave_benchmark_1617.csv	PCA	0.5612	0.1493	
wave_benchmark_1617.csv	LOF	0.5704	0.1672	
wave_benchmark_0164.csv	KNN	0.4717	0.3546	

wave_benchmark_0164.csv	PCA	0.4272	0.3526
wave_benchmark_0164.csv	LOF	0.5262	0.4016
wave_benchmark_1067.csv	KNN	0.4584	0.0
wave_benchmark_1067.csv	PCA	0.5892	0.0
wave_benchmark_1067.csv	LOF	0.5266	0.0
wave_benchmark_1613.csv	KNN	0.6046	0.1821
wave_benchmark_1613.csv	PCA	0.5714	0.1343
wave_benchmark_1613.csv	LOF	0.5701	0.1493
wave_benchmark_0071.csv	KNN	0.4967	0.3292
wave_benchmark_0071.csv	PCA	0.4846	0.3474
wave_benchmark_0071.csv	LOF	0.5125	0.359
wave_benchmark_0121.csv	KNN	0.4823	0.375
wave_benchmark_0121.csv	PCA	0.4318	0.3581
wave_benchmark_0121.csv	LOF	0.521	0.4018
wave_benchmark_1258.csv	KNN	0.6372	0.0943
wave_benchmark_1258.csv	PCA	0.5869	0.0755
wave_benchmark_1258.csv	LOF	0.6208	0.0881
wave_benchmark_0048.csv	KNN	0.5569	0.3529
wave_benchmark_0048.csv	PCA	0.514	0.3508
wave_benchmark_0048.csv	LOF	0.5348	0.3416
wave_benchmark_0112.csv	KNN	0.5095	0.314
wave_benchmark_0112.csv	PCA	0.4777	0.314
wave_benchmark_0112.csv	LOF	0.5122	0.3161
wave_benchmark_0686.csv	KNN	0.7096	0.0
wave_benchmark_0686.csv	PCA	0.6906	0.0
wave_benchmark_0686.csv	LOF	0.7113	0.0
wave_benchmark_0245.csv	KNN	0.5018	0.5341
wave_benchmark_0245.csv	PCA	0.5648	0.5852
wave_benchmark_0245.csv	LOF	0.4939	0.5568
wave_benchmark_0634.csv	KNN	0.6507	0.0
wave_benchmark_0634.csv	PCA	0.6671	0.0625
wave_benchmark_0634.csv	LOF	0.6432	0.0625
wave_benchmark_1212.csv	KNN	0.6452	0.1258
wave_benchmark_1212.csv	PCA	0.5695	0.0943
wave_benchmark_1212.csv	LOF	0.6274	0.1069
wave_benchmark_0111.csv	KNN	0.5117	0.3316
wave_benchmark_0111.csv	PCA	0.4911	0.3235
wave_benchmark_0111.csv	LOF	0.4934	0.3124
wave_benchmark_0927.csv	KNN	0.6103	0.0
wave_benchmark_0927.csv	PCA	0.629	0.0
wave_benchmark_0927.csv	LOF	0.6028	0.0968
wave_benchmark_0669.csv	KNN	0.7392	0.0625
wave_benchmark_0669.csv	PCA	0.6335	0.0
wave_benchmark_0669.csv	LOF	0.7521	0.0625
wave_benchmark_0984.csv	KNN	0.7302	0.0323
wave_benchmark_0984.csv	PCA	0.6847	0.0323
wave_benchmark_0984.csv	LOF	0.7282	0.0645
wave_benchmark_0406.csv	KNN	0.8468	0.0
wave_benchmark_0406.csv	PCA	0.3668	0.0
wave_benchmark_0406.csv	LOF	0.8812	0.0
wave_benchmark_0325.csv	KNN	0.8366	0.0
wave_benchmark_0325.csv	PCA	0.8377	0.0
wave_benchmark_0325.csv	LOF	0.8051	0.0

wave_benchmark_0186.csv	KNN	0.4932	0.4612
wave_benchmark_0186.csv	PCA	0.5096	0.4922
wave_benchmark_0186.csv	LOF	0.4994	0.4701
wave_benchmark_0110.csv	KNN	0.5279	0.3559
wave_benchmark_0110.csv	PCA	0.4885	0.335
wave_benchmark_0110.csv	LOF	0.4838	0.3151
wave_benchmark_0122.csv	KNN	0.4543	0.3466
wave_benchmark_0122.csv	PCA	0.4265	0.3506
wave_benchmark_0122.csv	LOF	0.5158	0.3994
wave_benchmark_1272.csv	KNN	0.6153	0.1195
wave_benchmark_1272.csv	PCA	0.5829	0.0692
wave_benchmark_1272.csv	LOF	0.6014	0.1006
wave_benchmark_0633.csv	KNN	0.7375	0.0
wave_benchmark_0633.csv	PCA	0.725	0.0
wave_benchmark_0633.csv	LOF	0.6983	0.0
wave_benchmark_0241.csv	KNN	0.4938	0.5424
wave_benchmark_0241.csv	PCA	0.5789	0.5819
wave_benchmark_0241.csv	LOF	0.486	0.5537
wave_benchmark_0410.csv	KNN	0.7458	0.0
wave_benchmark_0410.csv	PCA	0.6168	0.0
wave_benchmark_0410.csv	LOF	0.734	0.0
wave_benchmark_1616.csv	KNN	0.554	0.1403
wave_benchmark_1616.csv	PCA	0.5541	0.1493
wave_benchmark_1616.csv	LOF	0.5485	0.1224
wave_benchmark_1031.csv	KNN	0.3623	0.0
wave_benchmark_1031.csv	PCA	0.4893	0.0
wave_benchmark_1031.csv	LOF	0.3827	0.0
wave_benchmark_0693.csv	KNN	0.7055	0.125
wave_benchmark_0693.csv	PCA	0.7212	0.0
wave_benchmark_0693.csv	LOF	0.6951	0.0625
wave_benchmark_0970.csv	KNN	0.7163	0.1613
wave_benchmark_0970.csv	PCA	0.6314	0.0
wave_benchmark_0970.csv	LOF	0.7165	0.1613
wave_benchmark_0422.csv	KNN	0.5615	0.0
wave_benchmark_0422.csv	PCA	0.8305	0.0
wave_benchmark_0422.csv	LOF	0.6965	0.0
wave_benchmark_0662.csv	KNN	0.7591	0.0
wave_benchmark_0662.csv	PCA	0.6203	0.0
wave_benchmark_0662.csv	LOF	0.7619	0.0
wave_benchmark_1232.csv	KNN	0.6615	0.1509
wave_benchmark_1232.csv	PCA	0.6645	0.0943
wave_benchmark_1232.csv	LOF	0.6452	0.1321
wave_benchmark_1577.csv	KNN	0.574	0.1373
wave_benchmark_1577.csv	PCA	0.5681	0.1254
wave_benchmark_1577.csv	LOF	0.5574	0.1224
wave_benchmark_1259.csv	KNN	0.5986	0.0692
wave_benchmark_1259.csv	PCA	0.5618	0.0692
wave_benchmark_1259.csv	LOF	0.5853	0.0755
wave_benchmark_0384.csv	KNN	0.6697	0.0
wave_benchmark_0384.csv	PCA	0.9334	0.0
wave_benchmark_0384.csv	LOF	0.7128	0.5
wave_benchmark_0367.csv	KNN	0.8259	0.0
wave_benchmark_0367.csv	PCA	0.6586	0.0

wave_benchmark_0367.csv	LOF	0.798	0.25	
wave_benchmark_1028.csv	KNN	0.3959	0.0	
wave_benchmark_1028.csv	PCA	0.4623	0.0	
wave_benchmark_1028.csv	LOF	0.4156	0.0	
wave_benchmark_0762.csv	KNN	0.2965	0.0	
wave_benchmark_0762.csv	PCA	0.3393	0.0	
wave_benchmark_0762.csv	LOF	0.278	0.0	
wave_benchmark_1279.csv	KNN	0.6129	0.1006	
wave_benchmark_1279.csv	PCA	0.5814	0.0692	
wave_benchmark_1279.csv	LOF	0.6057	0.0943	
wave_benchmark_0720.csv	KNN	0.5723	0.0	
wave_benchmark_0720.csv	PCA	0.607	0.0	
wave_benchmark_0720.csv	LOF	0.582	0.0	
wave_benchmark_1010.csv	KNN	0.6411	0.129	
wave_benchmark_1010.csv	PCA	0.6107	0.0	
wave_benchmark_1010.csv	LOF	0.6219	0.0968	
wave_benchmark_1035.csv	KNN	0.4366	0.0	
wave_benchmark_1035.csv	PCA	0.4003	0.0	
wave_benchmark_1035.csv	LOF	0.428	0.0	
wave_benchmark_0980.csv	KNN	0.6536	0.0323	
wave_benchmark_0980.csv	PCA	0.6491	0.0	
wave_benchmark_0980.csv	LOF	0.6399	0.0323	
wave_benchmark_0747.csv	KNN	0.4522	0.0	
wave_benchmark_0747.csv	PCA	0.6778	0.0	
wave_benchmark_0747.csv	LOF	0.5157	0.0	
wave_benchmark_0284.csv	KNN	0.4838	0.5064	
wave_benchmark_0284.csv	PCA	0.5007	0.5449	
wave_benchmark_0284.csv	LOF	0.4724	0.5128	
wave_benchmark_0020.csv	KNN	0.5225	0.3479	
wave_benchmark_0020.csv	PCA	0.5092	0.3439	
wave_benchmark_0020.csv	LOF	0.5268	0.3469	
wave_benchmark_0340.csv	KNN	0.7304	0.0	
wave_benchmark_0340.csv	PCA	0.6489	0.0	
wave_benchmark_0340.csv	LOF	0.706	0.0	
wave_benchmark_0177.csv	KNN	0.4704	0.3658	
wave_benchmark_0177.csv	PCA	0.4438	0.36	
wave_benchmark_0177.csv	LOF	0.4809	0.3784	
wave_benchmark_0744.csv	KNN	0.5329	0.0	
wave_benchmark_0744.csv	PCA	0.4771	0.0	
wave_benchmark_0744.csv	LOF	0.555	0.0	
wave_benchmark_1316.csv	KNN	0.6451	0.1572	
wave_benchmark_1316.csv	PCA	0.6267	0.0692	
wave_benchmark_1316.csv	LOF	0.6319	0.1384	
wave_benchmark_0724.csv	KNN	0.5586	0.0	
wave_benchmark_0724.csv	PCA	0.66	0.0	
wave_benchmark_0724.csv	LOF	0.6662	0.0	
wave_benchmark_0052.csv	KNN	0.521	0.3442	
wave_benchmark_0052.csv	PCA	0.5034	0.3289	
wave_benchmark_0052.csv	LOF	0.5265	0.3483	
wave_benchmark_0668.csv	KNN	0.7595	0.125	
wave_benchmark_0668.csv	PCA	0.6512	0.0	
wave_benchmark_0668.csv	LOF	0.773	0.125	
wave_benchmark_1603.csv	KNN	0.6795	0.2	

