

The Mixed Procedure

Model Information	
Data Set	WORK.MYDATA
Dependent Variable	tree_volume
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_num	10	1 10 2 3 4 5 6 7 8 9
origin	2	Intro Nat

Dimensions	
Covariance Parameters	3
Columns in X	30
Columns in Z	33
Subjects	1
Max Obs per Subject	28

Number of Observations	
Number of Observations Read	120
Number of Observations Used	28
Number of Observations Not Used	92

Iteration History			
Iteration	Evaluations	-2 Res Log Like	Criterion
0	1	-45.15326394	
1	2	-51.60743835	0.00198798
2	1	-51.69376543	0.00034533
3	1	-51.70758309	0.00001420
4	1	-51.70811068	0.00000004
5	1	-51.70811219	0.00000000

Convergence criteria met.

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Covariance Parameter Estimates	
Cov Parm	Estimate
blocks	0.000337
blocks*geo_num	0.000204
Residual	0.000033

Fit Statistics	
-2 Res Log Likelihood	-51.7
AIC (Smaller is Better)	-45.7
AICC (Smaller is Better)	-42.3
BIC (Smaller is Better)	-48.4

Type 3 Tests of Fixed Effects				
Effect	Num DF	Den DF	F Value	Pr > F
geo_num	9	8	8.93	0.0026
origin	1	1	1.13	0.4799
geo_num*origin	6	1	7.15	0.2787

Least Squares Means							
Effect	geo_num	origin	Estimate	Standard Error	DF	t Value	Pr > |t|
geo_num	1		Non-est	.	.	.	.
geo_num	10		0.1086	0.01431	8	7.59	<.0001
geo_num	2		0.08411	0.01431	8	5.88	0.0004
geo_num	3		0.03406	0.01542	8	2.21	0.0582
geo_num	4		0.04657	0.01427	8	3.26	0.0115
geo_num	5		Non-est	.	.	.	.
geo_num	6		0.04886	0.01431	8	3.41	0.0092
geo_num	7		Non-est	.	.	.	.
geo_num	8		0.04316	0.01542	8	2.80	0.0232
geo_num	9		0.09961	0.01431	8	6.96	0.0001
origin		Intro	Non-est	.	.	.	.
origin		Nat	Non-est	.	.	.	.
geo_num*origin	1	Nat	0.1117	0.01383	1	8.07	0.0784
geo_num*origin	10	Intro	0.09879	0.01566	1	6.31	0.1001
geo_num*origin	10	Nat	0.1184	0.02018	1	5.87	0.1075
geo_num*origin	2	Intro	0.07279	0.01566	1	4.65	0.1349

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Least Squares Means							
Effect	geo_num	origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	2	Nat	0.09543	0.02018	1	4.73	0.1327
geo_num*origin	3	Intro	0.05069	0.01942	1	2.61	0.2329
geo_num*origin	3	Nat	0.01743	0.02018	1	0.86	0.5465
geo_num*origin	4	Intro	0.07771	0.01553	1	5.01	0.1255
geo_num*origin	4	Nat	0.01543	0.02018	1	0.76	0.5845
geo_num*origin	5	Nat	0.04879	0.01566	1	3.11	0.1978
geo_num*origin	6	Intro	0.02243	0.02018	1	1.11	0.4665
geo_num*origin	6	Nat	0.07529	0.01566	1	4.81	0.1306
geo_num*origin	7	Intro	0.07167	0.01383	1	5.18	0.1214
geo_num*origin	8	Intro	0.06443	0.02018	1	3.19	0.1933
geo_num*origin	8	Nat	0.02188	0.01942	1	1.13	0.4621
geo_num*origin	9	Intro	0.04943	0.02018	1	2.45	0.2468
geo_num*origin	9	Nat	0.1498	0.01566	1	9.56	0.0663

