

Mixed Model Analysis

[DataSet3] \\myfiles.uwo.pri\vparsa\Documents\DNN_Zoom\DNN_REV_All.sav

Model Dimension^a

		Number of Levels	Covariance Structure	Number of Parameters
Fixed Effects	Intercept	1		1
	SNR	3		2
	Program	6		5
	SNR * Program	18		10
Random Effects	Audiogram	4	Variance Components	1
Residual				1
Total		32		20

a. Dependent Variable: pMOS.

Information Criteria^a

-2 Restricted Log Likelihood	206.65007894
Akaike's Information Criterion (AIC)	210.65007894
Hurvich and Tsai's Criterion (AICC)	210.67170057
Bozdogan's Criterion (CAIC)	221.29879687
Schwarz's Bayesian Criterion (BIC)	219.29879687

The information criteria are displayed in smaller-is-better form.

a. Dependent Variable: pMOS.

Coefficients of Determination

Pseudo-R Square Measures	Marginal	.609
	Conditional	.614

Intraclass Correlation Coefficients

Overall ICCs	Adjusted	.013
	Conditional	.005

Fixed Effects

Type III Tests of Fixed Effects^a

Source	Numerator df	Denominator df	F	Sig.
Intercept	1	3.001	9788.577	<.001
SNR	2	555.000	300.969	<.001
Program	5	555	59.749	<.001
SNR * Program	10	555	.656	.765

a. Dependent Variable: pMOS.

Covariance Parameters

Estimates of Covariance Parameters^a

Parameter	Estimate	Std. Error
Residual	.075	.005
Audiogram Variance	.001	.001

a. Dependent Variable: pMOS.

Estimated Marginal Means

1. Grand Mean^a

Mean	Std. Error	df	95% Confidence Interval	
			Lower Bound	Upper Bound
1.922	.019	3.001	1.860	1.984

a. Dependent Variable: pMOS.

2. SNR

Estimates^a

SNR	Mean	Std. Error	df	95% Confidence Interval	
				Lower Bound	Upper Bound
-5	1.589	.025	8.584	1.531	1.647
0	1.902	.025	8.584	1.844	1.960
5	2.276	.025	8.584	2.218	2.333

a. Dependent Variable: pMOS.

Pairwise Comparisons^a

(I) SNR	(J) SNR	Mean Difference (I-J)	Std. Error	df	Sig. ^c	95% Confidence Interval for Difference ^c	
						Lower Bound	Upper Bound
-5	0	-.313 [*]	.028	555	<.001	-.380	-.246
	5	-.687 [*]	.028	555	<.001	-.754	-.619
0	-5	.313 [*]	.028	555	<.001	.246	.380
	5	-.374 [*]	.028	555	<.001	-.441	-.306
5	-5	.687 [*]	.028	555	<.001	.619	.754
	0	.374 [*]	.028	555	<.001	.306	.441

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Dependent Variable: pMOS.

c. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests^a

Numerator df	Denominator df	F	Sig.
2	555	300.969	<.001

The F tests the effect of SNR. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Dependent Variable: pMOS.

3. Program

Estimates^a

Program	Mean	Std. Error	df	95% Confidence Interval	
				Lower Bound	Upper Bound
No Processing	1.699	.032	22.067	1.633	1.766
Beam	1.782	.032	22.067	1.715	1.849
Beam + NoiseBlock	1.824	.032	22.067	1.757	1.890
DNN	2.010	.032	22.067	1.944	2.077
NoiseBlock	1.911	.032	22.067	1.845	1.978
Beam + DNN	2.307	.032	22.067	2.240	2.373

a. Dependent Variable: pMOS.

Pairwise Comparisons^a

(I) Program	(J) Program	Mean Difference (I-J)	Std. Error	df	Sig. ^c
No Processing	Beam	-.083	.040	555	.558
	Beam + NoiseBlock	-.125 [*]	.040	555	.026
	DNN	-.311 [*]	.040	555	<.001
	NoiseBlock	-.212 [*]	.040	555	<.001
	Beam + DNN	-.607 [*]	.040	555	<.001
Beam	No Processing	.083	.040	555	.558
	Beam + NoiseBlock	-.042	.040	555	1.000
	DNN	-.228 [*]	.040	555	<.001
	NoiseBlock	-.129 [*]	.040	555	.018
	Beam + DNN	-.524 [*]	.040	555	<.001
Beam + NoiseBlock	No Processing	.125 [*]	.040	555	.026
	Beam	.042	.040	555	1.000
	DNN	-.187 [*]	.040	555	<.001
	NoiseBlock	-.087	.040	555	.416
	Beam + DNN	-.483 [*]	.040	555	<.001
DNN	No Processing	.311 [*]	.040	555	<.001
	Beam	.228 [*]	.040	555	<.001
	Beam + NoiseBlock	.187 [*]	.040	555	<.001
	NoiseBlock	.099	.040	555	.190
	Beam + DNN	-.296 [*]	.040	555	<.001
NoiseBlock	No Processing	.212 [*]	.040	555	<.001
	Beam	.129 [*]	.040	555	.018
	Beam + NoiseBlock	.087	.040	555	.416
	DNN	-.099	.040	555	.190
	Beam + DNN	-.395 [*]	.040	555	<.001
Beam + DNN	No Processing	.607 [*]	.040	555	<.001
	Beam	.524 [*]	.040	555	<.001
	Beam + NoiseBlock	.483 [*]	.040	555	<.001
	DNN	.296 [*]	.040	555	<.001
	NoiseBlock	.395 [*]	.040	555	<.001

