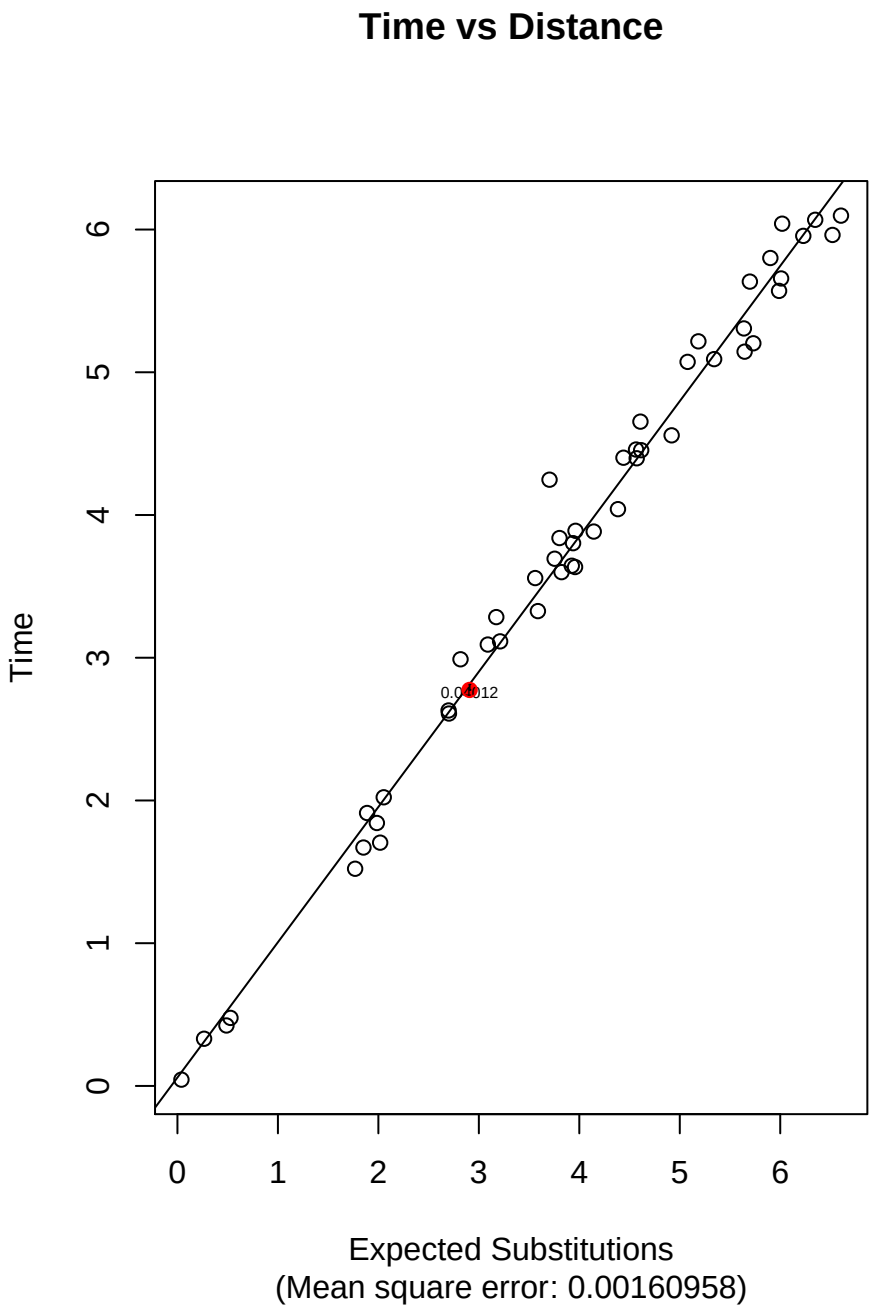
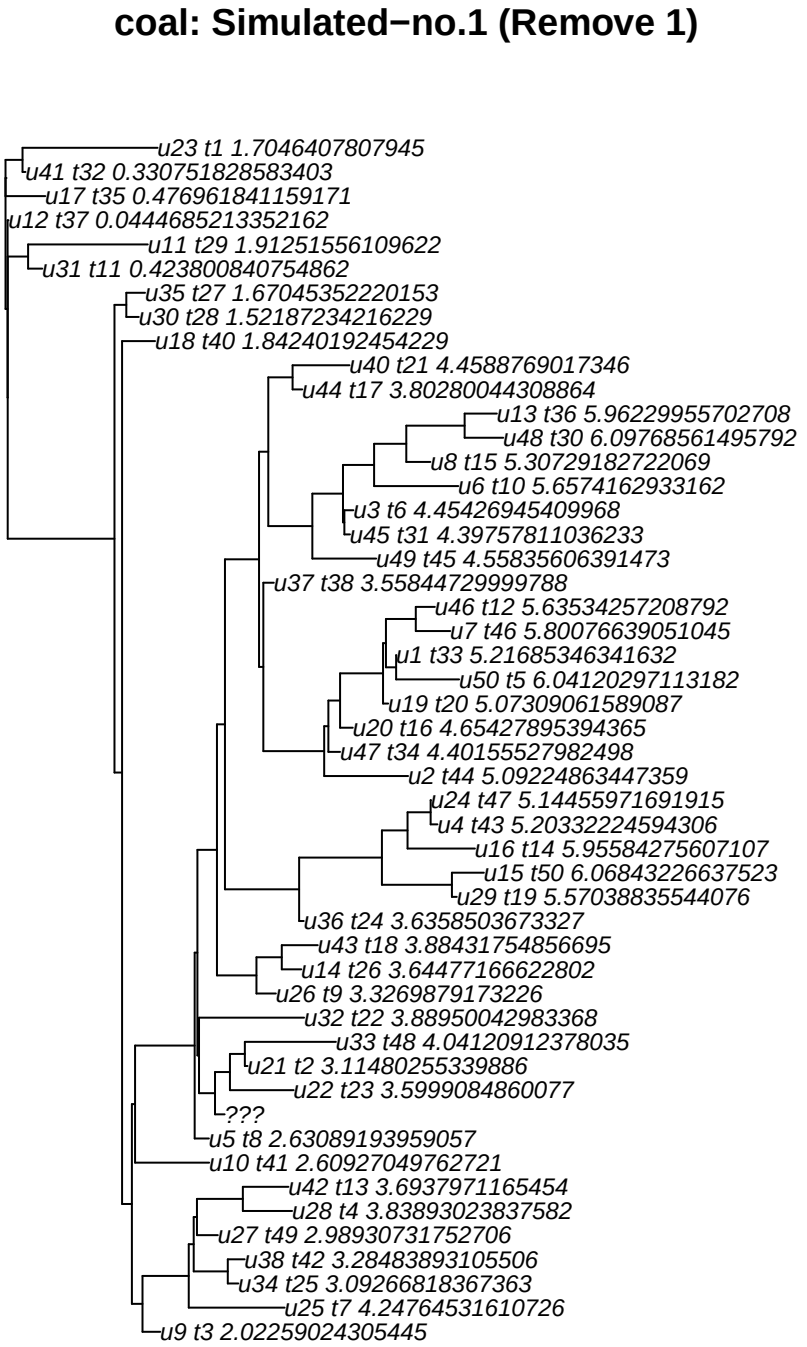