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num	1		10		Non-est	.	.	.	.
geo_num	1		2		Non-est	.	.	.	.
geo_num	1		3		Non-est	.	.	.	.
geo_num	1		4		Non-est	.	.	.	.
geo_num	1		5		0.06288	0.01455	8	4.32	0.0025
geo_num	1		6		Non-est	.	.	.	.
geo_num	1		7		Non-est	.	.	.	.
geo_num	1		8		Non-est	.	.	.	.
geo_num	1		9		Non-est	.	.	.	.
geo_num	10		2		0.02450	0.01332	8	1.84	0.1032
geo_num	10		3		0.07455	0.01451	8	5.14	0.0009
geo_num	10		4		0.06204	0.01328	8	4.67	0.0016
geo_num	10		5		Non-est	.	.	.	.
geo_num	10		6		0.05975	0.01332	8	4.48	0.0020
geo_num	10		7		Non-est	.	.	.	.
geo_num	10		8		0.06545	0.01451	8	4.51	0.0020
geo_num	10		9		0.009000	0.01332	8	0.68	0.5184
geo_num	2		3		0.05005	0.01451	8	3.45	0.0087
geo_num	2		4		0.03754	0.01328	8	2.83	0.0223
geo_num	2		5		Non-est	.	.	.	.
geo_num	2		6		0.03525	0.01332	8	2.65	0.0294
geo_num	2		7		Non-est	.	.	.	.
geo_num	2		8		0.04095	0.01451	8	2.82	0.0224
geo_num	2		9		-0.01550	0.01332	8	-1.16	0.2782
geo_num	3		4		-0.01251	0.01446	8	-0.87	0.4122
geo_num	3		5		Non-est	.	.	.	.
geo_num	3		6		-0.01480	0.01451	8	-1.02	0.3375
geo_num	3		7		Non-est	.	.	.	.
geo_num	3		8		-0.00910	0.01582	8	-0.58	0.5810
geo_num	3		9		-0.06555	0.01451	8	-4.52	0.0020
geo_num	4		5		Non-est	.	.	.	.
geo_num	4		6		-0.00229	0.01328	8	-0.17	0.8675
geo_num	4		7		Non-est
geo_num	4		8		0.003413	0.01448	8	0.24	0.8196
geo_num	4		9		-0.05304	0.01328	8	-3.99	0.0040

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num	5		6		Non-est	.	.	.	.
geo_num	5		7		Non-est	.	.	.	.
geo_num	5		8		Non-est	.	.	.	.
geo_num	5		9		Non-est	.	.	.	.
geo_num	6		7		Non-est	.	.	.	.
geo_num	6		8		0.005701	0.01451	8	0.39	0.7046
geo_num	6		9		-0.05075	0.01332	8	-3.81	0.0052
geo_num	7		8		Non-est	.	.	.	.
geo_num	7		9		Non-est	.	.	.	.
geo_num	8		9		-0.05645	0.01451	8	-3.89	0.0046
origin		Intro		Nat	Non-est	.	.	.	.
geo_num*origin	1	Nat	10	Intro	0.01288	0.01455	1	0.89	0.5388
geo_num*origin	1	Nat	10	Nat	-0.00676	0.01934	1	-0.35	0.7858
geo_num*origin	1	Nat	2	Intro	0.03888	0.01455	1	2.67	0.2280
geo_num*origin	1	Nat	2	Nat	0.01624	0.01934	1	0.84	0.5553
geo_num*origin	1	Nat	3	Intro	0.06098	0.01854	1	3.29	0.1879
geo_num*origin	1	Nat	3	Nat	0.09424	0.01934	1	4.87	0.1288
geo_num*origin	1	Nat	4	Intro	0.03396	0.01441	1	2.36	0.2554
geo_num*origin	1	Nat	4	Nat	0.09624	0.01934	1	4.98	0.1262
geo_num*origin	1	Nat	5	Nat	0.06288	0.01455	1	4.32	0.1448
geo_num*origin	1	Nat	6	Intro	0.08924	0.01934	1	4.61	0.1359
geo_num*origin	1	Nat	6	Nat	0.03638	0.01455	1	2.50	0.2423
geo_num*origin	1	Nat	7	Intro	0.04000	0.01256	1	3.18	0.1937
geo_num*origin	1	Nat	8	Intro	0.04724	0.01934	1	2.44	0.2474
geo_num*origin	1	Nat	8	Nat	0.08978	0.01854	1	4.84	0.1296
geo_num*origin	1	Nat	9	Intro	0.06224	0.01934	1	3.22	0.1918
geo_num*origin	1	Nat	9	Nat	-0.03812	0.01455	1	-2.62	0.2322
geo_num*origin	10	Intro	10	Nat	-0.01964	0.02205	1	-0.89	0.5367
geo_num*origin	10	Intro	2	Intro	0.02600	0.01538	1	1.69	0.3401
geo_num*origin	10	Intro	2	Nat	0.003355	0.02205	1	0.15	0.9039
geo_num*origin	10	Intro	3	Intro	0.04810	0.01920	1	2.51	0.2418
geo_num*origin	10	Intro	3	Nat	0.08136	0.02205	1	3.69	0.1685
geo_num*origin	10	Intro	4	Intro	0.02108	0.01524	1	1.38	0.3987
geo_num*origin	10	Intro	4	Nat	0.08336	0.02205	1	3.78	0.1647
geo_num*origin	10	Intro	5	Nat	0.05000	0.01538	1	3.25	0.1900

