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Sample RBF script

Example of a bad choice of parameters. Here, we'll use a Gaussian with very small width (1/10)

```
tfunc=1;

% Data is one dimensional in this case
x=linspace(-3,3,100);
y=sin(3*x);

% Split into training set and testing set:
temp=randperm(100);
Xtrain=x(temp(1:10));
Ytrain=y(temp(1:10));

Xtest=x(temp(11:end));
Ytest=y(temp(11:end));
```

Compute the RBF

```
%Choose the centers at random from the data
numcenters=13;
temp=randperm(100);
Centers=x(temp(1:numcenters));
```

"Training" by using the Pseudoinverse

```
A=edm(Xtrain',Centers');
Phi=rbf1(A,tfunc,1/10);
alpha=pinv(Phi)*Ytrain';
```

Test the model

For plotting purposes, we'll test the model on all the data

```
A=edm(x',Centers');
Phi=rbf1(A,tfunc,1/10);

Yout=Phi*alpha;
plot(Xtrain,Ytrain,'k*',x,y,'g-',x,Yout,'b-');
axis([-3 3 -5 5])
title('Bad Parameters for the Gaussian');
```