wave_benchmark_1603.csv	PCA	0.5908	0.1433
wave_benchmark_1603.csv	LOF	0.6252	0.1254
wave_benchmark_0181.csv	KNN	0.4927	0.4821
wave_benchmark_0181.csv	PCA	0.4763	0.4732
wave_benchmark_0181.csv	LOF	0.4946	0.4754
wave_benchmark_1280.csv	KNN	0.578	0.0818
wave_benchmark_1280.csv	PCA	0.5868	0.0629
wave_benchmark_1280.csv	LOF	0.5679	0.0629
wave_benchmark_0316.csv	KNN	0.8669	0.0
wave_benchmark_0316.csv	PCA	0.7248	0.0
wave_benchmark_0316.csv	LOF	0.8644	0.0
wave_benchmark_1628.csv	KNN	0.4469	0.0962
wave_benchmark_1628.csv	PCA	0.5827	0.1474
wave_benchmark_1628.csv	LOF	0.4966	0.1218
wave_benchmark_0655.csv	KNN	0.609	0.0625
wave_benchmark_0655.csv	PCA	0.5668	0.0
wave_benchmark_0655.csv	LOF	0.5977	0.0
wave_benchmark_0969.csv	KNN	0.7183	0.0323
wave_benchmark_0969.csv	PCA	0.6206	0.0645
wave_benchmark_0969.csv	LOF	0.7287	0.0
wave_benchmark_0707.csv	KNN	0.7857	0.0625
wave_benchmark_0707.csv	PCA	0.6791	0.0
wave_benchmark_0707.csv	LOF	0.7431	0.0625
wave_benchmark_0649.csv	KNN	0.7842	0.0625
wave_benchmark_0649.csv	PCA	0.6054	0.0
wave_benchmark_0649.csv	LOF	0.7569	0.0625
wave_benchmark_0706.csv	KNN	0.7508	0.0625
wave_benchmark_0706.csv	PCA	0.5698	0.0
wave_benchmark_0706.csv	LOF	0.7336	0.0
wave_benchmark_0279.csv	KNN	0.4673	0.5455
wave_benchmark_0279.csv	PCA	0.5267	0.5739
wave_benchmark_0279.csv	LOF	0.4579	0.5114
wave_benchmark_0604.csv	KNN	0.6498	0.0
wave_benchmark_0604.csv	PCA	0.7496	0.0
wave_benchmark_0604.csv	LOF	0.6033	0.0625
wave_benchmark_1622.csv	KNN	0.4122	0.0645
wave_benchmark_1622.csv	PCA	0.594	0.1548
wave_benchmark_1622.csv	LOF	0.4529	0.0968
wave_benchmark_1011.csv	KNN	0.6606	0.0323
wave_benchmark_1011.csv	PCA	0.5999	0.0
wave_benchmark_1011.csv	LOF	0.6542	0.0323
wave_benchmark_1214.csv	KNN	0.635	0.1132
wave_benchmark_1214.csv	PCA	0.5819	0.0629
wave_benchmark_1214.csv	LOF	0.6089	0.1006
wave_benchmark_1297.csv	KNN	0.5716	0.0755
wave_benchmark_1297.csv	PCA	0.5828	0.1132
wave_benchmark_1297.csv	LOF	0.5469	0.0692
wave_benchmark_0104.csv	KNN	0.5249	0.3492
wave_benchmark_0104.csv	PCA	0.4826	0.332
wave_benchmark_0104.csv	LOF	0.528	0.331
wave_benchmark_0339.csv	KNN	0.6169	0.0
wave_benchmark_0339.csv	PCA	0.8008	0.0
wave_benchmark_0339.csv	LOF	0.6444	0.0

wave_benchmark_0035.csv	KNN	0.5673	0.3853
wave_benchmark_0035.csv	PCA	0.5638	0.4022
wave_benchmark_0035.csv	LOF	0.5266	0.3515
wave_benchmark_0614.csv	KNN	0.6704	0.0
wave_benchmark_0614.csv	PCA	0.5501	0.0
wave_benchmark_0614.csv	LOF	0.679	0.0
wave_benchmark_0141.csv	KNN	0.5247	0.3838
wave_benchmark_0141.csv	PCA	0.5195	0.3927
wave_benchmark_0141.csv	LOF	0.5594	0.4004
wave_benchmark_0344.csv	KNN	0.8513	0.0
wave_benchmark_0344.csv	PCA	0.5528	0.0
wave_benchmark_0344.csv	LOF	0.8546	0.0
wave_benchmark_0901.csv	KNN	0.7355	0.0645
wave_benchmark_0901.csv	PCA	0.6145	0.0645
wave_benchmark_0901.csv	LOF	0.7027	0.0968
wave_benchmark_0103.csv	KNN	0.54	0.345
wave_benchmark_0103.csv	PCA	0.4922	0.3326
wave_benchmark_0103.csv	LOF	0.5098	0.314
wave_benchmark_0327.csv	KNN	0.6422	0.0
wave_benchmark_0327.csv	PCA	0.7734	0.0
wave_benchmark_0327.csv	LOF	0.6204	0.0
wave_benchmark_0979.csv	KNN	0.5449	0.0
wave_benchmark_0979.csv	PCA	0.5821	0.0
wave_benchmark_0979.csv	LOF	0.5513	0.0
wave_benchmark_0307.csv	KNN	0.5516	0.0
wave_benchmark_0307.csv	PCA	0.6082	0.0
wave_benchmark_0307.csv	LOF	0.5324	0.0
wave_benchmark_0765.csv	KNN	0.3519	0.0
wave_benchmark_0765.csv	PCA	0.3044	0.0
wave_benchmark_0765.csv	LOF	0.3278	0.0
wave_benchmark_1566.csv	KNN	0.6377	0.203
wave_benchmark_1566.csv	PCA	0.5924	0.1582
wave_benchmark_1566.csv	LOF	0.6044	0.1433
wave_benchmark_0075.csv	KNN	0.509	0.3481
wave_benchmark_0075.csv	PCA	0.4945	0.3333
wave_benchmark_0075.csv	LOF	0.5164	0.354
wave_benchmark_1619.csv	KNN	0.5885	0.1731
wave_benchmark_1619.csv	PCA	0.5608	0.1433
wave_benchmark_1619.csv	LOF	0.577	0.1672
wave_benchmark_0336.csv	KNN	0.4518	0.0
wave_benchmark_0336.csv	PCA	0.627	0.0
wave_benchmark_0336.csv	LOF	0.4517	0.0
wave_benchmark_0618.csv	KNN	0.4683	0.0
wave_benchmark_0618.csv	PCA	0.5026	0.0
wave_benchmark_0618.csv	LOF	0.4536	0.0
wave_benchmark_1593.csv	KNN	0.6397	0.194
wave_benchmark_1593.csv	PCA	0.6473	0.2
wave_benchmark_1593.csv	LOF	0.626	0.1672
wave_benchmark_1637.csv	KNN	0.4288	0.0823
wave_benchmark_1637.csv	PCA	0.5282	0.1139
wave_benchmark_1637.csv	LOF	0.4419	0.0696
wave_benchmark_0987.csv	KNN	0.6702	0.0
wave_benchmark_0987.csv	PCA	0.6641	0.0

wave_benchmark_0987.csv	LOF	0.6446	0.0
wave_benchmark_1602.csv	KNN	0.685	0.2149
wave_benchmark_1602.csv	PCA	0.5934	0.1373
wave_benchmark_1602.csv	LOF	0.647	0.1313
wave_benchmark_1502.csv	KNN	0.6867	0.2299
wave_benchmark_1502.csv	PCA	0.5923	0.1224
wave_benchmark_1502.csv	LOF	0.6311	0.1284
wave_benchmark_0034.csv	KNN	0.5722	0.3984
wave_benchmark_0034.csv	PCA	0.5744	0.3974
wave_benchmark_0034.csv	LOF	0.5607	0.3864
wave_benchmark_1579.csv	KNN	0.5798	0.1284
wave_benchmark_1579.csv	PCA	0.5507	0.1045
wave_benchmark_1579.csv	LOF	0.558	0.1104
wave_benchmark_0086.csv	KNN	0.5538	0.3622
wave_benchmark_0086.csv	PCA	0.5642	0.3959
wave_benchmark_0086.csv	LOF	0.5416	0.3653
wave_benchmark_1606.csv	KNN	0.6273	0.197
wave_benchmark_1606.csv	PCA	0.5884	0.1463
wave_benchmark_1606.csv	LOF	0.5999	0.1701
wave_benchmark_1286.csv	KNN	0.7039	0.1635
wave_benchmark_1286.csv	PCA	0.6695	0.1069
wave_benchmark_1286.csv	LOF	0.6886	0.1447
wave_benchmark_1559.csv	KNN	0.5947	0.1284
wave_benchmark_1559.csv	PCA	0.567	0.1284
wave_benchmark_1559.csv	LOF	0.5722	0.1104
wave_benchmark_0696.csv	KNN	0.5495	0.0
wave_benchmark_0696.csv	PCA	0.6582	0.0
wave_benchmark_0696.csv	LOF	0.535	0.0
wave_benchmark_1601.csv	KNN	0.6592	0.2179
wave_benchmark_1601.csv	PCA	0.6199	0.1373
wave_benchmark_1601.csv	LOF	0.6185	0.1612
wave_benchmark_0117.csv	KNN	0.5015	0.3437
wave_benchmark_0117.csv	PCA	0.4844	0.3256
wave_benchmark_0117.csv	LOF	0.4887	0.3206
wave_benchmark_1516.csv	KNN	0.5942	0.1612
wave_benchmark_1516.csv	PCA	0.5716	0.1373
wave_benchmark_1516.csv	LOF	0.5801	0.1373
wave_benchmark_0938.csv	KNN	0.6527	0.0
wave_benchmark_0938.csv	PCA	0.6747	0.0
wave_benchmark_0938.csv	LOF	0.6426	0.0
wave_benchmark_0347.csv	KNN	0.5802	0.0
wave_benchmark_0347.csv	PCA	0.5131	0.0
wave_benchmark_0347.csv	LOF	0.5903	0.0
wave_benchmark_0763.csv	KNN	0.4042	0.0
wave_benchmark_0763.csv	PCA	0.6827	0.0
wave_benchmark_0763.csv	LOF	0.4433	0.0
wave_benchmark_1327.csv	KNN	0.4362	0.0
wave_benchmark_1327.csv	PCA	0.5605	0.0769
wave_benchmark_1327.csv	LOF	0.4773	0.0308
wave_benchmark_1029.csv	KNN	0.3995	0.0
wave_benchmark_1029.csv	PCA	0.5123	0.0
wave_benchmark_1029.csv	LOF	0.4101	0.0
wave_benchmark_0060.csv	KNN	0.5143	0.3425

