

The Mixed Procedure

Model Information	
Data Set	WORK.MYDATA
Dependent Variable	diameter
Covariance Structure	Variance Components
Estimation Method	REML
Residual Variance Method	Profile
Fixed Effects SE Method	Model-Based
Degrees of Freedom Method	Containment

Class Level Information		
Class	Levels	Values
blocks	3	1 2 3
geo	10	1 2 3 4 5 6 7 8 9 10
origin	2	Intro Nat

Dimensions	
Covariance Parameters	3
Columns in X	31
Columns in Z	33
Subjects	1
Max Obs per Subject	219

Number of Observations	
Number of Observations Read	219
Number of Observations Used	219
Number of Observations Not Used	0

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	1589.97134124	
1	3	1574.78217026	0.00000584
2	1	1574.77840845	0.00000007
3	1	1574.77836345	0.00000000

Convergence criteria met.

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Covariance Parameter Estimates	
Cov Parm	Estimate
blocks	23.9050
blocks*geo	0.7126
Residual	116.65

Fit Statistics	
-2 Res Log Likelihood	1574.8
AIC (Smaller is Better)	1580.8
AICC (Smaller is Better)	1580.9
BIC (Smaller is Better)	1578.1

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
geo	9	10	3.36	0.0363
origin	1	189	1.03	0.3124
geo*origin	7	189	2.68	0.0113

Least Squares Means							
Effect	origin	geo	Estimate	Standard Error	DF	t Value	Pr > |t|
geo		1	Non-est	.	.	.	.
geo		2	24.9369	3.7386	10	6.67	<.0001
geo		3	14.5949	3.9133	10	3.73	0.0039
geo		4	13.8437	4.0963	10	3.38	0.0070
geo		5	14.3432	3.7386	10	3.84	0.0033
geo		6	25.3655	3.8076	10	6.66	<.0001
geo		7	Non-est	.	.	.	.
geo		8	16.4300	3.6840	10	4.46	0.0012
geo		9	25.4756	3.9309	10	6.48	<.0001
geo		10	20.7997	3.8236	10	5.44	0.0003
origin	Intro		Non-est	.	.	.	.
origin	Nat		Non-est	.	.	.	.
geo*origin	Nat	1	23.0869	3.6444	189	6.33	<.0001
geo*origin	Intro	2	17.6262	4.0876	189	4.31	<.0001
geo*origin	Nat	2	32.2476	5.2569	189	6.13	<.0001
geo*origin	Intro	3	16.1922	4.1474	189	3.90	0.0001

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Least Squares Means							
Effect	origin	geo	Estimate	Standard Error	DF	t Value	Pr > t
geo*origin	Nat	3	12.9976	5.7005	189	2.28	0.0237
geo*origin	Intro	4	10.6897	4.3777	189	2.44	0.0155
geo*origin	Nat	4	16.9976	6.0319	189	2.82	0.0053
geo*origin	Intro	5	16.8726	5.2569	189	3.21	0.0016
geo*origin	Nat	5	11.8137	4.0876	189	2.89	0.0043
geo*origin	Intro	6	25.8548	5.4514	189	4.74	<.0001
geo*origin	Nat	6	24.8762	4.0876	189	6.09	<.0001
geo*origin	Intro	7	19.5468	3.7565	189	5.20	<.0001
geo*origin	Intro	8	22.1087	5.1005	189	4.33	<.0001
geo*origin	Nat	8	10.7512	4.0876	189	2.63	0.0092
geo*origin	Intro	9	19.6643	5.7005	189	3.45	0.0007
geo*origin	Nat	9	31.2869	4.2131	189	7.43	<.0001
geo*origin	Intro	10	19.4589	4.1474	189	4.69	<.0001
geo*origin	Nat	10	22.1405	5.4514	189	4.06	<.0001