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	10	Intro	6	Intro	0.07636	0.02205	1	3.46	0.1790
geo_num*origin	10	Intro	6	Nat	0.02350	0.01538	1	1.53	0.3690
geo_num*origin	10	Intro	7	Intro	0.02712	0.01455	1	1.86	0.3136
geo_num*origin	10	Intro	8	Intro	0.03436	0.02205	1	1.56	0.3633
geo_num*origin	10	Intro	8	Nat	0.07690	0.01920	1	4.01	0.1557
geo_num*origin	10	Intro	9	Intro	0.04936	0.02205	1	2.24	0.2675
geo_num*origin	10	Intro	9	Nat	-0.05100	0.01538	1	-3.32	0.1865
geo_num*origin	10	Nat	2	Intro	0.04564	0.02205	1	2.07	0.2865
geo_num*origin	10	Nat	2	Nat	0.02300	0.02176	1	1.06	0.4823
geo_num*origin	10	Nat	3	Intro	0.06774	0.02486	1	2.72	0.2239
geo_num*origin	10	Nat	3	Nat	0.1010	0.02176	1	4.64	0.1351
geo_num*origin	10	Nat	4	Intro	0.04072	0.02196	1	1.85	0.3148
geo_num*origin	10	Nat	4	Nat	0.1030	0.02176	1	4.73	0.1325
geo_num*origin	10	Nat	5	Nat	0.06964	0.02205	1	3.16	0.1952
geo_num*origin	10	Nat	6	Intro	0.09600	0.02176	1	4.41	0.1419
geo_num*origin	10	Nat	6	Nat	0.04314	0.02205	1	1.96	0.3008
geo_num*origin	10	Nat	7	Intro	0.04676	0.01934	1	2.42	0.2496
geo_num*origin	10	Nat	8	Intro	0.05400	0.02176	1	2.48	0.2438
geo_num*origin	10	Nat	8	Nat	0.09655	0.02486	1	3.88	0.1605
geo_num*origin	10	Nat	9	Intro	0.06900	0.02176	1	3.17	0.1944
geo_num*origin	10	Nat	9	Nat	-0.03136	0.02205	1	-1.42	0.3902
geo_num*origin	2	Intro	2	Nat	-0.02264	0.02205	1	-1.03	0.4916
geo_num*origin	2	Intro	3	Intro	0.02210	0.01920	1	1.15	0.4554
geo_num*origin	2	Intro	3	Nat	0.05536	0.02205	1	2.51	0.2414
geo_num*origin	2	Intro	4	Intro	-0.00492	0.01524	1	-0.32	0.8011
geo_num*origin	2	Intro	4	Nat	0.05736	0.02205	1	2.60	0.2337
geo_num*origin	2	Intro	5	Nat	0.02400	0.01538	1	1.56	0.3629
geo_num*origin	2	Intro	6	Intro	0.05036	0.02205	1	2.28	0.2628
geo_num*origin	2	Intro	6	Nat	-0.00250	0.01538	1	-0.16	0.8974
geo_num*origin	2	Intro	7	Intro	0.001118	0.01455	1	0.08	0.9512
geo_num*origin	2	Intro	8	Intro	0.008355	0.02205	1	0.38	0.7694
geo_num*origin	2	Intro	8	Nat	0.05090	0.01920	1	2.65	0.2296
geo_num*origin	2	Intro	9	Intro	0.02336	0.02205	1	1.06	0.4818
geo_num*origin	2	Intro	9	Nat	-0.07700	0.01538	1	-5.01	0.1255
geo_num*origin	2	Nat	3	Intro	0.04474	0.02486	1	1.80	0.3229