wave_benchmark_0060.csv	PCA	0.4987	0.3212
wave_benchmark_0060.csv	LOF	0.5194	0.3384
wave_benchmark_0403.csv	KNN	0.764	0.25
wave_benchmark_0403.csv	PCA	0.6727	0.0
wave_benchmark_0403.csv	LOF	0.7961	0.25
wave_benchmark_1609.csv	KNN	0.6396	0.1731
wave_benchmark_1609.csv	PCA	0.5582	0.1224
wave_benchmark_1609.csv	LOF	0.6147	0.1403
wave_benchmark_0431.csv	KNN	0.3394	0.0
wave_benchmark_0431.csv	PCA	0.5381	0.0
wave_benchmark_0431.csv	LOF	0.3844	0.0
wave_benchmark_1319.csv	KNN	0.5557	0.044
wave_benchmark_1319.csv	PCA	0.549	0.0755
wave_benchmark_1319.csv	LOF	0.5295	0.0314
wave_benchmark_1202.csv	KNN	0.7125	0.1509
wave_benchmark_1202.csv	PCA	0.6157	0.0503
wave_benchmark_1202.csv	LOF	0.6859	0.0881
wave_benchmark_0906.csv	KNN	0.7176	0.0968
wave_benchmark_0906.csv	PCA	0.6274	0.0
wave_benchmark_0906.csv	LOF	0.7088	0.0968
wave_benchmark_0312.csv	KNN	0.593	0.0
wave_benchmark_0312.csv	PCA	0.608	0.0
wave_benchmark_0312.csv	LOF	0.6056	0.0
wave_benchmark_0937.csv	KNN	0.5659	0.0
wave_benchmark_0937.csv	PCA	0.611	0.0
wave_benchmark_0937.csv	LOF	0.5524	0.0
wave_benchmark_0695.csv	KNN	0.5364	0.0625
wave_benchmark_0695.csv	PCA	0.6369	0.0
wave_benchmark_0695.csv	LOF	0.534	0.0625
wave_benchmark_0946.csv	KNN	0.7638	0.0323
wave_benchmark_0946.csv	PCA	0.6396	0.0
wave_benchmark_0946.csv	LOF	0.7822	0.0323
wave_benchmark_0997.csv	KNN	0.5382	0.0323
wave_benchmark_0997.csv	PCA	0.543	0.0968
wave_benchmark_0997.csv	LOF	0.5018	0.0323
wave_benchmark_1271.csv	KNN	0.636	0.1006
wave_benchmark_1271.csv	PCA	0.5935	0.0566
wave_benchmark_1271.csv	LOF	0.6291	0.0818
wave_benchmark_0233.csv	KNN	0.51	0.4829
wave_benchmark_0233.csv	PCA	0.5079	0.4784
wave_benchmark_0233.csv	LOF	0.5162	0.4852
wave_benchmark_0767.csv	KNN	0.4055	0.0
wave_benchmark_0767.csv	PCA	0.506	0.0
wave_benchmark_0767.csv	LOF	0.4194	0.0
wave_benchmark_0004.csv	KNN	0.5434	0.3478
wave_benchmark_0004.csv	PCA	0.4847	0.3292
wave_benchmark_0004.csv	LOF	0.523	0.3219
wave_benchmark_1607.csv	KNN	0.645	0.2209
wave_benchmark_1607.csv	PCA	0.596	0.1522
wave_benchmark_1607.csv	LOF	0.6202	0.1552
wave_benchmark_0033.csv	KNN	0.5348	0.3617
wave_benchmark_0033.csv	PCA	0.5612	0.4232
wave_benchmark_0033.csv	LOF	0.5301	0.3588

wave_benchmark_1527.csv	KNN	0.693	0.2358
wave_benchmark_1527.csv	PCA	0.665	0.209
wave_benchmark_1527.csv	LOF	0.6582	0.1761
wave_benchmark_1277.csv	KNN	0.6388	0.1384
wave_benchmark_1277.csv	PCA	0.5793	0.0943
wave_benchmark_1277.csv	LOF	0.62	0.1258
wave_benchmark_1038.csv	KNN	0.393	0.0
wave_benchmark_1038.csv	PCA	0.528	0.0
wave_benchmark_1038.csv	LOF	0.3867	0.0
wave_benchmark_1621.csv	KNN	0.3833	0.0513
wave_benchmark_1621.csv	PCA	0.5658	0.1474
wave_benchmark_1621.csv	LOF	0.4332	0.0769
wave_benchmark_1285.csv	KNN	0.7203	0.1761
wave_benchmark_1285.csv	PCA	0.6868	0.1132
wave_benchmark_1285.csv	LOF	0.6969	0.1447
wave_benchmark_1071.csv	KNN	0.4436	0.0
wave_benchmark_1071.csv	PCA	0.5052	0.0
wave_benchmark_1071.csv	LOF	0.4715	0.0
wave_benchmark_1033.csv	KNN	0.4901	0.0
wave_benchmark_1033.csv	PCA	0.4768	0.0
wave_benchmark_1033.csv	LOF	0.4749	0.0
wave_benchmark_0434.csv	KNN	0.2446	0.0
wave_benchmark_0434.csv	PCA	0.5762	0.0
wave_benchmark_0434.csv	LOF	0.1791	0.0
wave_benchmark_1030.csv	KNN	0.4835	0.0833
wave_benchmark_1030.csv	PCA	0.5439	0.0
wave_benchmark_1030.csv	LOF	0.5373	0.0833
wave_benchmark_0989.csv	KNN	0.7047	0.1935
wave_benchmark_0989.csv	PCA	0.7165	0.0
wave_benchmark_0989.csv	LOF	0.6608	0.1935
wave_benchmark_0392.csv	KNN	0.796	0.0
wave_benchmark_0392.csv	PCA	0.8482	0.0
wave_benchmark_0392.csv	LOF	0.8723	0.0
wave_benchmark_0944.csv	KNN	0.7772	0.129
wave_benchmark_0944.csv	PCA	0.613	0.0
wave_benchmark_0944.csv	LOF	0.7672	0.129
wave_benchmark_1331.csv	KNN	0.4002	0.0152
wave_benchmark_1331.csv	PCA	0.482	0.0455
wave_benchmark_1331.csv	LOF	0.4173	0.0152
wave_benchmark_0176.csv	KNN	0.502	0.3939
wave_benchmark_0176.csv	PCA	0.4682	0.3523
wave_benchmark_0176.csv	LOF	0.5084	0.397
wave_benchmark_1296.csv	KNN	0.629	0.1132
wave_benchmark_1296.csv	PCA	0.6398	0.1069
wave_benchmark_1296.csv	LOF	0.6108	0.1069
wave_benchmark_0983.csv	KNN	0.8087	0.1613
wave_benchmark_0983.csv	PCA	0.7334	0.0
wave_benchmark_0983.csv	LOF	0.7812	0.1613
wave_benchmark_1218.csv	KNN	0.6234	0.0755
wave_benchmark_1218.csv	PCA	0.6041	0.0566
wave_benchmark_1218.csv	LOF	0.6125	0.0692
wave_benchmark_0918.csv	KNN	0.601	0.0323
wave_benchmark_0918.csv	PCA	0.5574	0.0

wave_benchmark_0918.csv	LOF	0.5919	0.0323
wave_benchmark_1312.csv	KNN	0.5896	0.1006
wave_benchmark_1312.csv	PCA	0.5501	0.0566
wave_benchmark_1312.csv	LOF	0.584	0.0881
wave_benchmark_0681.csv	KNN	0.867	0.0625
wave_benchmark_0681.csv	PCA	0.7432	0.0
wave_benchmark_0681.csv	LOF	0.8688	0.125
wave_benchmark_0423.csv	KNN	0.2698	0.0
wave_benchmark_0423.csv	PCA	0.5322	0.0
wave_benchmark_0423.csv	LOF	0.2937	0.0
wave_benchmark_1063.csv	KNN	0.3552	0.0
wave_benchmark_1063.csv	PCA	0.4359	0.0
wave_benchmark_1063.csv	LOF	0.4157	0.0
wave_benchmark_1006.csv	KNN	0.7225	0.0323
wave_benchmark_1006.csv	PCA	0.6298	0.0
wave_benchmark_1006.csv	LOF	0.7185	0.0323
wave_benchmark_0648.csv	KNN	0.7285	0.0
wave_benchmark_0648.csv	PCA	0.6369	0.0
wave_benchmark_0648.csv	LOF	0.7287	0.0625
wave_benchmark_0078.csv	KNN	0.5294	0.3586
wave_benchmark_0078.csv	PCA	0.5055	0.3427
wave_benchmark_0078.csv	LOF	0.5259	0.3566
wave_benchmark_1299.csv	KNN	0.5872	0.0692
wave_benchmark_1299.csv	PCA	0.6082	0.0943
wave_benchmark_1299.csv	LOF	0.5778	0.0629
wave_benchmark_0313.csv	KNN	0.4841	0.0
wave_benchmark_0313.csv	PCA	0.5901	0.0
wave_benchmark_0313.csv	LOF	0.4552	0.0
wave_benchmark_0148.csv	KNN	0.5114	0.3829
wave_benchmark_0148.csv	PCA	0.5131	0.3829
wave_benchmark_0148.csv	LOF	0.5492	0.411
wave_benchmark_0003.csv	KNN	0.5308	0.3597
wave_benchmark_0003.csv	PCA	0.4843	0.3468
wave_benchmark_0003.csv	LOF	0.4983	0.3231
wave_benchmark_0911.csv	KNN	0.7115	0.0645
wave_benchmark_0911.csv	PCA	0.5312	0.0
wave_benchmark_0911.csv	LOF	0.6948	0.0323
wave_benchmark_1565.csv	KNN	0.6606	0.1761
wave_benchmark_1565.csv	PCA	0.6094	0.1672
wave_benchmark_1565.csv	LOF	0.6139	0.1343
wave_benchmark_0754.csv	KNN	0.446	0.0
wave_benchmark_0754.csv	PCA	0.6045	0.0
wave_benchmark_0754.csv	LOF	0.4439	0.0
wave_benchmark_0624.csv	KNN	0.7666	0.1875
wave_benchmark_0624.csv	PCA	0.7472	0.0
wave_benchmark_0624.csv	LOF	0.7876	0.1875
wave_benchmark_0277.csv	KNN	0.5209	0.586
wave_benchmark_0277.csv	PCA	0.566	0.6129
wave_benchmark_0277.csv	LOF	0.536	0.586
wave_benchmark_0356.csv	KNN	0.327	0.0
wave_benchmark_0356.csv	PCA	0.295	0.0
wave_benchmark_0356.csv	LOF	0.3502	0.0
wave_benchmark_1066.csv	KNN	0.2766	0.0

wave_benchmark_1066.csv	PCA	0.3971	0.0
wave_benchmark_1066.csv	LOF	0.327	0.0
wave_benchmark_0958.csv	KNN	0.6017	0.0
wave_benchmark_0958.csv	PCA	0.4923	0.0
wave_benchmark_0958.csv	LOF	0.6136	0.0
wave_benchmark_1003.csv	KNN	0.7181	0.0645
wave_benchmark_1003.csv	PCA	0.6378	0.0
wave_benchmark_1003.csv	LOF	0.7007	0.0323
wave_benchmark_0416.csv	KNN	0.6321	0.0
wave_benchmark_0416.csv	PCA	0.6331	0.0
wave_benchmark_0416.csv	LOF	0.6086	0.0
wave_benchmark_0346.csv	KNN	0.5894	0.0
wave_benchmark_0346.csv	PCA	0.7227	0.0
wave_benchmark_0346.csv	LOF	0.5834	0.0
wave_benchmark_0932.csv	KNN	0.6766	0.0968
wave_benchmark_0932.csv	PCA	0.7188	0.0323
wave_benchmark_0932.csv	LOF	0.6721	0.0323
wave_benchmark_0675.csv	KNN	0.5813	0.0
wave_benchmark_0675.csv	PCA	0.5308	0.0
wave_benchmark_0675.csv	LOF	0.5853	0.0
wave_benchmark_0739.csv	KNN	0.5025	0.0
wave_benchmark_0739.csv	PCA	0.4735	0.0
wave_benchmark_0739.csv	LOF	0.4768	0.0
wave_benchmark_0218.csv	KNN	0.4923	0.4653
wave_benchmark_0218.csv	PCA	0.5031	0.463
wave_benchmark_0218.csv	LOF	0.4961	0.4676
wave_benchmark_0053.csv	KNN	0.5108	0.3249
wave_benchmark_0053.csv	PCA	0.4866	0.3155
wave_benchmark_0053.csv	LOF	0.5029	0.3197
wave_benchmark_0621.csv	KNN	0.7867	0.0625
wave_benchmark_0621.csv	PCA	0.7681	0.0
wave_benchmark_0621.csv	LOF	0.786	0.0625
wave_benchmark_0689.csv	KNN	0.7702	0.0
wave_benchmark_0689.csv	PCA	0.7569	0.0625
wave_benchmark_0689.csv	LOF	0.7399	0.0
wave_benchmark_0073.csv	KNN	0.5161	0.3522
wave_benchmark_0073.csv	PCA	0.4998	0.3383
wave_benchmark_0073.csv	LOF	0.5196	0.3413
wave_benchmark_1000.csv	KNN	0.6221	0.0
wave_benchmark_1000.csv	PCA	0.6256	0.0323
wave_benchmark_1000.csv	LOF	0.6207	0.0
wave_benchmark_0915.csv	KNN	0.7324	0.0
wave_benchmark_0915.csv	PCA	0.6646	0.0323
wave_benchmark_0915.csv	LOF	0.695	0.0
wave_benchmark_0466.csv	KNN	0.4456	0.0
wave_benchmark_0466.csv	PCA	0.5358	0.0
wave_benchmark_0466.csv	LOF	0.5023	0.0
wave_benchmark_0673.csv	KNN	0.716	0.0
wave_benchmark_0673.csv	PCA	0.5523	0.0
wave_benchmark_0673.csv	LOF	0.7209	0.0
wave_benchmark_0467.csv	KNN	0.291	0.0
wave_benchmark_0467.csv	PCA	0.4445	0.0
wave_benchmark_0467.csv	LOF	0.285	0.0