Pairwise Comparisons^a

(I) Program	(J) Program	95% Confidence Interval for Difference ^c	
		Lower Bound	Upper Bound
No Processing	Beam	-.200	.034
	Beam + NoiseBlock	-.241	-.008
	DNN	-.428	-.194
	NoiseBlock	-.329	-.095
	Beam + DNN	-.724	-.490
Beam	No Processing	-.034	.200
	Beam + NoiseBlock	-.159	.075
	DNN	-.345	-.112
	NoiseBlock	-.246	-.012
	Beam + DNN	-.641	-.408
Beam + NoiseBlock	No Processing	.008	.241
	Beam	-.075	.159
	DNN	-.303	-.070
	NoiseBlock	-.204	.029
	Beam + DNN	-.599	-.366
DNN	No Processing	.194	.428
	Beam	.112	.345
	Beam + NoiseBlock	.070	.303
	NoiseBlock	-.018	.216
	Beam + DNN	-.413	-.179
NoiseBlock	No Processing	.095	.329
	Beam	.012	.246
	Beam + NoiseBlock	-.029	.204
	DNN	-.216	.018
	Beam + DNN	-.512	-.278
Beam + DNN	No Processing	.490	.724
	Beam	.408	.641
	Beam + NoiseBlock	.366	.599
	DNN	.179	.413
	NoiseBlock	.278	.512

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Dependent Variable: pMOS.

c. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests^a

Numerator df	Denominator df	F	Sig.
5	555	59.749	<.001

The F tests the effect of Program. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Dependent Variable: pMOS.

4. SNR * Program

Estimates^a

SNR	Program	Mean	Std. Error	df	95% Confidence Interval	
					Lower Bound	Upper Bound
-5	No Processing	1.415	.051	120.084	1.314	1.516
	Beam	1.467	.051	120.084	1.366	1.568
	Beam + NoiseBlock	1.508	.051	120.084	1.407	1.609
	DNN	1.696	.051	120.084	1.595	1.797
	NoiseBlock	1.529	.051	120.084	1.428	1.630
	Beam + DNN	1.919	.051	120.084	1.818	2.020
0	No Processing	1.663	.051	120.084	1.562	1.764
	Beam	1.746	.051	120.084	1.645	1.847
	Beam + NoiseBlock	1.787	.051	120.084	1.686	1.888
	DNN	1.995	.051	120.084	1.894	2.096
	NoiseBlock	1.893	.051	120.084	1.792	1.994
	Beam + DNN	2.329	.051	120.084	2.228	2.430
5	No Processing	2.020	.051	120.084	1.919	2.121
	Beam	2.133	.051	120.084	2.032	2.234
	Beam + NoiseBlock	2.176	.051	120.084	2.075	2.277
	DNN	2.340	.051	120.084	2.239	2.441
	NoiseBlock	2.312	.051	120.084	2.211	2.413
	Beam + DNN	2.672	.051	120.084	2.571	2.773

a. Dependent Variable: pMOS.