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	2	Nat	3	Nat	0.07800	0.02176	1	3.59	0.1732
geo_num*origin	2	Nat	4	Intro	0.01772	0.02196	1	0.81	0.5677
geo_num*origin	2	Nat	4	Nat	0.08000	0.02176	1	3.68	0.1690
geo_num*origin	2	Nat	5	Nat	0.04664	0.02205	1	2.12	0.2812
geo_num*origin	2	Nat	6	Intro	0.07300	0.02176	1	3.36	0.1844
geo_num*origin	2	Nat	6	Nat	0.02014	0.02205	1	0.91	0.5288
geo_num*origin	2	Nat	7	Intro	0.02376	0.01934	1	1.23	0.4349
geo_num*origin	2	Nat	8	Intro	0.03100	0.02176	1	1.42	0.3896
geo_num*origin	2	Nat	8	Nat	0.07355	0.02486	1	2.96	0.2075
geo_num*origin	2	Nat	9	Intro	0.04600	0.02176	1	2.11	0.2812
geo_num*origin	2	Nat	9	Nat	-0.05436	0.02205	1	-2.46	0.2454
geo_num*origin	3	Intro	3	Nat	0.03326	0.02486	1	1.34	0.4087
geo_num*origin	3	Intro	4	Intro	-0.02702	0.01906	1	-1.42	0.3911
geo_num*origin	3	Intro	4	Nat	0.03526	0.02486	1	1.42	0.3910
geo_num*origin	3	Intro	5	Nat	0.001903	0.01920	1	0.10	0.9371
geo_num*origin	3	Intro	6	Intro	0.02826	0.02486	1	1.14	0.4594
geo_num*origin	3	Intro	6	Nat	-0.02460	0.01920	1	-1.28	0.4219
geo_num*origin	3	Intro	7	Intro	-0.02098	0.01854	1	-1.13	0.4607
geo_num*origin	3	Intro	8	Intro	-0.01374	0.02486	1	-0.55	0.6786
geo_num*origin	3	Intro	8	Nat	0.02881	0.02297	1	1.25	0.4285
geo_num*origin	3	Intro	9	Intro	0.001258	0.02486	1	0.05	0.9678
geo_num*origin	3	Intro	9	Nat	-0.09910	0.01920	1	-5.16	0.1218
geo_num*origin	3	Nat	4	Intro	-0.06028	0.02196	1	-2.75	0.2224
geo_num*origin	3	Nat	4	Nat	0.002000	0.02176	1	0.09	0.9416
geo_num*origin	3	Nat	5	Nat	-0.03136	0.02205	1	-1.42	0.3902
geo_num*origin	3	Nat	6	Intro	-0.00500	0.02176	1	-0.23	0.8562
geo_num*origin	3	Nat	6	Nat	-0.05786	0.02205	1	-2.62	0.2318
geo_num*origin	3	Nat	7	Intro	-0.05424	0.01934	1	-2.80	0.2180
geo_num*origin	3	Nat	8	Intro	-0.04700	0.02176	1	-2.16	0.2760
geo_num*origin	3	Nat	8	Nat	-0.00445	0.02486	1	-0.18	0.8872
geo_num*origin	3	Nat	9	Intro	-0.03200	0.02176	1	-1.47	0.3801
geo_num*origin	3	Nat	9	Nat	-0.1324	0.02205	1	-6.00	0.1051
geo_num*origin	4	Intro	4	Nat	0.06228	0.02196	1	2.84	0.2158
geo_num*origin	4	Intro	5	Nat	0.02892	0.01524	1	1.90	0.3088
geo_num*origin	4	Intro	6	Intro	0.05528	0.02196	1	2.52	0.2407