wave_benchmark_0954.csv	KNN	0.6709	0.0323	
wave_benchmark_0954.csv	PCA	0.6584	0.0	
wave_benchmark_0954.csv	LOF	0.663	0.0645	
wave_benchmark_0170.csv	KNN	0.48	0.3659	
wave_benchmark_0170.csv	PCA	0.444	0.3417	
wave_benchmark_0170.csv	LOF	0.5211	0.4032	
wave_benchmark_0077.csv	KNN	0.4857	0.3254	
wave_benchmark_0077.csv	PCA	0.4823	0.3303	
wave_benchmark_0077.csv	LOF	0.4851	0.3184	
wave_benchmark_1505.csv	KNN	0.6893	0.2299	
wave_benchmark_1505.csv	PCA	0.5807	0.1254	
wave_benchmark_1505.csv	LOF	0.6267	0.1373	
wave_benchmark_1303.csv	KNN	0.7347	0.1572	
wave_benchmark_1303.csv	PCA	0.6281	0.1132	
wave_benchmark_1303.csv	LOF	0.7062	0.1132	
wave_benchmark_0131.csv	KNN	0.4657	0.3622	
wave_benchmark_0131.csv	PCA	0.4318	0.3366	
wave_benchmark_0131.csv	LOF	0.4937	0.3813	
wave_benchmark_1256.csv	KNN	0.6281	0.0881	
wave_benchmark_1256.csv	PCA	0.6151	0.0943	
wave_benchmark_1256.csv	LOF	0.6141	0.0881	
wave_benchmark_0723.csv	KNN	0.18	0.0	
wave_benchmark_0723.csv	PCA	0.5358	0.0	
wave_benchmark_0723.csv	LOF	0.2695	0.0	
wave_benchmark_0133.csv	KNN	0.5112	0.3877	
wave_benchmark_0133.csv	PCA	0.4736	0.3828	
wave_benchmark_0133.csv	LOF	0.5368	0.4243	
wave_benchmark_0952.csv	KNN	0.6777	0.0645	
wave_benchmark_0952.csv	PCA	0.613	0.0323	
wave_benchmark_0952.csv	LOF	0.6676	0.0323	
wave_benchmark_0274.csv	KNN	0.5055	0.56	
wave_benchmark_0274.csv	PCA	0.5631	0.5714	
wave_benchmark_0274.csv	LOF	0.5088	0.5429	
wave_benchmark_1591.csv	KNN	0.6365	0.1582	
wave_benchmark_1591.csv	PCA	0.637	0.1881	
wave_benchmark_1591.csv	LOF	0.6072	0.1463	
wave_benchmark_0945.csv	KNN	0.7984	0.0323	
wave_benchmark_0945.csv	PCA	0.6058	0.0323	
wave_benchmark_0945.csv	LOF	0.8214	0.0645	
wave_benchmark_0733.csv	KNN	0.4872	0.0	
wave_benchmark_0733.csv	PCA	0.5189	0.0	
wave_benchmark_0733.csv	LOF	0.5368	0.0	
wave_benchmark_1536.csv	KNN	0.5769	0.1313	
wave_benchmark_1536.csv	PCA	0.5981	0.1672	
wave_benchmark_1536.csv	LOF	0.563	0.1164	
wave_benchmark_0365.csv	KNN	0.9716	0.5	
wave_benchmark_0365.csv	PCA	0.7205	0.0	
wave_benchmark_0365.csv	LOF	0.9826	0.75	
wave_benchmark_0976.csv	KNN	0.6044	0.0323	
wave_benchmark_0976.csv	PCA	0.6315	0.0	
wave_benchmark_0976.csv	LOF	0.5907	0.0323	
wave_benchmark_1629.csv	KNN	0.4476	0.0915	
wave_benchmark_1629.csv	PCA	0.6093	0.1438	

wave_benchmark_1629.csv	LOF	0.4707	0.085
wave_benchmark_0247.csv	KNN	0.5506	0.6218
wave_benchmark_0247.csv	PCA	0.6128	0.6684
wave_benchmark_0247.csv	LOF	0.5336	0.6062
wave_benchmark_1078.csv	KNN	0.4685	0.0
wave_benchmark_1078.csv	PCA	0.4644	0.0
wave_benchmark_1078.csv	LOF	0.4836	0.0
wave_benchmark_0134.csv	KNN	0.491	0.3785
wave_benchmark_0134.csv	PCA	0.4556	0.3536
wave_benchmark_0134.csv	LOF	0.5141	0.3954
wave_benchmark_0183.csv	KNN	0.4883	0.4608
wave_benchmark_0183.csv	PCA	0.493	0.4677
wave_benchmark_0183.csv	LOF	0.4915	0.4562
wave_benchmark_0253.csv	KNN	0.5291	0.5754
wave_benchmark_0253.csv	PCA	0.5694	0.5754
wave_benchmark_0253.csv	LOF	0.4949	0.5419
wave_benchmark_0188.csv	KNN	0.5083	0.4808
wave_benchmark_0188.csv	PCA	0.4977	0.4786
wave_benchmark_0188.csv	LOF	0.5086	0.4876
wave_benchmark_0058.csv	KNN	0.4827	0.313
wave_benchmark_0058.csv	PCA	0.4792	0.3171
wave_benchmark_0058.csv	LOF	0.4997	0.3233
wave_benchmark_0116.csv	KNN	0.5072	0.3216
wave_benchmark_0116.csv	PCA	0.4918	0.3175
wave_benchmark_0116.csv	LOF	0.5075	0.3206
wave_benchmark_1211.csv	KNN	0.6234	0.1321
wave_benchmark_1211.csv	PCA	0.5707	0.0629
wave_benchmark_1211.csv	LOF	0.6103	0.1006
wave_benchmark_0315.csv	KNN	0.6986	0.0
wave_benchmark_0315.csv	PCA	0.7693	0.0
wave_benchmark_0315.csv	LOF	0.6548	0.0
wave_benchmark_1310.csv	KNN	0.6903	0.1258
wave_benchmark_1310.csv	PCA	0.6034	0.1384
wave_benchmark_1310.csv	LOF	0.6864	0.1384
wave_benchmark_0372.csv	KNN	0.6361	0.0
wave_benchmark_0372.csv	PCA	0.464	0.0
wave_benchmark_0372.csv	LOF	0.6466	0.0
wave_benchmark_0254.csv	KNN	0.5087	0.5635
wave_benchmark_0254.csv	PCA	0.5507	0.5635
wave_benchmark_0254.csv	LOF	0.4741	0.558
wave_benchmark_1561.csv	KNN	0.6941	0.2418
wave_benchmark_1561.csv	PCA	0.6042	0.1194
wave_benchmark_1561.csv	LOF	0.6221	0.1463
wave_benchmark_0442.csv	KNN	0.2868	0.0
wave_benchmark_0442.csv	PCA	0.5331	0.0
wave_benchmark_0442.csv	LOF	0.2882	0.0
wave_benchmark_0125.csv	KNN	0.4847	0.3808
wave_benchmark_0125.csv	PCA	0.4267	0.3551
wave_benchmark_0125.csv	LOF	0.521	0.4075
wave_benchmark_0426.csv	KNN	0.2393	0.0
wave_benchmark_0426.csv	PCA	0.1662	0.0
wave_benchmark_0426.csv	LOF	0.3198	0.0
wave_benchmark_0973.csv	KNN	0.604	0.0323

wave_benchmark_0973.csv	PCA	0.5745	0.0	
wave_benchmark_0973.csv	LOF	0.5821	0.0	
wave_benchmark_0369.csv	KNN	0.6168	0.0	
wave_benchmark_0369.csv	PCA	0.7901	0.25	
wave_benchmark_0369.csv	LOF	0.6583	0.0	
wave_benchmark_1515.csv	KNN	0.5938	0.1343	
wave_benchmark_1515.csv	PCA	0.5766	0.1552	
wave_benchmark_1515.csv	LOF	0.5627	0.1194	
wave_benchmark_0214.csv	KNN	0.4779	0.4601	
wave_benchmark_0214.csv	PCA	0.4886	0.4487	
wave_benchmark_0214.csv	LOF	0.4864	0.4556	
wave_benchmark_1530.csv	KNN	0.6603	0.2507	
wave_benchmark_1530.csv	PCA	0.663	0.191	
wave_benchmark_1530.csv	LOF	0.6454	0.2299	
wave_benchmark_1203.csv	KNN	0.7097	0.1761	
wave_benchmark_1203.csv	PCA	0.6382	0.0943	
wave_benchmark_1203.csv	LOF	0.6924	0.1258	
wave_benchmark_0171.csv	KNN	0.4587	0.34	
wave_benchmark_0171.csv	PCA	0.4325	0.323	
wave_benchmark_0171.csv	LOF	0.4768	0.3561	
wave_benchmark_1532.csv	KNN	0.659	0.2209	
wave_benchmark_1532.csv	PCA	0.6523	0.197	
wave_benchmark_1532.csv	LOF	0.6221	0.1731	
wave_benchmark_0951.csv	KNN	0.6127	0.0968	
wave_benchmark_0951.csv	PCA	0.5534	0.0323	
wave_benchmark_0951.csv	LOF	0.6265	0.0645	
wave_benchmark_1318.csv	KNN	0.6097	0.0755	
wave_benchmark_1318.csv	PCA	0.5938	0.0818	
wave_benchmark_1318.csv	LOF	0.5909	0.0755	
wave_benchmark_0072.csv	KNN	0.5216	0.3437	
wave_benchmark_0072.csv	PCA	0.4956	0.3447	
wave_benchmark_0072.csv	LOF	0.5106	0.3317	
wave_benchmark_1509.csv	KNN	0.6282	0.1582	
wave_benchmark_1509.csv	PCA	0.5742	0.1343	
wave_benchmark_1509.csv	LOF	0.6018	0.1164	
wave_benchmark_0982.csv	KNN	0.7117	0.0968	
wave_benchmark_0982.csv	PCA	0.7376	0.0	
wave_benchmark_0982.csv	LOF	0.6986	0.0968	
wave_benchmark_0006.csv	KNN	0.5217	0.3556	
wave_benchmark_0006.csv	PCA	0.49	0.345	
wave_benchmark_0006.csv	LOF	0.5026	0.3421	
wave_benchmark_1065.csv	KNN	0.2421	0.0	
wave_benchmark_1065.csv	PCA	0.5168	0.0	
wave_benchmark_1065.csv	LOF	0.2887	0.0	
wave_benchmark_1538.csv	KNN	0.5829	0.1433	
wave_benchmark_1538.csv	PCA	0.6042	0.1433	
wave_benchmark_1538.csv	LOF	0.5636	0.1224	
wave_benchmark_0757.csv	KNN	0.4502	0.0	
wave_benchmark_0757.csv	PCA	0.5747	0.0	
wave_benchmark_0757.csv	LOF	0.4615	0.0	
wave_benchmark_1335.csv	KNN	0.3809	0.0308	
wave_benchmark_1335.csv	PCA	0.5185	0.0462	
wave_benchmark_1335.csv	LOF	0.3982	0.0308	