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Differences of Least Squares Means									
Effect	origin	geo	_origin	_geo	Estimate	Standard Error	DF	t Value	Pr > t
geo		1		2	Non-est	.	.	.	.
geo		1		3	Non-est	.	.	.	.
geo		1		4	Non-est	.	.	.	.
geo		1		5	Non-est	.	.	.	.
geo		1		6	Non-est	.	.	.	.
geo		1		7	Non-est	.	.	.	.
geo		1		8	Non-est	.	.	.	.
geo		1		9	Non-est	.	.	.	.
geo		1		10	Non-est	.	.	.	.
geo		2		3	10.3420	3.5788	10	2.89	0.0161
geo		2		4	11.0932	3.7779	10	2.94	0.0149
geo		2		5	10.5938	3.3868	10	3.13	0.0107
geo		2		6	-0.4286	3.4628	10	-0.12	0.9040
geo		2		7	Non-est	.	.	.	.
geo		2		8	8.5069	3.3264	10	2.56	0.0285
geo		2		9	-0.5387	3.5980	10	-0.15	0.8840
geo		2		10	4.1372	3.4805	10	1.19	0.2620
geo		3		4	0.7512	3.9515	10	0.19	0.8530
geo		3		5	0.2518	3.5788	10	0.07	0.9453
geo		3		6	-10.7705	3.6509	10	-2.95	0.0145
geo		3		7	Non-est	.	.	.	.
geo		3		8	-1.8350	3.5218	10	-0.52	0.6137
geo		3		9	-10.8807	3.7794	10	-2.88	0.0164
geo		3		10	-6.2048	3.6674	10	-1.69	0.1215
geo		4		5	-0.4995	3.7779	10	-0.13	0.8974
geo		4		6	-11.5218	3.8462	10	-3.00	0.0134
geo		4		7	Non-est	.	.	.	.
geo		4		8	-2.5863	3.7239	10	-0.69	0.5032
geo		4		9	-11.6319	3.9684	10	-2.93	0.0150
geo		4		10	-6.9560	3.8626	10	-1.80	0.1019
geo		5		6	-11.0223	3.4628	10	-3.18	0.0098
geo		5		7	Non-est	.	.	.	.
geo		5		8	-2.0868	3.3264	10	-0.63	0.5445
geo		5		9	-11.1324	3.5980	10	-3.09	0.0114
geo		5		10	-6.4566	3.4805	10	-1.86	0.0933

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Differences of Least Squares Means									
Effect	origin	geo	_origin	_geo	Estimate	Standard Error	DF	t Value	Pr > t
geo		6		7	Non-est	.	.	.	.
geo		6		8	8.9355	3.4038	10	2.63	0.0254
geo		6		9	-0.1101	3.6697	10	-0.03	0.9767
geo		6		10	4.5658	3.5545	10	1.28	0.2279
geo		7		8	Non-est	.	.	.	.
geo		7		9	Non-est	.	.	.	.
geo		7		10	Non-est	.	.	.	.
geo		8		9	-9.0456	3.5413	10	-2.55	0.0287
geo		8		10	-4.3698	3.4218	10	-1.28	0.2304
geo		9		10	4.6759	3.6863	10	1.27	0.2334
origin	Intro		Nat		Non-est	.	.	.	.
geo*origin	Nat	1	Intro	2	5.4607	3.7610	189	1.45	0.1482
geo*origin	Nat	1	Nat	2	-9.1607	4.9796	189	-1.84	0.0674
geo*origin	Nat	1	Intro	3	6.8947	3.8265	189	1.80	0.0732
geo*origin	Nat	1	Nat	3	10.0893	5.4458	189	1.85	0.0655
geo*origin	Nat	1	Intro	4	12.3972	4.0732	189	3.04	0.0027
geo*origin	Nat	1	Nat	4	6.0893	5.7918	189	1.05	0.2944
geo*origin	Nat	1	Intro	5	6.2143	4.9796	189	1.25	0.2136
geo*origin	Nat	1	Nat	5	11.2732	3.7610	189	3.00	0.0031
geo*origin	Nat	1	Intro	6	-2.7679	5.1845	189	-0.53	0.5941
geo*origin	Nat	1	Nat	6	-1.7893	3.7610	189	-0.48	0.6348
geo*origin	Nat	1	Intro	7	3.5401	3.3876	189	1.05	0.2974
geo*origin	Nat	1	Intro	8	0.9782	4.8141	189	0.20	0.8392
geo*origin	Nat	1	Nat	8	12.3357	3.7610	189	3.28	0.0012
geo*origin	Nat	1	Intro	9	3.4226	5.4458	189	0.63	0.5304
geo*origin	Nat	1	Nat	9	-8.2000	3.8970	189	-2.10	0.0367
geo*origin	Nat	1	Intro	10	3.6280	3.8265	189	0.95	0.3443
geo*origin	Nat	1	Nat	10	0.9464	5.1845	189	0.18	0.8554
geo*origin	Intro	2	Nat	2	-14.6215	5.7254	189	-2.55	0.0114
geo*origin	Intro	2	Intro	3	1.4340	3.9730	189	0.36	0.7186
geo*origin	Intro	2	Nat	3	4.6285	6.1352	189	0.75	0.4515
geo*origin	Intro	2	Intro	4	6.9365	4.2135	189	1.65	0.1014
geo*origin	Intro	2	Nat	4	0.6285	6.4443	189	0.10	0.9224
geo*origin	Intro	2	Intro	5	0.7535	5.7254	189	0.13	0.8954
geo*origin	Intro	2	Nat	5	5.8125	3.9107	189	1.49	0.1389

