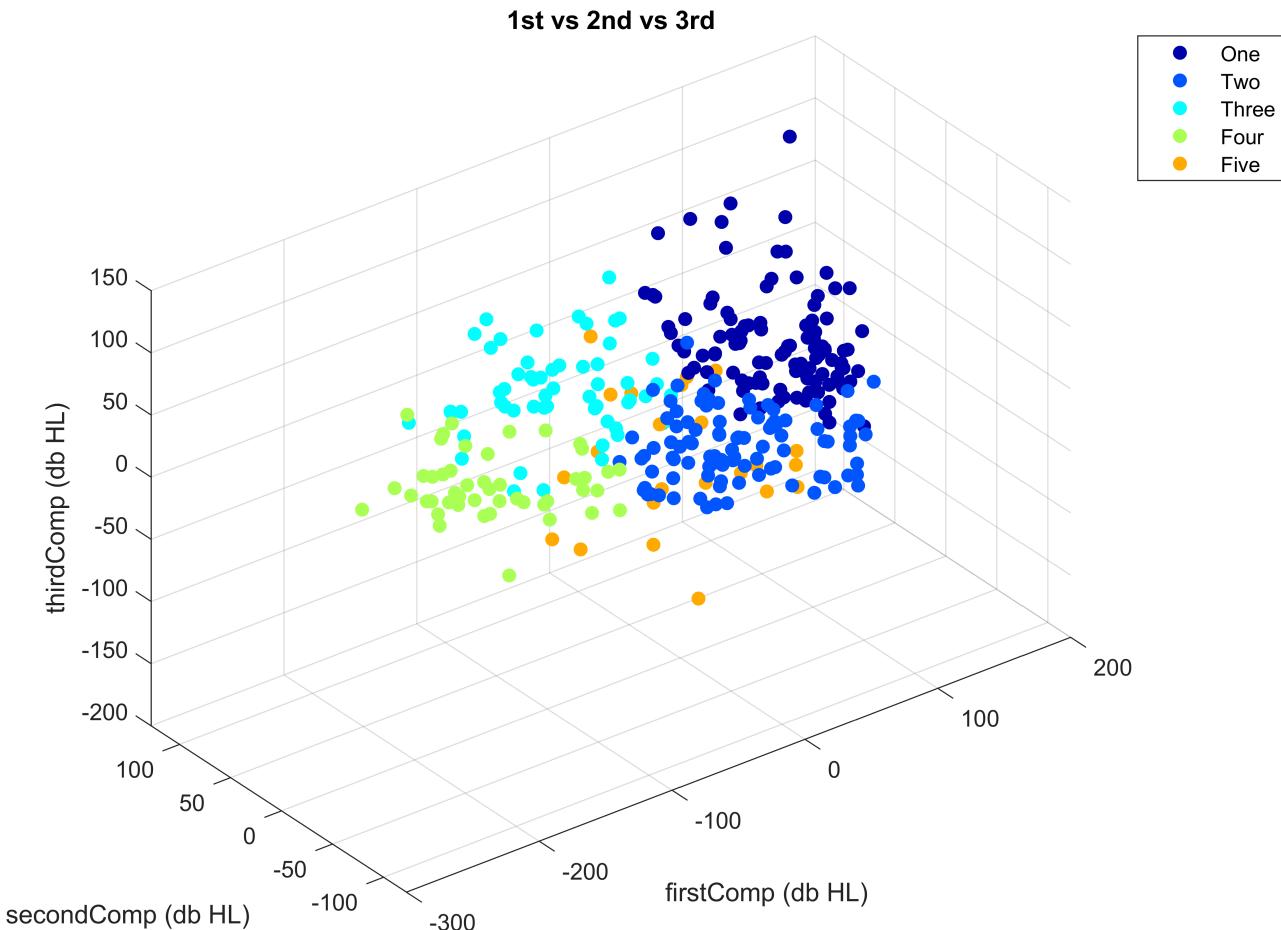


# PCA and cluster analysis

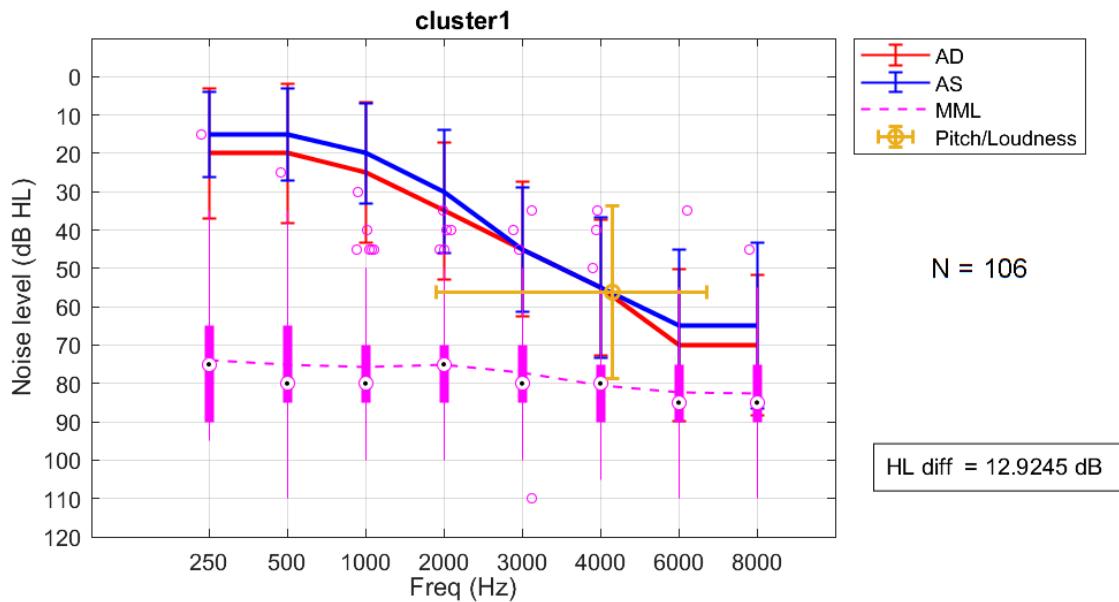
## Clusters

```
[data] = plotClusters(firstComp,secondComp,thirdComp,1,'1st vs 2nd vs 3rd',data);
```

