

Hjorth Parameters are indicators of statistical properties used in signal processing in the time domain:

1. Complexity:

The Complexity parameter represents the change in frequency. The parameter compares the signal's similarity to a pure sine wave, where the value converges to 1 if the signal is more similar.

```
% 3. Hjorth Parameters: Complexity
```

```
% %%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

```
For
```

```
channel=1:numberOfchannels      %looping on each channel
```

```
N=1024;                          % 265 or more than to avoid aliasing
```

```
data=data(1:floor(length(data)/N)*N,1); %normalizing the data of the record to its floor  
                                         %approximated 'integer' and one column to have time series
```

```
new_data = reshape(data,N,floor(length(data)/N)); %reshaping my data
```

```
for a=1:length(Features_Numbers)    %loop with a counter from one to the length of array of selected features
```

```
    if(Features_Numbers(a) ==3 )      %if one of the elements of selected features array = 3, the if condition will be true  
                                       %as I put this feature as number two in my code
```

```
        for i=1:length(data)/N        %looping my parameter to the normalized length of data
```

```
            [~,complexity(channel,i)] = HjorthParameters(new_data(i,:)); %using the ~ to indicate logical 0 of mobility and calling  
                                                                           % the matlab built in function
```

```
        end  
    end  
end  
end
```

The matlab built in function :

```
function [mobility,complexity] = HjorthParameters(xV)

n = length(xV);
dxV = diff([0;xV]);
ddxV = diff([0;dxV]);
mx2 = mean(xV.^2);
mdx2 = mean(dxV.^2);
mddx2 = mean(ddxV.^2);

mob = mdx2 / mx2;
complexity = sqrt(mddx2 / mdx2 - mob);
mobility = sqrt(mob);
```