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Differences of Least Squares Means									
Effect	origin	geo	_origin	_geo	Estimate	Standard Error	DF	t Value	Pr > t
geo*origin	Intro	2	Intro	6	-8.2286	5.9045	189	-1.39	0.1651
geo*origin	Intro	2	Nat	6	-7.2500	3.9107	189	-1.85	0.0653
geo*origin	Intro	2	Intro	7	-1.9207	3.7890	189	-0.51	0.6128
geo*origin	Intro	2	Intro	8	-4.4826	5.5821	189	-0.80	0.4230
geo*origin	Intro	2	Nat	8	6.8750	3.9107	189	1.76	0.0804
geo*origin	Intro	2	Intro	9	-2.0381	6.1352	189	-0.33	0.7401
geo*origin	Intro	2	Nat	9	-13.6607	4.0417	189	-3.38	0.0009
geo*origin	Intro	2	Intro	10	-1.8328	3.9730	189	-0.46	0.6451
geo*origin	Intro	2	Nat	10	-4.5143	5.9045	189	-0.76	0.4455
geo*origin	Nat	2	Intro	3	16.0554	5.7685	189	2.78	0.0059
geo*origin	Nat	2	Nat	3	19.2500	5.9538	189	3.23	0.0014
geo*origin	Nat	2	Intro	4	21.5579	5.9353	189	3.63	0.0004
geo*origin	Nat	2	Nat	4	15.2500	6.2718	189	2.43	0.0160
geo*origin	Nat	2	Intro	5	15.3750	5.5306	189	2.78	0.0060
geo*origin	Nat	2	Nat	5	20.4340	5.7254	189	3.57	0.0005
geo*origin	Nat	2	Intro	6	6.3929	5.7158	189	1.12	0.2648
geo*origin	Nat	2	Nat	6	7.3715	5.7254	189	1.29	0.1995
geo*origin	Nat	2	Intro	7	12.7008	5.1831	189	2.45	0.0152
geo*origin	Nat	2	Intro	8	10.1389	5.3821	189	1.88	0.0611
geo*origin	Nat	2	Nat	8	21.4965	5.7254	189	3.75	0.0002
geo*origin	Nat	2	Intro	9	12.5833	5.9538	189	2.11	0.0359
geo*origin	Nat	2	Nat	9	0.9607	5.8156	189	0.17	0.8690
geo*origin	Nat	2	Intro	10	12.7887	5.7685	189	2.22	0.0278
geo*origin	Nat	2	Nat	10	10.1071	5.7158	189	1.77	0.0786
geo*origin	Intro	3	Nat	3	3.1946	6.1754	189	0.52	0.6055
geo*origin	Intro	3	Intro	4	5.5025	4.2731	189	1.29	0.1994
geo*origin	Intro	3	Nat	4	-0.8054	6.4826	189	-0.12	0.9013
geo*origin	Intro	3	Intro	5	-0.6804	5.7685	189	-0.12	0.9062
geo*origin	Intro	3	Nat	5	4.3785	3.9730	189	1.10	0.2718
geo*origin	Intro	3	Intro	6	-9.6626	5.9463	189	-1.62	0.1058
geo*origin	Intro	3	Nat	6	-8.6840	3.9730	189	-2.19	0.0301
geo*origin	Intro	3	Intro	7	-3.3546	3.8539	189	-0.87	0.3852
geo*origin	Intro	3	Intro	8	-5.9165	5.6263	189	-1.05	0.2943
geo*origin	Intro	3	Nat	8	5.4410	3.9730	189	1.37	0.1725
geo*origin	Intro	3	Intro	9	-3.4721	6.1754	189	-0.56	0.5746