wave_benchmark_0326.csv	KNN	0.4409	0.0
wave_benchmark_0326.csv	PCA	0.6641	0.0
wave_benchmark_0326.csv	LOF	0.4684	0.0
wave_benchmark_1568.csv	KNN	0.6474	0.2179
wave_benchmark_1568.csv	PCA	0.5999	0.1403
wave_benchmark_1568.csv	LOF	0.6048	0.1552
wave_benchmark_1501.csv	KNN	0.6653	0.197
wave_benchmark_1501.csv	PCA	0.6029	0.1522
wave_benchmark_1501.csv	LOF	0.6125	0.1343
wave_benchmark_0182.csv	KNN	0.4798	0.4707
wave_benchmark_0182.csv	PCA	0.4963	0.4775
wave_benchmark_0182.csv	LOF	0.4779	0.4662
wave_benchmark_1525.csv	KNN	0.6801	0.2388
wave_benchmark_1525.csv	PCA	0.6828	0.1731
wave_benchmark_1525.csv	LOF	0.6541	0.1731
wave_benchmark_0376.csv	KNN	0.6719	0.0
wave_benchmark_0376.csv	PCA	0.774	0.0
wave_benchmark_0376.csv	LOF	0.7336	0.0
wave_benchmark_0227.csv	KNN	0.4729	0.4617
wave_benchmark_0227.csv	PCA	0.4688	0.455
wave_benchmark_0227.csv	LOF	0.4702	0.455
wave_benchmark_0042.csv	KNN	0.5259	0.3636
wave_benchmark_0042.csv	PCA	0.4737	0.3414
wave_benchmark_0042.csv	LOF	0.5237	0.3549
wave_benchmark_0687.csv	KNN	0.7607	0.0625
wave_benchmark_0687.csv	PCA	0.7651	0.0
wave_benchmark_0687.csv	LOF	0.75	0.0625
wave_benchmark_0029.csv	KNN	0.5589	0.3939
wave_benchmark_0029.csv	PCA	0.566	0.4086
wave_benchmark_0029.csv	LOF	0.5421	0.3724
wave_benchmark_1587.csv	KNN	0.6357	0.1881
wave_benchmark_1587.csv	PCA	0.6578	0.1642
wave_benchmark_1587.csv	LOF	0.6256	0.1552
wave_benchmark_0350.csv	KNN	0.7239	0.0
wave_benchmark_0350.csv	PCA	0.6392	0.0
wave_benchmark_0350.csv	LOF	0.7078	0.0
wave_benchmark_1072.csv	KNN	0.4797	0.0
wave_benchmark_1072.csv	PCA	0.5703	0.0
wave_benchmark_1072.csv	LOF	0.4928	0.0
wave_benchmark_0375.csv	KNN	0.7705	0.0
wave_benchmark_0375.csv	PCA	0.5492	0.0
wave_benchmark_0375.csv	LOF	0.7802	0.0
wave_benchmark_0314.csv	KNN	0.7399	0.0
wave_benchmark_0314.csv	PCA	0.8216	0.0
wave_benchmark_0314.csv	LOF	0.6784	0.0
wave_benchmark_0780.csv	KNN	0.5874	0.0
wave_benchmark_0780.csv	PCA	0.5184	0.0
wave_benchmark_0780.csv	LOF	0.6347	0.0
wave_benchmark_0305.csv	KNN	0.9438	0.0
wave_benchmark_0305.csv	PCA	0.6695	0.0
wave_benchmark_0305.csv	LOF	0.9423	0.0
wave_benchmark_1291.csv	KNN	0.6236	0.1572
wave_benchmark_1291.csv	PCA	0.6464	0.0755

wave_benchmark_1291.csv	LOF	0.5868	0.1258
wave_benchmark_1301.csv	KNN	0.7024	0.1384
wave_benchmark_1301.csv	PCA	0.622	0.0943
wave_benchmark_1301.csv	LOF	0.6711	0.0943
wave_benchmark_0038.csv	KNN	0.538	0.3506
wave_benchmark_0038.csv	PCA	0.5439	0.3636
wave_benchmark_0038.csv	LOF	0.5324	0.3596
wave_benchmark_1504.csv	KNN	0.6755	0.206
wave_benchmark_1504.csv	PCA	0.5934	0.1403
wave_benchmark_1504.csv	LOF	0.6087	0.1343
wave_benchmark_1263.csv	KNN	0.6931	0.1321
wave_benchmark_1263.csv	PCA	0.6442	0.1069
wave_benchmark_1263.csv	LOF	0.6556	0.0943
wave_benchmark_1267.csv	KNN	0.6837	0.1258
wave_benchmark_1267.csv	PCA	0.609	0.0755
wave_benchmark_1267.csv	LOF	0.6535	0.1069
wave_benchmark_0361.csv	KNN	0.5897	0.0
wave_benchmark_0361.csv	PCA	0.6823	0.0
wave_benchmark_0361.csv	LOF	0.5834	0.0
wave_benchmark_0479.csv	KNN	0.4427	0.0
wave_benchmark_0479.csv	PCA	0.7705	0.0
wave_benchmark_0479.csv	LOF	0.4614	0.0
wave_benchmark_0936.csv	KNN	0.6645	0.0
wave_benchmark_0936.csv	PCA	0.6604	0.0323
wave_benchmark_0936.csv	LOF	0.6466	0.0
wave_benchmark_0968.csv	KNN	0.706	0.129
wave_benchmark_0968.csv	PCA	0.6486	0.0
wave_benchmark_0968.csv	LOF	0.7006	0.129
wave_benchmark_0948.csv	KNN	0.6608	0.0968
wave_benchmark_0948.csv	PCA	0.5644	0.0
wave_benchmark_0948.csv	LOF	0.6399	0.0968
wave_benchmark_0617.csv	KNN	0.6491	0.0
wave_benchmark_0617.csv	PCA	0.583	0.0
wave_benchmark_0617.csv	LOF	0.6316	0.0
wave_benchmark_0611.csv	KNN	0.6514	0.0
wave_benchmark_0611.csv	PCA	0.5648	0.0
wave_benchmark_0611.csv	LOF	0.647	0.0
wave_benchmark_0959.csv	KNN	0.6263	0.0645
wave_benchmark_0959.csv	PCA	0.5604	0.0323
wave_benchmark_0959.csv	LOF	0.6217	0.0645
wave_benchmark_0152.csv	KNN	0.4926	0.3564
wave_benchmark_0152.csv	PCA	0.5128	0.3784
wave_benchmark_0152.csv	LOF	0.5263	0.3938
wave_benchmark_0270.csv	KNN	0.5216	0.5856
wave_benchmark_0270.csv	PCA	0.6077	0.6464
wave_benchmark_0270.csv	LOF	0.5142	0.5635
wave_benchmark_0348.csv	KNN	0.6993	0.0
wave_benchmark_0348.csv	PCA	0.6667	0.0
wave_benchmark_0348.csv	LOF	0.7227	0.0
wave_benchmark_1608.csv	KNN	0.6454	0.2149
wave_benchmark_1608.csv	PCA	0.6043	0.1552
wave_benchmark_1608.csv	LOF	0.6005	0.1552
wave_benchmark_1537.csv	KNN	0.612	0.1582

wave_benchmark_1537.csv	PCA	0.6066	0.194	
wave_benchmark_1537.csv	LOF	0.5881	0.1403	
wave_benchmark_0398.csv	KNN	0.6377	0.0	
wave_benchmark_0398.csv	PCA	0.7164	0.0	
wave_benchmark_0398.csv	LOF	0.6118	0.0	
wave_benchmark_0021.csv	KNN	0.5809	0.3974	
wave_benchmark_0021.csv	PCA	0.5711	0.4193	
wave_benchmark_0021.csv	LOF	0.5524	0.3566	
wave_benchmark_0449.csv	KNN	0.5631	0.0	
wave_benchmark_0449.csv	PCA	0.5966	0.0	
wave_benchmark_0449.csv	LOF	0.573	0.0	
wave_benchmark_1005.csv	KNN	0.7327	0.1935	
wave_benchmark_1005.csv	PCA	0.6194	0.0323	
wave_benchmark_1005.csv	LOF	0.7417	0.1935	
wave_benchmark_1024.csv	KNN	0.2572	0.0833	
wave_benchmark_1024.csv	PCA	0.6134	0.0833	
wave_benchmark_1024.csv	LOF	0.289	0.0	
wave_benchmark_0390.csv	KNN	0.6971	0.0	
wave_benchmark_0390.csv	PCA	0.7309	0.0	
wave_benchmark_0390.csv	LOF	0.687	0.0	
wave_benchmark_0451.csv	KNN	0.5585	0.0	
wave_benchmark_0451.csv	PCA	0.6109	0.0	
wave_benchmark_0451.csv	LOF	0.5627	0.0	
wave_benchmark_0290.csv	KNN	0.5101	0.5168	
wave_benchmark_0290.csv	PCA	0.507	0.5101	
wave_benchmark_0290.csv	LOF	0.5207	0.5235	
wave_benchmark_1014.csv	KNN	0.6307	0.0	
wave_benchmark_1014.csv	PCA	0.5683	0.0	
wave_benchmark_1014.csv	LOF	0.5958	0.0	
wave_benchmark_0447.csv	KNN	0.5901	0.0	
wave_benchmark_0447.csv	PCA	0.6549	0.0	
wave_benchmark_0447.csv	LOF	0.608	0.0	
wave_benchmark_0411.csv	KNN	0.6088	0.0	
wave_benchmark_0411.csv	PCA	0.6095	0.0	
wave_benchmark_0411.csv	LOF	0.5859	0.0	
wave_benchmark_0925.csv	KNN	0.7196	0.0645	
wave_benchmark_0925.csv	PCA	0.684	0.0323	
wave_benchmark_0925.csv	LOF	0.6977	0.0968	
wave_benchmark_0089.csv	KNN	0.5891	0.4218	
wave_benchmark_0089.csv	PCA	0.5707	0.4159	
wave_benchmark_0089.csv	LOF	0.5562	0.379	
wave_benchmark_0450.csv	KNN	0.1314	0.0	
wave_benchmark_0450.csv	PCA	0.3571	0.0	
wave_benchmark_0450.csv	LOF	0.1448	0.0	
wave_benchmark_1069.csv	KNN	0.2765	0.0	
wave_benchmark_1069.csv	PCA	0.309	0.0	
wave_benchmark_1069.csv	LOF	0.2943	0.0	
wave_benchmark_0013.csv	KNN	0.4943	0.3242	
wave_benchmark_0013.csv	PCA	0.4838	0.318	
wave_benchmark_0013.csv	LOF	0.4997	0.3262	
wave_benchmark_0943.csv	KNN	0.8175	0.1613	
wave_benchmark_0943.csv	PCA	0.6349	0.0	
wave_benchmark_0943.csv	LOF	0.8209	0.0968	