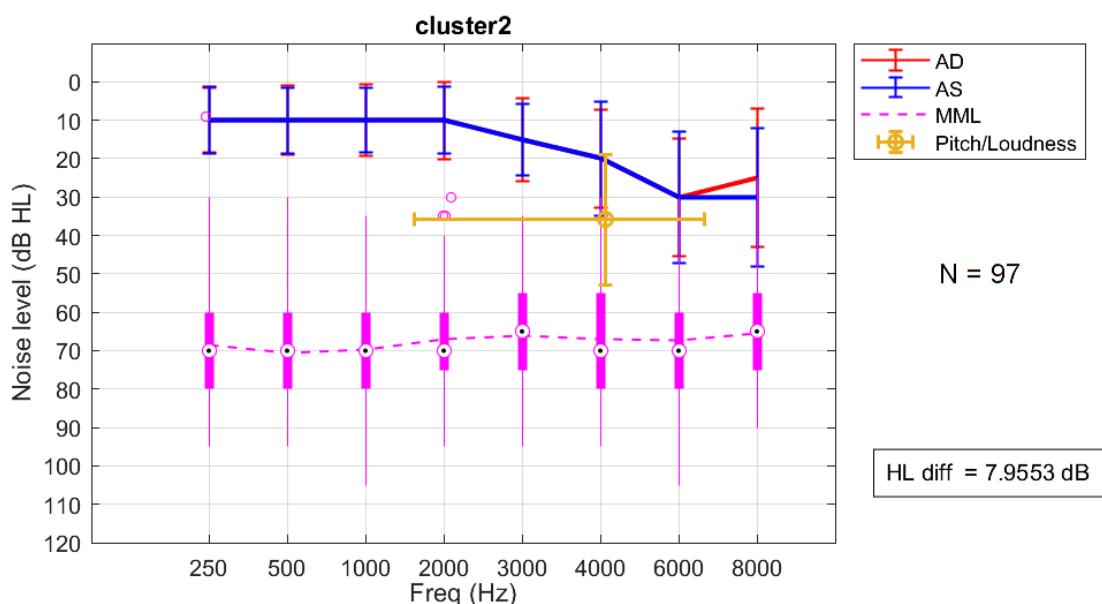


## Thresholds and MMLs for each cluster

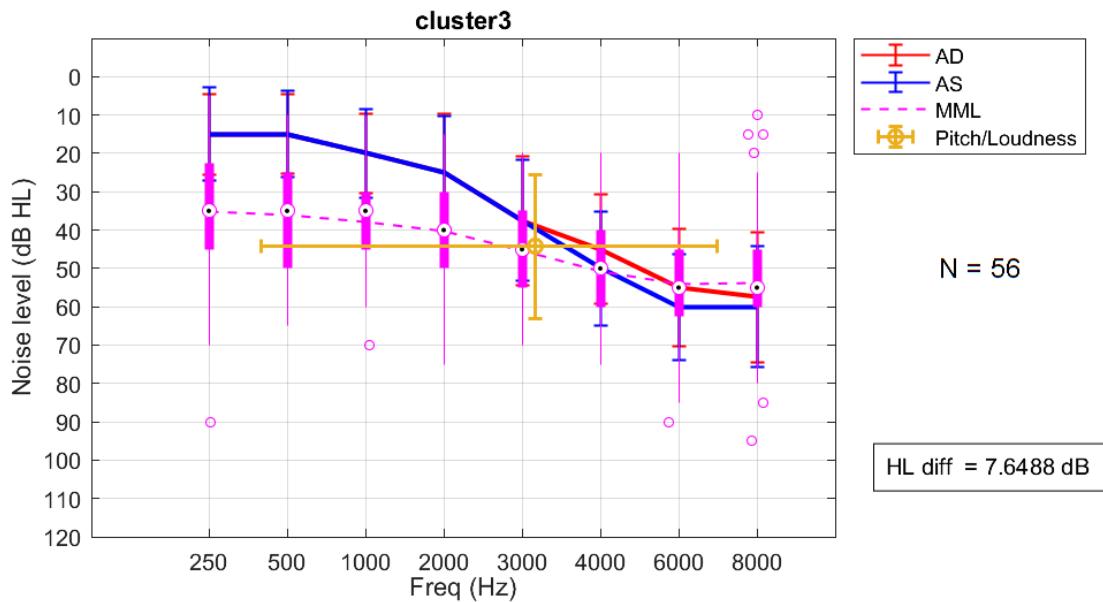
```
