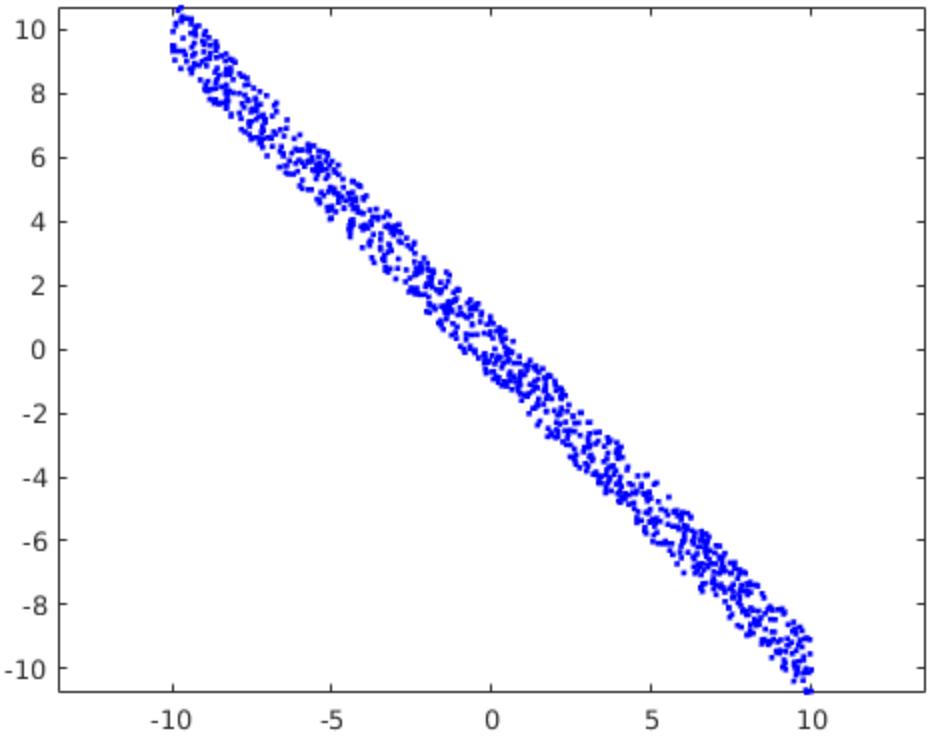
```
clear all
clc
```

6.1

```
l = 2;
N = 1000;
w = [1;1];
w0 = 0;
a = 10;
e = 1;
sed = 0;


% Generate data points
X = generate_hyper(w, w0, a, e, N, sed);

% Generate covariance matrix, eigenvectors, and variance
[pc, variances] = pcacov(cov(X'))

% orthogonal to w
h = [-1; 1];

%{
 The vector orthogonal to 'w' is [-1; 1], which points in the negative
 'X' direction, and positive 'Y' direction. The first principal
 component
 has the same direction, but at a different magnitude (~.7).
%}
```

```
pc =

   -0.7059    0.7083
    0.7083    0.7059


variances =

   67.0203
    0.1642
```



MDL

```
%{
 1) MDL, BIC, and AIC are all a form of model selection for a given
 data set.
 The difference between the three is their criteria for best model.
 MDL focuses
 on maximum compression, BIC uses the likelihood function to determine
 the criteria,
 and AIC uses relative likelihood from other models to find the best
 model.

 2) Using MDL for 6.1 may be possible by using a set of compression
 models similar
 to SCA, and allowing MDL to find the appropriate model.

 3) Attempting to form the data in such a way that is both expressible
 and compressible.
%}
```

Published with MATLAB® R2017a