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Differences of Least Squares Means									
Effect	origin	geo	_origin	_geo	Estimate	Standard Error	DF	t Value	Pr > t
geo*origin	Intro	3	Nat	9	-15.0947	4.1019	189	-3.68	0.0003
geo*origin	Intro	3	Intro	10	-3.2667	4.0335	189	-0.81	0.4190
geo*origin	Intro	3	Nat	10	-5.9483	5.9463	189	-1.00	0.3184
geo*origin	Nat	3	Intro	4	2.3079	6.3315	189	0.36	0.7159
geo*origin	Nat	3	Nat	4	-4.0000	6.6480	189	-0.60	0.5481
geo*origin	Nat	3	Intro	5	-3.8750	5.9538	189	-0.65	0.5159
geo*origin	Nat	3	Nat	5	1.1840	6.1352	189	0.19	0.8472
geo*origin	Nat	3	Intro	6	-12.8571	6.1262	189	-2.10	0.0372
geo*origin	Nat	3	Nat	6	-11.8785	6.1352	189	-1.94	0.0543
geo*origin	Nat	3	Intro	7	-6.5492	5.6325	189	-1.16	0.2464
geo*origin	Nat	3	Intro	8	-9.1111	5.8162	189	-1.57	0.1189
geo*origin	Nat	3	Nat	8	2.2465	6.1352	189	0.37	0.7147
geo*origin	Nat	3	Intro	9	-6.6667	6.3489	189	-1.05	0.2950
geo*origin	Nat	3	Nat	9	-18.2893	6.2195	189	-2.94	0.0037
geo*origin	Nat	3	Intro	10	-6.4613	6.1754	189	-1.05	0.2968
geo*origin	Nat	3	Nat	10	-9.1429	6.1262	189	-1.49	0.1373
geo*origin	Intro	4	Nat	4	-6.3079	6.6315	189	-0.95	0.3427
geo*origin	Intro	4	Intro	5	-6.1829	5.9353	189	-1.04	0.2989
geo*origin	Intro	4	Nat	5	-1.1240	4.2135	189	-0.27	0.7900
geo*origin	Intro	4	Intro	6	-15.1651	6.1083	189	-2.48	0.0139
geo*origin	Intro	4	Nat	6	-14.1865	4.2135	189	-3.37	0.0009
geo*origin	Intro	4	Intro	7	-8.8571	4.0989	189	-2.16	0.0320
geo*origin	Intro	4	Intro	8	-11.4190	5.7972	189	-1.97	0.0503
geo*origin	Intro	4	Nat	8	-0.06145	4.2135	189	-0.01	0.9884
geo*origin	Intro	4	Intro	9	-8.9746	6.3315	189	-1.42	0.1580
geo*origin	Intro	4	Nat	9	-20.5972	4.3353	189	-4.75	<.0001
geo*origin	Intro	4	Intro	10	-8.7692	4.2731	189	-2.05	0.0415
geo*origin	Intro	4	Nat	10	-11.4508	6.1083	189	-1.87	0.0624
geo*origin	Nat	4	Intro	5	0.1250	6.2718	189	0.02	0.9841
geo*origin	Nat	4	Nat	5	5.1840	6.4443	189	0.80	0.4222
geo*origin	Nat	4	Intro	6	-8.8571	6.4358	189	-1.38	0.1704
geo*origin	Nat	4	Nat	6	-7.8785	6.4443	189	-1.22	0.2230
geo*origin	Nat	4	Intro	7	-2.5492	5.9677	189	-0.43	0.6697
geo*origin	Nat	4	Intro	8	-5.1111	6.1413	189	-0.83	0.4063
geo*origin	Nat	4	Nat	8	6.2465	6.4443	189	0.97	0.3336