plotAllAUMML(Z1,data1,'cluster1')
```



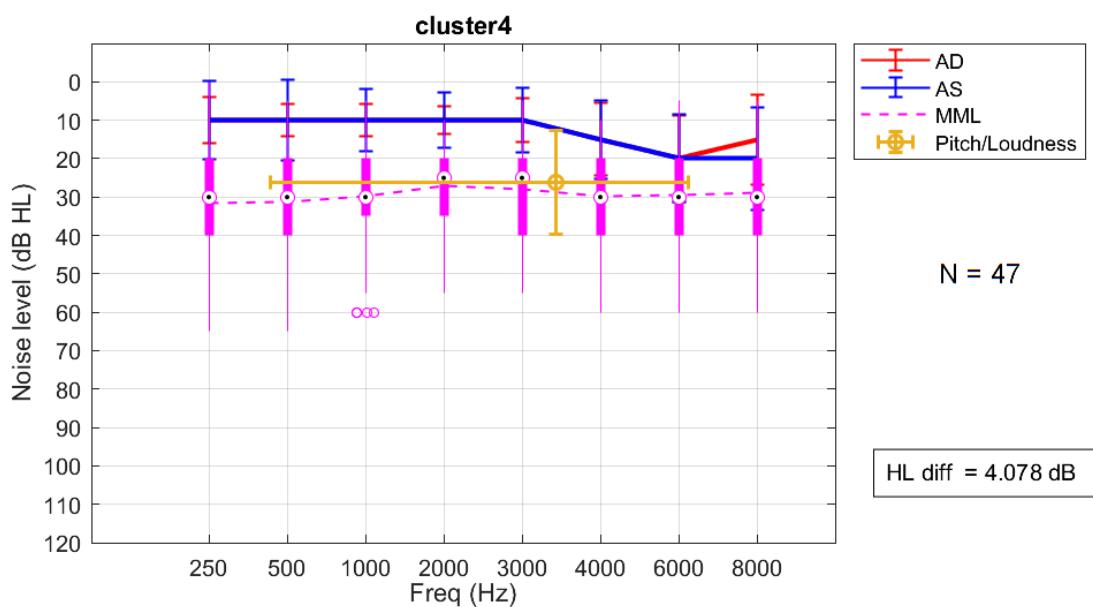
```
plotAllAUML(Z2,data2,'cluster2')
```