wave_benchmark_1605.csv	KNN	0.664	0.197
wave_benchmark_1605.csv	PCA	0.6133	0.1612
wave_benchmark_1605.csv	LOF	0.6135	0.1463
wave_benchmark_0082.csv	KNN	0.5821	0.396
wave_benchmark_0082.csv	PCA	0.5795	0.423
wave_benchmark_0082.csv	LOF	0.5462	0.347
wave_benchmark_0019.csv	KNN	0.5036	0.3385
wave_benchmark_0019.csv	PCA	0.486	0.3375
wave_benchmark_0019.csv	LOF	0.5016	0.3394
wave_benchmark_0694.csv	KNN	0.6861	0.0
wave_benchmark_0694.csv	PCA	0.7245	0.0
wave_benchmark_0694.csv	LOF	0.6754	0.0625
wave_benchmark_0444.csv	KNN	0.4282	0.0
wave_benchmark_0444.csv	PCA	0.6687	0.0
wave_benchmark_0444.csv	LOF	0.5097	0.0
wave_benchmark_0309.csv	KNN	0.8595	0.0
wave_benchmark_0309.csv	PCA	0.6985	0.0
wave_benchmark_0309.csv	LOF	0.8147	0.0
wave_benchmark_0603.csv	KNN	0.6853	0.0625
wave_benchmark_0603.csv	PCA	0.7221	0.0
wave_benchmark_0603.csv	LOF	0.6488	0.0625
wave_benchmark_1320.csv	KNN	0.5968	0.0692
wave_benchmark_1320.csv	PCA	0.5769	0.044
wave_benchmark_1320.csv	LOF	0.5956	0.0818
wave_benchmark_1034.csv	KNN	0.3229	0.0
wave_benchmark_1034.csv	PCA	0.4385	0.0
wave_benchmark_1034.csv	LOF	0.3804	0.0
wave_benchmark_0475.csv	KNN	0.4316	0.0
wave_benchmark_0475.csv	PCA	0.3191	0.0
wave_benchmark_0475.csv	LOF	0.4437	0.0
wave_benchmark_0639.csv	KNN	0.6388	0.0625
wave_benchmark_0639.csv	PCA	0.704	0.0
wave_benchmark_0639.csv	LOF	0.6121	0.0625
wave_benchmark_0658.csv	KNN	0.5738	0.0
wave_benchmark_0658.csv	PCA	0.4692	0.0
wave_benchmark_0658.csv	LOF	0.5716	0.0
wave_benchmark_1282.csv	KNN	0.7371	0.195
wave_benchmark_1282.csv	PCA	0.7201	0.1006
wave_benchmark_1282.csv	LOF	0.7166	0.1635
wave_benchmark_0162.csv	KNN	0.4903	0.3824
wave_benchmark_0162.csv	PCA	0.4406	0.3624
wave_benchmark_0162.csv	LOF	0.5352	0.4094
wave_benchmark_0051.csv	KNN	0.5088	0.3471
wave_benchmark_0051.csv	PCA	0.4952	0.3461
wave_benchmark_0051.csv	LOF	0.5085	0.3373
wave_benchmark_0725.csv	KNN	0.447	0.0
wave_benchmark_0725.csv	PCA	0.4735	0.0
wave_benchmark_0725.csv	LOF	0.4322	0.0
wave_benchmark_0167.csv	KNN	0.4754	0.3686
wave_benchmark_0167.csv	PCA	0.4302	0.3467
wave_benchmark_0167.csv	LOF	0.5111	0.3936
wave_benchmark_0259.csv	KNN	0.5423	0.5618
wave_benchmark_0259.csv	PCA	0.5922	0.6124

wave_benchmark_0259.csv	LOF	0.5577	0.5787	
wave_benchmark_0469.csv	KNN	0.2484	0.0	
wave_benchmark_0469.csv	PCA	0.3553	0.0	
wave_benchmark_0469.csv	LOF	0.3712	0.0	
wave_benchmark_0107.csv	KNN	0.5415	0.3723	
wave_benchmark_0107.csv	PCA	0.4914	0.3406	
wave_benchmark_0107.csv	LOF	0.5293	0.3485	
wave_benchmark_1506.csv	KNN	0.6622	0.2119	
wave_benchmark_1506.csv	PCA	0.5955	0.1343	
wave_benchmark_1506.csv	LOF	0.6286	0.1582	
wave_benchmark_1570.csv	KNN	0.6606	0.209	
wave_benchmark_1570.csv	PCA	0.606	0.1463	
wave_benchmark_1570.csv	LOF	0.6449	0.1731	
wave_benchmark_0044.csv	KNN	0.5278	0.3381	
wave_benchmark_0044.csv	PCA	0.4831	0.335	
wave_benchmark_0044.csv	LOF	0.5122	0.3228	
wave_benchmark_0126.csv	KNN	0.4683	0.3375	
wave_benchmark_0126.csv	PCA	0.4495	0.3458	
wave_benchmark_0126.csv	LOF	0.5109	0.3841	
wave_benchmark_0476.csv	KNN	0.238	0.0	
wave_benchmark_0476.csv	PCA	0.1522	0.0	
wave_benchmark_0476.csv	LOF	0.2611	0.0	
wave_benchmark_0619.csv	KNN	0.5373	0.0	
wave_benchmark_0619.csv	PCA	0.516	0.0	
wave_benchmark_0619.csv	LOF	0.5027	0.0	
wave_benchmark_0922.csv	KNN	0.5614	0.0323	
wave_benchmark_0922.csv	PCA	0.6978	0.0323	
wave_benchmark_0922.csv	LOF	0.577	0.0	
wave_benchmark_0930.csv	KNN	0.6217	0.0	
wave_benchmark_0930.csv	PCA	0.6914	0.0323	
wave_benchmark_0930.csv	LOF	0.6169	0.0	
wave_benchmark_0203.csv	KNN	0.5176	0.4888	
wave_benchmark_0203.csv	PCA	0.5019	0.4731	
wave_benchmark_0203.csv	LOF	0.5133	0.4776	
wave_benchmark_0609.csv	KNN	0.7974	0.125	
wave_benchmark_0609.csv	PCA	0.6243	0.0	
wave_benchmark_0609.csv	LOF	0.7677	0.125	
wave_benchmark_0113.csv	KNN	0.5106	0.3313	
wave_benchmark_0113.csv	PCA	0.4834	0.3242	
wave_benchmark_0113.csv	LOF	0.5086	0.3313	
wave_benchmark_0207.csv	KNN	0.512	0.4861	
wave_benchmark_0207.csv	PCA	0.515	0.4884	
wave_benchmark_0207.csv	LOF	0.5134	0.4769	
wave_benchmark_0161.csv	KNN	0.4708	0.3594	
wave_benchmark_0161.csv	PCA	0.4304	0.3604	
wave_benchmark_0161.csv	LOF	0.522	0.3916	
wave_benchmark_0368.csv	KNN	0.6872	0.0	
wave_benchmark_0368.csv	PCA	0.6315	0.0	
wave_benchmark_0368.csv	LOF	0.6752	0.0	
wave_benchmark_0612.csv	KNN	0.6979	0.0	
wave_benchmark_0612.csv	PCA	0.6393	0.0	
wave_benchmark_0612.csv	LOF	0.6772	0.0	
wave_benchmark_0439.csv	KNN	0.1678	0.0	

wave_benchmark_0439.csv	PCA	0.1799	0.0
wave_benchmark_0439.csv	LOF	0.1125	0.0
wave_benchmark_1217.csv	KNN	0.6451	0.0943
wave_benchmark_1217.csv	PCA	0.6078	0.1006
wave_benchmark_1217.csv	LOF	0.6216	0.0692
wave_benchmark_0269.csv	KNN	0.4844	0.5449
wave_benchmark_0269.csv	PCA	0.5692	0.5843
wave_benchmark_0269.csv	LOF	0.4858	0.5449
wave_benchmark_0772.csv	KNN	0.3358	0.0
wave_benchmark_0772.csv	PCA	0.408	0.0
wave_benchmark_0772.csv	LOF	0.3849	0.0
wave_benchmark_0378.csv	KNN	0.7655	0.0
wave_benchmark_0378.csv	PCA	0.5402	0.0
wave_benchmark_0378.csv	LOF	0.781	0.0
wave_benchmark_0409.csv	KNN	0.7126	0.0
wave_benchmark_0409.csv	PCA	0.6459	0.0
wave_benchmark_0409.csv	LOF	0.6552	0.0
wave_benchmark_0636.csv	KNN	0.6709	0.0
wave_benchmark_0636.csv	PCA	0.6766	0.0625
wave_benchmark_0636.csv	LOF	0.6859	0.0
wave_benchmark_1306.csv	KNN	0.7092	0.1824
wave_benchmark_1306.csv	PCA	0.6256	0.1069
wave_benchmark_1306.csv	LOF	0.6901	0.1509
wave_benchmark_0700.csv	KNN	0.6678	0.0625
wave_benchmark_0700.csv	PCA	0.6986	0.0
wave_benchmark_0700.csv	LOF	0.6483	0.0
wave_benchmark_0453.csv	KNN	0.8652	0.0
wave_benchmark_0453.csv	PCA	0.9073	0.0
wave_benchmark_0453.csv	LOF	0.8656	0.0
wave_benchmark_1226.csv	KNN	0.7065	0.1698
wave_benchmark_1226.csv	PCA	0.6867	0.1069
wave_benchmark_1226.csv	LOF	0.6967	0.1447
wave_benchmark_0651.csv	KNN	0.6462	0.0
wave_benchmark_0651.csv	PCA	0.6371	0.0
wave_benchmark_0651.csv	LOF	0.6183	0.0
wave_benchmark_1528.csv	KNN	0.6355	0.2
wave_benchmark_1528.csv	PCA	0.6544	0.197
wave_benchmark_1528.csv	LOF	0.6195	0.1731
wave_benchmark_0059.csv	KNN	0.5099	0.3214
wave_benchmark_0059.csv	PCA	0.4914	0.3313
wave_benchmark_0059.csv	LOF	0.502	0.3224
wave_benchmark_0957.csv	KNN	0.5944	0.0
wave_benchmark_0957.csv	PCA	0.6024	0.0323
wave_benchmark_0957.csv	LOF	0.6012	0.0
wave_benchmark_0278.csv	KNN	0.5162	0.544
wave_benchmark_0278.csv	PCA	0.549	0.5659
wave_benchmark_0278.csv	LOF	0.5292	0.5549
wave_benchmark_0250.csv	KNN	0.5386	0.5978
wave_benchmark_0250.csv	PCA	0.6021	0.6467
wave_benchmark_0250.csv	LOF	0.5394	0.5924
wave_benchmark_0310.csv	KNN	0.9326	0.0
wave_benchmark_0310.csv	PCA	0.7811	0.0
wave_benchmark_0310.csv	LOF	0.9331	0.0