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Differences of Least Squares Means									
Effect	origin	geo	_origin	_geo	Estimate	Standard Error	DF	t Value	Pr > t
geo*origin	Nat	4	Intro	9	-2.6667	6.6480	189	-0.40	0.6888
geo*origin	Nat	4	Nat	9	-14.2893	6.5246	189	-2.19	0.0297
geo*origin	Nat	4	Intro	10	-2.4613	6.4826	189	-0.38	0.7046
geo*origin	Nat	4	Nat	10	-5.1429	6.4358	189	-0.80	0.4252
geo*origin	Intro	5	Nat	5	5.0590	5.7254	189	0.88	0.3780
geo*origin	Intro	5	Intro	6	-8.9821	5.7158	189	-1.57	0.1177
geo*origin	Intro	5	Nat	6	-8.0035	5.7254	189	-1.40	0.1638
geo*origin	Intro	5	Intro	7	-2.6742	5.1831	189	-0.52	0.6065
geo*origin	Intro	5	Intro	8	-5.2361	5.3821	189	-0.97	0.3319
geo*origin	Intro	5	Nat	8	6.1215	5.7254	189	1.07	0.2864
geo*origin	Intro	5	Intro	9	-2.7917	5.9538	189	-0.47	0.6397
geo*origin	Intro	5	Nat	9	-14.4143	5.8156	189	-2.48	0.0141
geo*origin	Intro	5	Intro	10	-2.5863	5.7685	189	-0.45	0.6544
geo*origin	Intro	5	Nat	10	-5.2679	5.7158	189	-0.92	0.3579
geo*origin	Nat	5	Intro	6	-14.0411	5.9045	189	-2.38	0.0184
geo*origin	Nat	5	Nat	6	-13.0625	3.9107	189	-3.34	0.0010
geo*origin	Nat	5	Intro	7	-7.7332	3.7890	189	-2.04	0.0426
geo*origin	Nat	5	Intro	8	-10.2951	5.5821	189	-1.84	0.0667
geo*origin	Nat	5	Nat	8	1.0625	3.9107	189	0.27	0.7862
geo*origin	Nat	5	Intro	9	-7.8506	6.1352	189	-1.28	0.2023
geo*origin	Nat	5	Nat	9	-19.4732	4.0417	189	-4.82	<.0001
geo*origin	Nat	5	Intro	10	-7.6453	3.9730	189	-1.92	0.0558
geo*origin	Nat	5	Nat	10	-10.3268	5.9045	189	-1.75	0.0819
geo*origin	Intro	6	Nat	6	0.9786	5.9045	189	0.17	0.8685
geo*origin	Intro	6	Intro	7	6.3079	5.3803	189	1.17	0.2425
geo*origin	Intro	6	Intro	8	3.7460	5.5723	189	0.67	0.5022
geo*origin	Intro	6	Nat	8	15.1036	5.9045	189	2.56	0.0113
geo*origin	Intro	6	Intro	9	6.1905	6.1262	189	1.01	0.3136
geo*origin	Intro	6	Nat	9	-5.4321	5.9920	189	-0.91	0.3658
geo*origin	Intro	6	Intro	10	6.3958	5.9463	189	1.08	0.2835
geo*origin	Intro	6	Nat	10	3.7143	5.8952	189	0.63	0.5294
geo*origin	Nat	6	Intro	7	5.3293	3.7890	189	1.41	0.1612
geo*origin	Nat	6	Intro	8	2.7674	5.5821	189	0.50	0.6206
geo*origin	Nat	6	Nat	8	14.1250	3.9107	189	3.61	0.0004
geo*origin	Nat	6	Intro	9	5.2119	6.1352	189	0.85	0.3967

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Differences of Least Squares Means									
Effect	origin	geo	_origin	_geo	Estimate	Standard Error	DF	t Value	Pr > t
geo*origin	Nat	6	Nat	9	-6.4107	4.0417	189	-1.59	0.1144
geo*origin	Nat	6	Intro	10	5.4172	3.9730	189	1.36	0.1743
geo*origin	Nat	6	Nat	10	2.7357	5.9045	189	0.46	0.6437
geo*origin	Intro	7	Intro	8	-2.5619	5.0244	189	-0.51	0.6107
geo*origin	Intro	7	Nat	8	8.7957	3.7890	189	2.32	0.0213
geo*origin	Intro	7	Intro	9	-0.1175	5.6325	189	-0.02	0.9834
geo*origin	Intro	7	Nat	9	-11.7401	3.9240	189	-2.99	0.0031
geo*origin	Intro	7	Intro	10	0.08789	3.8539	189	0.02	0.9818
geo*origin	Intro	7	Nat	10	-2.5937	5.3803	189	-0.48	0.6303
geo*origin	Intro	8	Nat	8	11.3576	5.5821	189	2.03	0.0433
geo*origin	Intro	8	Intro	9	2.4444	5.8162	189	0.42	0.6748
geo*origin	Intro	8	Nat	9	-9.1781	5.6746	189	-1.62	0.1075
geo*origin	Intro	8	Intro	10	2.6498	5.6263	189	0.47	0.6382
geo*origin	Intro	8	Nat	10	-0.03175	5.5723	189	-0.01	0.9955
geo*origin	Nat	8	Intro	9	-8.9131	6.1352	189	-1.45	0.1479
geo*origin	Nat	8	Nat	9	-20.5357	4.0417	189	-5.08	<.0001
geo*origin	Nat	8	Intro	10	-8.7078	3.9730	189	-2.19	0.0296
geo*origin	Nat	8	Nat	10	-11.3893	5.9045	189	-1.93	0.0552
geo*origin	Intro	9	Nat	9	-11.6226	6.2195	189	-1.87	0.0632
geo*origin	Intro	9	Intro	10	0.2054	6.1754	189	0.03	0.9735
geo*origin	Intro	9	Nat	10	-2.4762	6.1262	189	-0.40	0.6865
geo*origin	Nat	9	Intro	10	11.8280	4.1019	189	2.88	0.0044
geo*origin	Nat	9	Nat	10	9.1464	5.9920	189	1.53	0.1286
geo*origin	Intro	10	Nat	10	-2.6815	5.9463	189	-0.45	0.6525