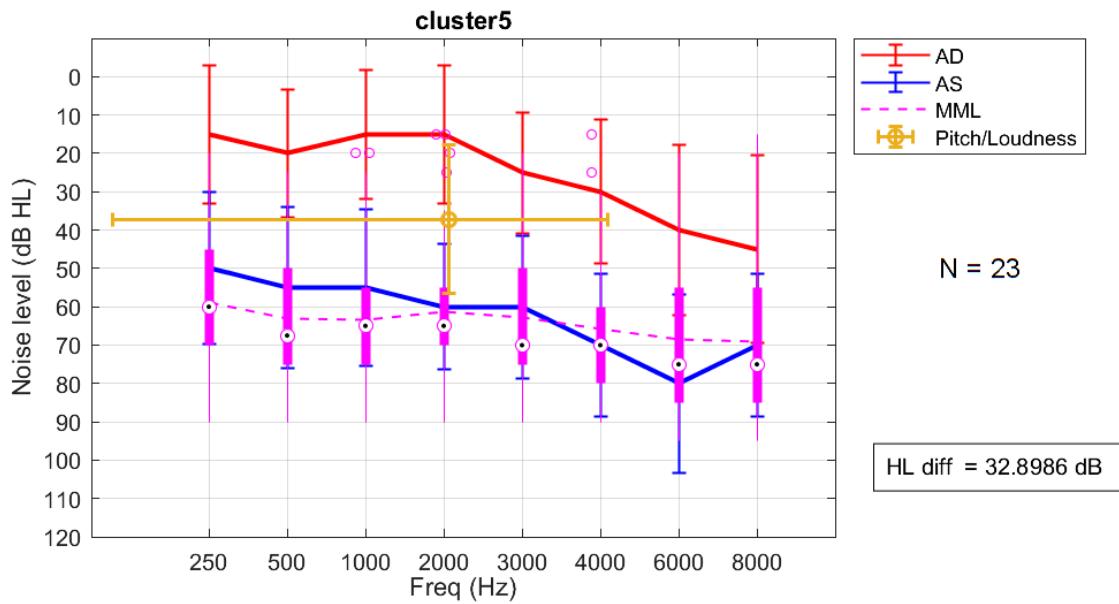
```
plotAllAUML(Z3,data3,'cluster3')
```



```
plotAllAUML(Z4,data4,'cluster4')
```



```
plotAllAUML(Z5,data5,'cluster5')
```



## Differences in pitch

```

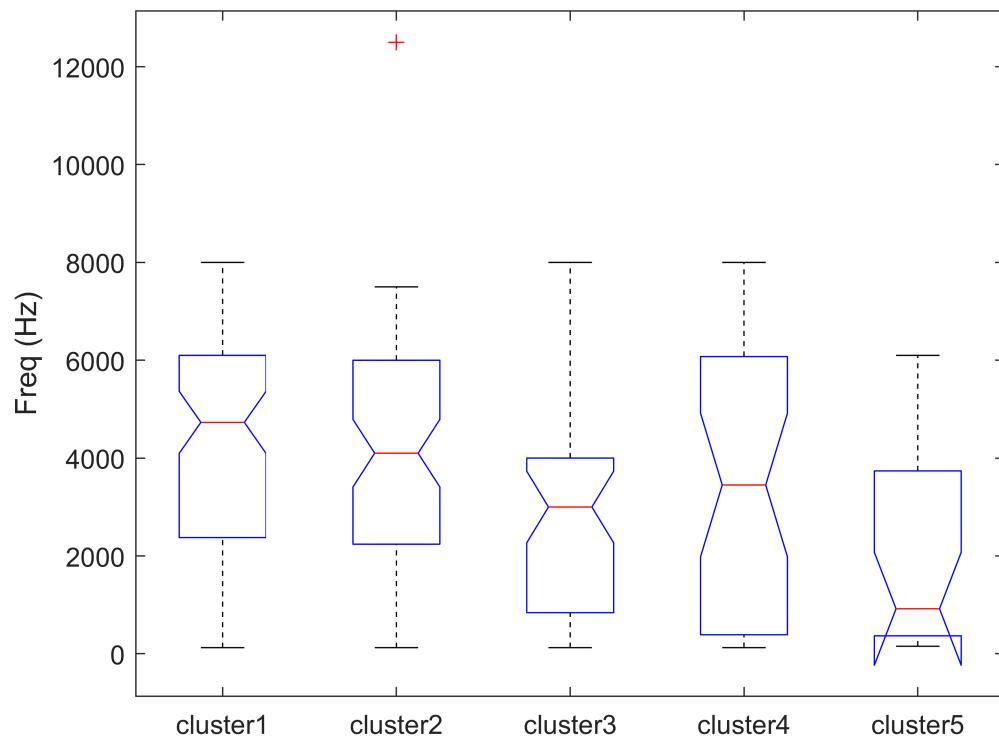
alloy=[repmat({'cluster1'},[size(data1,1) 1]);repmat({'cluster2'},[size(data2,1) 1]);...
        repmat({'cluster3'},[size(data3,1) 1]);repmat({'cluster4'},[size(data4,1) 1]);...
        repmat({'cluster5'},[size(data5,1) 1])];
info = [data1.frequentiematch8kHz' data2.frequentiematch8kHz' data3.frequentiematch8kHz' ...
        data4.frequentiematch8kHz' data5.frequentiematch8kHz'];
[p,tbl,stats] = anova1(info, alloy);