wave_benchmark_0146.csv	KNN	0.5185	0.364	
wave_benchmark_0146.csv	PCA	0.5216	0.3809	
wave_benchmark_0146.csv	LOF	0.555	0.4	
wave_benchmark_0608.csv	KNN	0.5945	0.0	
wave_benchmark_0608.csv	PCA	0.4808	0.0	
wave_benchmark_0608.csv	LOF	0.587	0.0	
wave_benchmark_0699.csv	KNN	0.6135	0.0	
wave_benchmark_0699.csv	PCA	0.661	0.0	
wave_benchmark_0699.csv	LOF	0.5898	0.0	
wave_benchmark_0756.csv	KNN	0.3907	0.0	
wave_benchmark_0756.csv	PCA	0.5673	0.0	
wave_benchmark_0756.csv	LOF	0.3883	0.0	
wave_benchmark_0028.csv	KNN	0.5526	0.3745	
wave_benchmark_0028.csv	PCA	0.5519	0.4054	
wave_benchmark_0028.csv	LOF	0.5151	0.3475	
wave_benchmark_1245.csv	KNN	0.6833	0.1572	
wave_benchmark_1245.csv	PCA	0.6412	0.1321	
wave_benchmark_1245.csv	LOF	0.6602	0.1006	
wave_benchmark_0421.csv	KNN	0.4509	0.0	
wave_benchmark_0421.csv	PCA	0.4738	0.0	
wave_benchmark_0421.csv	LOF	0.5234	0.0	
wave_benchmark_1564.csv	KNN	0.6595	0.1791	
wave_benchmark_1564.csv	PCA	0.6126	0.1373	
wave_benchmark_1564.csv	LOF	0.5982	0.1284	
wave_benchmark_0095.csv	KNN	0.5515	0.3903	
wave_benchmark_0095.csv	PCA	0.561	0.4042	
wave_benchmark_0095.csv	LOF	0.5537	0.3873	
wave_benchmark_0623.csv	KNN	0.7018	0.125	
wave_benchmark_0623.csv	PCA	0.7262	0.0	
wave_benchmark_0623.csv	LOF	0.7188	0.125	
wave_benchmark_0166.csv	KNN	0.4731	0.3722	
wave_benchmark_0166.csv	PCA	0.4412	0.3567	
wave_benchmark_0166.csv	LOF	0.5207	0.4159	
wave_benchmark_0212.csv	KNN	0.4568	0.4322	
wave_benchmark_0212.csv	PCA	0.4839	0.4556	
wave_benchmark_0212.csv	LOF	0.464	0.4416	
wave_benchmark_0680.csv	KNN	0.6607	0.0	
wave_benchmark_0680.csv	PCA	0.6663	0.0625	
wave_benchmark_0680.csv	LOF	0.6583	0.0	
wave_benchmark_1576.csv	KNN	0.5691	0.1194	
wave_benchmark_1576.csv	PCA	0.5584	0.1194	
wave_benchmark_1576.csv	LOF	0.5698	0.1343	
wave_benchmark_0656.csv	KNN	0.5508	0.0	
wave_benchmark_0656.csv	PCA	0.6107	0.0	
wave_benchmark_0656.csv	LOF	0.5434	0.0	
wave_benchmark_0354.csv	KNN	0.9084	0.0	
wave_benchmark_0354.csv	PCA	0.6732	0.0	
wave_benchmark_0354.csv	LOF	0.9263	0.25	
wave_benchmark_0478.csv	KNN	0.4666	0.0	
wave_benchmark_0478.csv	PCA	0.7064	0.0	
wave_benchmark_0478.csv	LOF	0.4629	0.0	
wave_benchmark_1556.csv	KNN	0.5693	0.1701	
wave_benchmark_1556.csv	PCA	0.5476	0.1522	

wave_benchmark_1556.csv	LOF	0.5623	0.1582	
wave_benchmark_0420.csv	KNN	0.6367	0.0	
wave_benchmark_0420.csv	PCA	0.5796	0.0	
wave_benchmark_0420.csv	LOF	0.6026	0.0	
wave_benchmark_0215.csv	KNN	0.495	0.4439	
wave_benchmark_0215.csv	PCA	0.5019	0.46	
wave_benchmark_0215.csv	LOF	0.4923	0.4439	
wave_benchmark_0721.csv	KNN	0.206	0.0	
wave_benchmark_0721.csv	PCA	0.3542	0.0	
wave_benchmark_0721.csv	LOF	0.2473	0.0	
wave_benchmark_1304.csv	KNN	0.7101	0.1761	
wave_benchmark_1304.csv	PCA	0.6076	0.044	
wave_benchmark_1304.csv	LOF	0.6793	0.1195	
wave_benchmark_0456.csv	KNN	0.5419	0.0	
wave_benchmark_0456.csv	PCA	0.6541	0.0	
wave_benchmark_0456.csv	LOF	0.5568	0.0	
wave_benchmark_0132.csv	KNN	0.4689	0.3749	
wave_benchmark_0132.csv	PCA	0.4376	0.3445	
wave_benchmark_0132.csv	LOF	0.4938	0.3916	
wave_benchmark_0202.csv	KNN	0.5003	0.464	
wave_benchmark_0202.csv	PCA	0.511	0.4826	
wave_benchmark_0202.csv	LOF	0.4966	0.4594	
wave_benchmark_0978.csv	KNN	0.6675	0.0	
wave_benchmark_0978.csv	PCA	0.5978	0.0	
wave_benchmark_0978.csv	LOF	0.6652	0.0	
wave_benchmark_1268.csv	KNN	0.709	0.1384	
wave_benchmark_1268.csv	PCA	0.6251	0.0881	
wave_benchmark_1268.csv	LOF	0.6804	0.1195	
wave_benchmark_0087.csv	KNN	0.5625	0.3934	
wave_benchmark_0087.csv	PCA	0.5638	0.4187	
wave_benchmark_0087.csv	LOF	0.5424	0.3564	
wave_benchmark_0480.csv	KNN	0.5368	0.0	
wave_benchmark_0480.csv	PCA	0.5061	0.0	
wave_benchmark_0480.csv	LOF	0.5084	0.0	
wave_benchmark_0920.csv	KNN	0.6796	0.0645	
wave_benchmark_0920.csv	PCA	0.664	0.0645	
wave_benchmark_0920.csv	LOF	0.6897	0.0968	
wave_benchmark_0037.csv	KNN	0.534	0.3623	
wave_benchmark_0037.csv	PCA	0.5569	0.3909	
wave_benchmark_0037.csv	LOF	0.5425	0.3662	
wave_benchmark_1076.csv	KNN	0.4494	0.0	
wave_benchmark_1076.csv	PCA	0.5279	0.0	
wave_benchmark_1076.csv	LOF	0.4305	0.0	
wave_benchmark_0041.csv	KNN	0.5333	0.3527	
wave_benchmark_0041.csv	PCA	0.4853	0.3313	
wave_benchmark_0041.csv	LOF	0.5174	0.315	
wave_benchmark_0283.csv	KNN	0.4836	0.54	
wave_benchmark_0283.csv	PCA	0.5099	0.5533	
wave_benchmark_0283.csv	LOF	0.4875	0.5533	
wave_benchmark_1074.csv	KNN	0.2504	0.0	
wave_benchmark_1074.csv	PCA	0.3895	0.0	
wave_benchmark_1074.csv	LOF	0.2616	0.0	
wave_benchmark_1590.csv	KNN	0.6356	0.1701	

wave_benchmark_1590.csv	PCA	0.6554	0.194
wave_benchmark_1590.csv	LOF	0.6197	0.1701
wave_benchmark_0025.csv	KNN	0.5825	0.4023
wave_benchmark_0025.csv	PCA	0.5655	0.417
wave_benchmark_0025.csv	LOF	0.5434	0.3623
wave_benchmark_0640.csv	KNN	0.6321	0.125
wave_benchmark_0640.csv	PCA	0.5941	0.0625
wave_benchmark_0640.csv	LOF	0.6264	0.125
wave_benchmark_0364.csv	KNN	0.7994	0.25
wave_benchmark_0364.csv	PCA	0.6556	0.0
wave_benchmark_0364.csv	LOF	0.7759	0.5
wave_benchmark_1328.csv	KNN	0.4664	0.0303
wave_benchmark_1328.csv	PCA	0.5731	0.0606
wave_benchmark_1328.csv	LOF	0.4914	0.0455
wave_benchmark_0705.csv	KNN	0.7815	0.125
wave_benchmark_0705.csv	PCA	0.652	0.0625
wave_benchmark_0705.csv	LOF	0.7875	0.125
wave_benchmark_0961.csv	KNN	0.7245	0.0323
wave_benchmark_0961.csv	PCA	0.6358	0.0323
wave_benchmark_0961.csv	LOF	0.7421	0.0323
wave_benchmark_0737.csv	KNN	0.3032	0.0
wave_benchmark_0737.csv	PCA	0.3994	0.0
wave_benchmark_0737.csv	LOF	0.3104	0.0
wave_benchmark_0471.csv	KNN	0.2628	0.0
wave_benchmark_0471.csv	PCA	0.433	0.0
wave_benchmark_0471.csv	LOF	0.2995	0.0
wave_benchmark_1073.csv	KNN	0.6308	0.0
wave_benchmark_1073.csv	PCA	0.6444	0.0
wave_benchmark_1073.csv	LOF	0.6278	0.0
wave_benchmark_0414.csv	KNN	0.5276	0.0
wave_benchmark_0414.csv	PCA	0.4294	0.0
wave_benchmark_0414.csv	LOF	0.469	0.0
wave_benchmark_0727.csv	KNN	0.2681	0.0
wave_benchmark_0727.csv	PCA	0.3646	0.0
wave_benchmark_0727.csv	LOF	0.2961	0.0
wave_benchmark_0005.csv	KNN	0.5071	0.3388
wave_benchmark_0005.csv	PCA	0.4685	0.3408
wave_benchmark_0005.csv	LOF	0.5109	0.3437
wave_benchmark_1544.csv	KNN	0.6357	0.194
wave_benchmark_1544.csv	PCA	0.5678	0.1254
wave_benchmark_1544.csv	LOF	0.5791	0.1463
wave_benchmark_1018.csv	KNN	0.7105	0.0
wave_benchmark_1018.csv	PCA	0.6754	0.0
wave_benchmark_1018.csv	LOF	0.6786	0.0
wave_benchmark_0674.csv	KNN	0.8007	0.0
wave_benchmark_0674.csv	PCA	0.6851	0.0
wave_benchmark_0674.csv	LOF	0.7861	0.0
wave_benchmark_0908.csv	KNN	0.709	0.1613
wave_benchmark_0908.csv	PCA	0.6549	0.0323
wave_benchmark_0908.csv	LOF	0.7001	0.0968
wave_benchmark_0065.csv	KNN	0.5409	0.3576
wave_benchmark_0065.csv	PCA	0.4873	0.3354
wave_benchmark_0065.csv	LOF	0.5265	0.3414