Pairwise Comparisons^a

SNR	(I) Program	(J) Program	Mean Difference (I-J)	Std. Error	df	Sig. ^c
-5	No Processing	Beam	-.052	.069	555	1.000
		Beam + NoiseBlock	-.093	.069	555	1.000
		DNN	-.281 [*]	.069	555	<.001
		NoiseBlock	-.114	.069	555	1.000
		Beam + DNN	-.503 [*]	.069	555	<.001
	Beam	No Processing	.052	.069	555	1.000
		Beam + NoiseBlock	-.041	.069	555	1.000
		DNN	-.229 [*]	.069	555	.014
		NoiseBlock	-.062	.069	555	1.000
		Beam + DNN	-.451 [*]	.069	555	<.001
	Beam + NoiseBlock	No Processing	.093	.069	555	1.000
		Beam	.041	.069	555	1.000
		DNN	-.188	.069	555	.097
		NoiseBlock	-.021	.069	555	1.000
		Beam + DNN	-.410 [*]	.069	555	<.001
	DNN	No Processing	.281 [*]	.069	555	<.001
		Beam	.229 [*]	.069	555	.014
		Beam + NoiseBlock	.188	.069	555	.097
		NoiseBlock	.167	.069	555	.228
		Beam + DNN	-.223 [*]	.069	555	.019
	NoiseBlock	No Processing	.114	.069	555	1.000
		Beam	.062	.069	555	1.000
		Beam + NoiseBlock	.021	.069	555	1.000
		DNN	-.167	.069	555	.228
		Beam + DNN	-.390 [*]	.069	555	<.001
	Beam + DNN	No Processing	.503 [*]	.069	555	<.001
		Beam	.451 [*]	.069	555	<.001
		Beam + NoiseBlock	.410 [*]	.069	555	<.001
		DNN	.223 [*]	.069	555	.019
		NoiseBlock	.390 [*]	.069	555	<.001
0	No Processing	Beam	-.083	.069	555	1.000
		Beam + NoiseBlock	-.124	.069	555	1.000
		DNN	-.332 [*]	.069	555	<.001
		NoiseBlock	-.230 [*]	.069	555	.013
		Beam + DNN	-.666 [*]	.069	555	<.001

Pairwise Comparisons^a

SNR	(I) Program	(J) Program	95% Confidence Interval for Difference ^c	
			Lower Bound	Upper Bound
-5	No Processing	Beam	-.254	.150
		Beam + NoiseBlock	-.296	.109
		DNN	-.483	-.079
		NoiseBlock	-.316	.089
		Beam + DNN	-.706	-.301
	Beam	No Processing	-.150	.254
		Beam + NoiseBlock	-.244	.161
		DNN	-.431	-.027
		NoiseBlock	-.264	.141
		Beam + DNN	-.654	-.249
	Beam + NoiseBlock	No Processing	-.109	.296
		Beam	-.161	.244
		DNN	-.390	.015
		NoiseBlock	-.223	.182
		Beam + DNN	-.613	-.208
	DNN	No Processing	.079	.483
		Beam	.027	.431
		Beam + NoiseBlock	-.015	.390
		NoiseBlock	-.035	.370
		Beam + DNN	-.425	-.020
	NoiseBlock	No Processing	-.089	.316
		Beam	-.141	.264
		Beam + NoiseBlock	-.182	.223
		DNN	-.370	.035
		Beam + DNN	-.592	-.187
	Beam + DNN	No Processing	.301	.706
		Beam	.249	.654
		Beam + NoiseBlock	.208	.613
		DNN	.020	.425
		NoiseBlock	.187	.592
0	No Processing	Beam	-.285	.119
		Beam + NoiseBlock	-.326	.078
		DNN	-.535	-.130
		NoiseBlock	-.433	-.028
		Beam + DNN	-.868	-.463

Pairwise Comparisons^a

SNR	(I) Program	(J) Program	Mean Difference (I-J)	Std. Error	df	Sig. ^c
	Beam	No Processing	.083	.069	555	1.000
		Beam + NoiseBlock	-.041	.069	555	1.000
		DNN	-.249 [*]	.069	555	.005
		NoiseBlock	-.147	.069	555	.485
		Beam + DNN	-.583 [*]	.069	555	<.001
	Beam + NoiseBlock	No Processing	.124	.069	555	1.000
		Beam	.041	.069	555	1.000
		DNN	-.208 [*]	.069	555	.038
		NoiseBlock	-.106	.069	555	1.000
		Beam + DNN	-.542 [*]	.069	555	<.001
	DNN	No Processing	.332 [*]	.069	555	<.001
		Beam	.249 [*]	.069	555	.005
		Beam + NoiseBlock	.208 [*]	.069	555	.038
		NoiseBlock	.102	.069	555	1.000
		Beam + DNN	-.334 [*]	.069	555	<.001
	NoiseBlock	No Processing	.230 [*]	.069	555	.013
		Beam	.147	.069	555	.485
		Beam + NoiseBlock	.106	.069	555	1.000
		DNN	-.102	.069	555	1.000
		Beam + DNN	-.435 [*]	.069	555	<.001
	Beam + DNN	No Processing	.666 [*]	.069	555	<.001
		Beam	.583 [*]	.069	555	<.001
		Beam + NoiseBlock	.542 [*]	.069	555	<.001
		DNN	.334 [*]	.069	555	<.001
		NoiseBlock	.435 [*]	.069	555	<.001
5	No Processing	Beam	-.113	.069	555	1.000
		Beam + NoiseBlock	-.156	.069	555	.346
		DNN	-.320 [*]	.069	555	<.001
		NoiseBlock	-.292 [*]	.069	555	<.001
		Beam + DNN	-.653 [*]	.069	555.000	<.001
	Beam	No Processing	.113	.069	555	1.000
		Beam + NoiseBlock	-.043	.069	555	1.000
		DNN	-.207 [*]	.069	555	.040
		NoiseBlock	-.179	.069	555	.141
		Beam + DNN	-.539 [*]	.069	555.000	<.001