```

### ANOVA Table

Source	SS	df	MS	F	Prob>F
<hr/>					
Groups	1.38788e+08	4	3.46969e+07	5.82	0.0002
Error	1.53327e+09	257	5.96605e+06		
Total	1.67206e+09	261			

```
ylabel('Freq (Hz)')
```



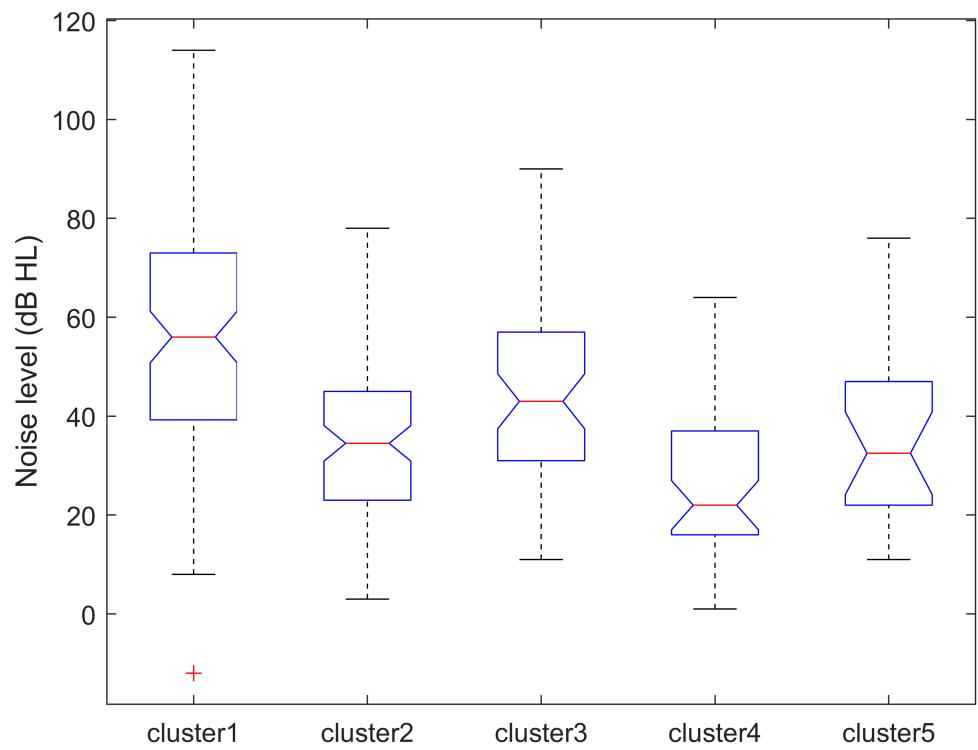
## Differences in loudness

```
info = [data1.luidheidsmatch' data2.luidheidsmatch' data3.luidheidsmatch'...
        data4.luidheidsmatch' data5.luidheidsmatch'];
[p,tbl,stats] = anova1(info, alloy);
```

### ANOVA Table

Source	SS	df	MS	F	Prob>F
<hr/>					
Groups	35910.5	4	8977.64	24.63	1.02178e-17
Error	113011	310	364.55		
Total	148921.5	314			

```
ylabel('Noise level (dB HL)')
```



## Differences in laterality

```
info = [data1.HLuni' data2.HLuni' data3.HLuni' data4.HLuni' data5.HLuni'];
[p,tbl,stats] = anova1(info, alloy);
```

### ANOVA Table

Source	SS	df	MS	F	Prob>F
<hr/>					
Groups	15171.4	4	3792.86	27.62	9.577e-20
Error	44489.6	324	137.31		
Total	59661	328			

```
ylabel('HL difference between ears (dB HL)')
```