wave_benchmark_0136.csv	KNN	0.4733	0.3637
wave_benchmark_0136.csv	PCA	0.4696	0.3545
wave_benchmark_0136.csv	LOF	0.4948	0.3801
wave_benchmark_0308.csv	KNN	0.4788	0.0
wave_benchmark_0308.csv	PCA	0.7163	0.0
wave_benchmark_0308.csv	LOF	0.4591	0.0
wave_benchmark_1250.csv	KNN	0.6595	0.1132
wave_benchmark_1250.csv	PCA	0.627	0.0881
wave_benchmark_1250.csv	LOF	0.6647	0.1258
wave_benchmark_1209.csv	KNN	0.6431	0.1572
wave_benchmark_1209.csv	PCA	0.6176	0.1006
wave_benchmark_1209.csv	LOF	0.6264	0.1509
wave_benchmark_0357.csv	KNN	0.6017	0.0
wave_benchmark_0357.csv	PCA	0.4262	0.0
wave_benchmark_0357.csv	LOF	0.577	0.0
wave_benchmark_0291.csv	KNN	0.478	0.4832
wave_benchmark_0291.csv	PCA	0.4893	0.4966
wave_benchmark_0291.csv	LOF	0.4746	0.4832
wave_benchmark_0163.csv	KNN	0.4777	0.3694
wave_benchmark_0163.csv	PCA	0.4359	0.3535
wave_benchmark_0163.csv	LOF	0.5264	0.4022
wave_benchmark_1207.csv	KNN	0.6693	0.1321
wave_benchmark_1207.csv	PCA	0.5978	0.0943
wave_benchmark_1207.csv	LOF	0.6573	0.0881
wave_benchmark_0903.csv	KNN	0.7427	0.0323
wave_benchmark_0903.csv	PCA	0.678	0.0645
wave_benchmark_0903.csv	LOF	0.7431	0.0323
wave_benchmark_0345.csv	KNN	0.9284	0.0
wave_benchmark_0345.csv	PCA	0.7375	0.0
wave_benchmark_0345.csv	LOF	0.9303	0.0
wave_benchmark_0443.csv	KNN	0.3845	0.0
wave_benchmark_0443.csv	PCA	0.5065	0.0
wave_benchmark_0443.csv	LOF	0.3831	0.0
wave_benchmark_0024.csv	KNN	0.5948	0.4096
wave_benchmark_0024.csv	PCA	0.5866	0.4137
wave_benchmark_0024.csv	LOF	0.5561	0.3514
wave_benchmark_1215.csv	KNN	0.6367	0.0943
wave_benchmark_1215.csv	PCA	0.5711	0.0566
wave_benchmark_1215.csv	LOF	0.6171	0.0818
wave_benchmark_0338.csv	KNN	0.5176	0.0
wave_benchmark_0338.csv	PCA	0.5916	0.0
wave_benchmark_0338.csv	LOF	0.4854	0.0
wave_benchmark_0322.csv	KNN	0.859	0.25
wave_benchmark_0322.csv	PCA	0.6838	0.0
wave_benchmark_0322.csv	LOF	0.849	0.25
wave_benchmark_0374.csv	KNN	0.7032	0.0
wave_benchmark_0374.csv	PCA	0.6919	0.0
wave_benchmark_0374.csv	LOF	0.6469	0.0
wave_benchmark_0928.csv	KNN	0.5864	0.0
wave_benchmark_0928.csv	PCA	0.7108	0.0323
wave_benchmark_0928.csv	LOF	0.5429	0.0323
wave_benchmark_0158.csv	KNN	0.4995	0.3739
wave_benchmark_0158.csv	PCA	0.5136	0.3805

wave_benchmark_0158.csv	LOF	0.5219	0.3949	
wave_benchmark_0474.csv	KNN	0.2913	0.0	
wave_benchmark_0474.csv	PCA	0.0983	0.0	
wave_benchmark_0474.csv	LOF	0.2779	0.0	
wave_benchmark_0663.csv	KNN	0.7359	0.125	
wave_benchmark_0663.csv	PCA	0.6322	0.0625	
wave_benchmark_0663.csv	LOF	0.7149	0.125	
wave_benchmark_1534.csv	KNN	0.6271	0.2179	
wave_benchmark_1534.csv	PCA	0.6409	0.1881	
wave_benchmark_1534.csv	LOF	0.5994	0.1851	
wave_benchmark_0130.csv	KNN	0.4963	0.3749	
wave_benchmark_0130.csv	PCA	0.4566	0.3789	
wave_benchmark_0130.csv	LOF	0.5347	0.4131	
wave_benchmark_0764.csv	KNN	0.4106	0.0	
wave_benchmark_0764.csv	PCA	0.1922	0.0	
wave_benchmark_0764.csv	LOF	0.4658	0.0	
wave_benchmark_0115.csv	KNN	0.5283	0.3697	
wave_benchmark_0115.csv	PCA	0.5085	0.3628	
wave_benchmark_0115.csv	LOF	0.5326	0.3599	
wave_benchmark_1288.csv	KNN	0.6759	0.1258	
wave_benchmark_1288.csv	PCA	0.6628	0.1258	
wave_benchmark_1288.csv	LOF	0.6633	0.1258	
wave_benchmark_0602.csv	KNN	0.8015	0.125	
wave_benchmark_0602.csv	PCA	0.6555	0.0625	
wave_benchmark_0602.csv	LOF	0.8132	0.0	
wave_benchmark_0208.csv	KNN	0.4865	0.4692	
wave_benchmark_0208.csv	PCA	0.495	0.4601	
wave_benchmark_0208.csv	LOF	0.4859	0.4715	
wave_benchmark_0192.csv	KNN	0.4609	0.4531	
wave_benchmark_0192.csv	PCA	0.4799	0.4485	
wave_benchmark_0192.csv	LOF	0.464	0.4416	
wave_benchmark_0205.csv	KNN	0.498	0.4899	
wave_benchmark_0205.csv	PCA	0.4934	0.4765	
wave_benchmark_0205.csv	LOF	0.498	0.4765	
wave_benchmark_0981.csv	KNN	0.6446	0.0968	
wave_benchmark_0981.csv	PCA	0.6578	0.0323	
wave_benchmark_0981.csv	LOF	0.6596	0.0645	
wave_benchmark_0914.csv	KNN	0.5791	0.0968	
wave_benchmark_0914.csv	PCA	0.6146	0.0	
wave_benchmark_0914.csv	LOF	0.5491	0.0968	
wave_benchmark_0168.csv	KNN	0.4966	0.3844	
wave_benchmark_0168.csv	PCA	0.4548	0.3614	
wave_benchmark_0168.csv	LOF	0.5359	0.4184	
wave_benchmark_0917.csv	KNN	0.6914	0.0323	
wave_benchmark_0917.csv	PCA	0.583	0.0	
wave_benchmark_0917.csv	LOF	0.6542	0.0323	
wave_benchmark_0766.csv	KNN	0.5521	0.0	
wave_benchmark_0766.csv	PCA	0.4688	0.0	
wave_benchmark_0766.csv	LOF	0.5857	0.0	
wave_benchmark_0962.csv	KNN	0.8406	0.1613	
wave_benchmark_0962.csv	PCA	0.7335	0.0323	
wave_benchmark_0962.csv	LOF	0.8168	0.1935	
wave_benchmark_0189.csv	KNN	0.4908	0.4587	

wave_benchmark_0189.csv	PCA	0.497	0.4656	
wave_benchmark_0189.csv	LOF	0.4896	0.461	
wave_benchmark_0722.csv	KNN	0.6779	0.0	
wave_benchmark_0722.csv	PCA	0.7799	0.0	
wave_benchmark_0722.csv	LOF	0.7237	0.0	
wave_benchmark_0083.csv	KNN	0.5686	0.3986	
wave_benchmark_0083.csv	PCA	0.5717	0.4268	
wave_benchmark_0083.csv	LOF	0.5539	0.3686	
wave_benchmark_0266.csv	KNN	0.4631	0.5562	
wave_benchmark_0266.csv	PCA	0.5638	0.5955	
wave_benchmark_0266.csv	LOF	0.4619	0.5506	
wave_benchmark_0652.csv	KNN	0.4883	0.0625	
wave_benchmark_0652.csv	PCA	0.429	0.0	
wave_benchmark_0652.csv	LOF	0.4756	0.0	
wave_benchmark_1308.csv	KNN	0.6892	0.1509	
wave_benchmark_1308.csv	PCA	0.6066	0.0818	
wave_benchmark_1308.csv	LOF	0.6686	0.1447	
wave_benchmark_1070.csv	KNN	0.4507	0.0	
wave_benchmark_1070.csv	PCA	0.464	0.0	
wave_benchmark_1070.csv	LOF	0.4513	0.0	
wave_benchmark_0408.csv	KNN	0.8605	0.0	
wave_benchmark_0408.csv	PCA	0.5773	0.0	
wave_benchmark_0408.csv	LOF	0.86	0.0	
wave_benchmark_0062.csv	KNN	0.5346	0.3569	
wave_benchmark_0062.csv	PCA	0.4899	0.3428	
wave_benchmark_0062.csv	LOF	0.5122	0.3266	
wave_benchmark_0647.csv	KNN	0.7064	0.0	
wave_benchmark_0647.csv	PCA	0.6839	0.0	
wave_benchmark_0647.csv	LOF	0.6927	0.0	
wave_benchmark_0468.csv	KNN	0.9395	0.0	
wave_benchmark_0468.csv	PCA	0.6191	0.0	
wave_benchmark_0468.csv	LOF	0.9376	0.0	
wave_benchmark_1612.csv	KNN	0.6194	0.1582	
wave_benchmark_1612.csv	PCA	0.5488	0.1254	
wave_benchmark_1612.csv	LOF	0.5875	0.1373	
wave_benchmark_0040.csv	KNN	0.5429	0.3501	
wave_benchmark_0040.csv	PCA	0.5575	0.3819	
wave_benchmark_0040.csv	LOF	0.5301	0.345	
wave_benchmark_1545.csv	KNN	0.6796	0.209	
wave_benchmark_1545.csv	PCA	0.591	0.1164	
wave_benchmark_1545.csv	LOF	0.6168	0.1284	
wave_benchmark_0412.csv	KNN	0.6838	0.0	
wave_benchmark_0412.csv	PCA	0.6011	0.0	
wave_benchmark_0412.csv	LOF	0.701	0.0	
wave_benchmark_0704.csv	KNN	0.7308	0.0625	
wave_benchmark_0704.csv	PCA	0.6322	0.0	
wave_benchmark_0704.csv	LOF	0.7441	0.0625	
wave_benchmark_0726.csv	KNN	0.326	0.0	
wave_benchmark_0726.csv	PCA	0.5873	0.0	
wave_benchmark_0726.csv	LOF	0.3502	0.0	
wave_benchmark_0118.csv	KNN	0.5148	0.3296	
wave_benchmark_0118.csv	PCA	0.4994	0.3306	
wave_benchmark_0118.csv	LOF	0.5077	0.3234	

wave_benchmark_0056.csv	KNN	0.5016	0.3531
wave_benchmark_0056.csv	PCA	0.4853	0.3464
wave_benchmark_0056.csv	LOF	0.5022	0.3502
wave_benchmark_1287.csv	KNN	0.6476	0.1447
wave_benchmark_1287.csv	PCA	0.67	0.1069
wave_benchmark_1287.csv	LOF	0.6296	0.1195
wave_benchmark_0120.csv	KNN	0.5004	0.3234
wave_benchmark_0120.csv	PCA	0.4914	0.3367
wave_benchmark_0120.csv	LOF	0.5117	0.3439
wave_benchmark_1064.csv	KNN	0.3215	0.0
wave_benchmark_1064.csv	PCA	0.5039	0.0
wave_benchmark_1064.csv	LOF	0.3509	0.0
wave_benchmark_0610.csv	KNN	0.7431	0.125
wave_benchmark_0610.csv	PCA	0.6427	0.0
wave_benchmark_0610.csv	LOF	0.7212	0.125
wave_benchmark_0438.csv	KNN	0.896	0.0
wave_benchmark_0438.csv	PCA	0.8631	0.0
wave_benchmark_0438.csv	LOF	0.9092	0.0
wave_benchmark_1255.csv	KNN	0.655	0.1132
wave_benchmark_1255.csv	PCA	0.6133	0.1006
wave_benchmark_1255.csv	LOF	0.6421	0.0943
wave_benchmark_0069.csv	KNN	0.5231	0.3361
wave_benchmark_0069.csv	PCA	0.4838	0.3258
wave_benchmark_0069.csv	LOF	0.5032	0.3216

In [31]:
```
m, s = divmod(time.time()-timekeeping, 60)
h, m = divmod(m, 60)
print ('run time: %02d:%02d:%02d' % (h, m, s))
```

```
run time: 13:31:52
```