Pairwise Comparisons^a

SNR	(I) Program	(J) Program	95% Confidence Interval for Difference ^c	
			Lower Bound	Upper Bound
	Beam	No Processing	-.119	.285
		Beam + NoiseBlock	-.243	.161
		DNN	-.452	-.047
		NoiseBlock	-.350	.055
		Beam + DNN	-.785	-.380
	Beam + NoiseBlock	No Processing	-.078	.326
		Beam	-.161	.243
		DNN	-.410	-.006
		NoiseBlock	-.309	.096
		Beam + DNN	-.744	-.339
	DNN	No Processing	.130	.535
		Beam	.047	.452
		Beam + NoiseBlock	.006	.410
		NoiseBlock	-.100	.304
		Beam + DNN	-.536	-.131
	NoiseBlock	No Processing	.028	.433
		Beam	-.055	.350
		Beam + NoiseBlock	-.096	.309
		DNN	-.304	.100
		Beam + DNN	-.638	-.233
	Beam + DNN	No Processing	.463	.868
		Beam	.380	.785
		Beam + NoiseBlock	.339	.744
		DNN	.131	.536
		NoiseBlock	.233	.638
5	No Processing	Beam	-.316	.089
		Beam + NoiseBlock	-.359	.046
		DNN	-.523	-.118
		NoiseBlock	-.494	-.090
		Beam + DNN	-.855	-.450
	Beam	No Processing	-.089	.316
		Beam + NoiseBlock	-.246	.159
		DNN	-.410	-.005
		NoiseBlock	-.381	.024
		Beam + DNN	-.742	-.337

Pairwise Comparisons^a

SNR	(I) Program	(J) Program	Mean Difference (I-J)	Std. Error	df	Sig. ^c
	Beam + NoiseBlock	No Processing	.156	.069	555	.346
		Beam	.043	.069	555	1.000
		DNN	-.164	.069	555	.258
		NoiseBlock	-.136	.069	555	.729
		Beam + DNN	-.496 [*]	.069	555.000	<.001
	DNN	No Processing	.320 [*]	.069	555	<.001
		Beam	.207 [*]	.069	555	.040
		Beam + NoiseBlock	.164	.069	555	.258
		NoiseBlock	.028	.069	555	1.000
		Beam + DNN	-.332 [*]	.069	555.000	<.001
	NoiseBlock	No Processing	.292 [*]	.069	555	<.001
		Beam	.179	.069	555	.141
		Beam + NoiseBlock	.136	.069	555	.729
		DNN	-.028	.069	555	1.000
		Beam + DNN	-.360 [*]	.069	555.000	<.001
	Beam + DNN	No Processing	.653 [*]	.069	555.000	<.001
		Beam	.539 [*]	.069	555.000	<.001
		Beam + NoiseBlock	.496 [*]	.069	555.000	<.001
		DNN	.332 [*]	.069	555.000	<.001
		NoiseBlock	.360 [*]	.069	555.000	<.001

Pairwise Comparisons^a

SNR	(I) Program	(J) Program	95% Confidence Interval for Difference ^c	
			Lower Bound	Upper Bound
	Beam + NoiseBlock	No Processing	-.046	.359
		Beam	-.159	.246
		DNN	-.366	.038
		NoiseBlock	-.338	.067
		Beam + DNN	-.698	-.294
	DNN	No Processing	.118	.523
		Beam	.005	.410
		Beam + NoiseBlock	-.038	.366
		NoiseBlock	-.174	.231
		Beam + DNN	-.534	-.130
	NoiseBlock	No Processing	.090	.494
		Beam	-.024	.381
		Beam + NoiseBlock	-.067	.338
		DNN	-.231	.174
		Beam + DNN	-.563	-.158
	Beam + DNN	No Processing	.450	.855
		Beam	.337	.742
		Beam + NoiseBlock	.294	.698
		DNN	.130	.534
		NoiseBlock	.158	.563

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

a. Dependent Variable: pMOS.

c. Adjustment for multiple comparisons: Bonferroni.

Univariate Tests^a

SNR	Numerator df	Denominator df	F	Sig.
-5	5	555	14.882	<.001
0	5	555	24.237	<.001
5	5	555.000	21.944	<.001

Each F tests the simple effects of Program within each level combination of the other effects shown. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

a. Dependent Variable: pMOS.