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	4	Intro	6	Nat	0.002424	0.01524	1	0.16	0.8996
geo_num*origin	4	Intro	7	Intro	0.006043	0.01441	1	0.42	0.7472
geo_num*origin	4	Intro	8	Intro	0.01328	0.02196	1	0.60	0.6537
geo_num*origin	4	Intro	8	Nat	0.05583	0.01911	1	2.92	0.2100
geo_num*origin	4	Intro	9	Intro	0.02828	0.02196	1	1.29	0.4203
geo_num*origin	4	Intro	9	Nat	-0.07208	0.01524	1	-4.73	0.1327
geo_num*origin	4	Nat	5	Nat	-0.03336	0.02205	1	-1.51	0.3719
geo_num*origin	4	Nat	6	Intro	-0.00700	0.02176	1	-0.32	0.8018
geo_num*origin	4	Nat	6	Nat	-0.05986	0.02205	1	-2.71	0.2247
geo_num*origin	4	Nat	7	Intro	-0.05624	0.01934	1	-2.91	0.2108
geo_num*origin	4	Nat	8	Intro	-0.04900	0.02176	1	-2.25	0.2660
geo_num*origin	4	Nat	8	Nat	-0.00645	0.02486	1	-0.26	0.8384
geo_num*origin	4	Nat	9	Intro	-0.03400	0.02176	1	-1.56	0.3624
geo_num*origin	4	Nat	9	Nat	-0.1344	0.02205	1	-6.09	0.1036
geo_num*origin	5	Nat	6	Intro	0.02636	0.02205	1	1.20	0.4436
geo_num*origin	5	Nat	6	Nat	-0.02650	0.01538	1	-1.72	0.3348
geo_num*origin	5	Nat	7	Intro	-0.02288	0.01455	1	-1.57	0.3606
geo_num*origin	5	Nat	8	Intro	-0.01564	0.02205	1	-0.71	0.6072
geo_num*origin	5	Nat	8	Nat	0.02690	0.01920	1	1.40	0.3946
geo_num*origin	5	Nat	9	Intro	-0.00064	0.02205	1	-0.03	0.9814
geo_num*origin	5	Nat	9	Nat	-0.1010	0.01538	1	-6.57	0.0962
geo_num*origin	6	Intro	6	Nat	-0.05286	0.02205	1	-2.40	0.2516
geo_num*origin	6	Intro	7	Intro	-0.04924	0.01934	1	-2.55	0.2382
geo_num*origin	6	Intro	8	Intro	-0.04200	0.02176	1	-1.93	0.3043
geo_num*origin	6	Intro	8	Nat	0.000547	0.02486	1	0.02	0.9860
geo_num*origin	6	Intro	9	Intro	-0.02700	0.02176	1	-1.24	0.4318
geo_num*origin	6	Intro	9	Nat	-0.1274	0.02205	1	-5.77	0.1092
geo_num*origin	6	Nat	7	Intro	0.003618	0.01455	1	0.25	0.8449
geo_num*origin	6	Nat	8	Intro	0.01086	0.02205	1	0.49	0.7088
geo_num*origin	6	Nat	8	Nat	0.05340	0.01920	1	2.78	0.2197
geo_num*origin	6	Nat	9	Intro	0.02586	0.02205	1	1.17	0.4496
geo_num*origin	6	Nat	9	Nat	-0.07450	0.01538	1	-4.84	0.1296
geo_num*origin	7	Intro	8	Intro	0.007237	0.01934	1	0.37	0.7720
geo_num*origin	7	Intro	8	Nat	0.04978	0.01854	1	2.69	0.2269
geo_num*origin	7	Intro	9	Intro	0.02224	0.01934	1	1.15	0.4557

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Differences of Least Squares Means									
Effect	geo_num	origin	_geo_num	_origin	Estimate	Standard Error	DF	t Value	Pr > t
geo_num*origin	7	Intro	9	Nat	-0.07812	0.01455	1	-5.37	0.1173
geo_num*origin	8	Intro	8	Nat	0.04255	0.02486	1	1.71	0.3367
geo_num*origin	8	Intro	9	Intro	0.01500	0.02176	1	0.69	0.6157
geo_num*origin	8	Intro	9	Nat	-0.08536	0.02205	1	-3.87	0.1610
geo_num*origin	8	Nat	9	Intro	-0.02755	0.02486	1	-1.11	0.4674
geo_num*origin	8	Nat	9	Nat	-0.1279	0.01920	1	-6.66	0.0948
geo_num*origin	9	Intro	9	Nat	-0.1004	0.02205	1	-4.55	0.1377