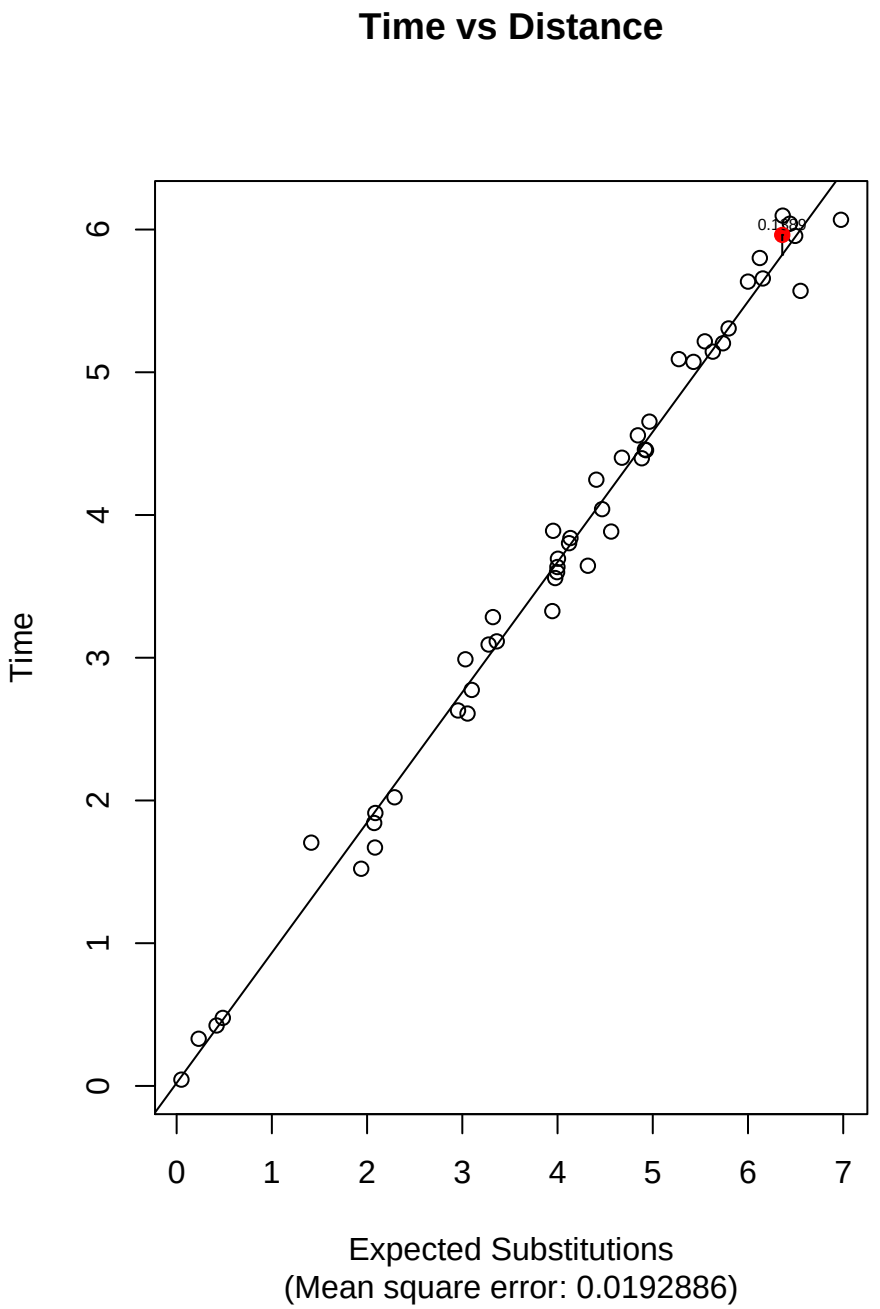
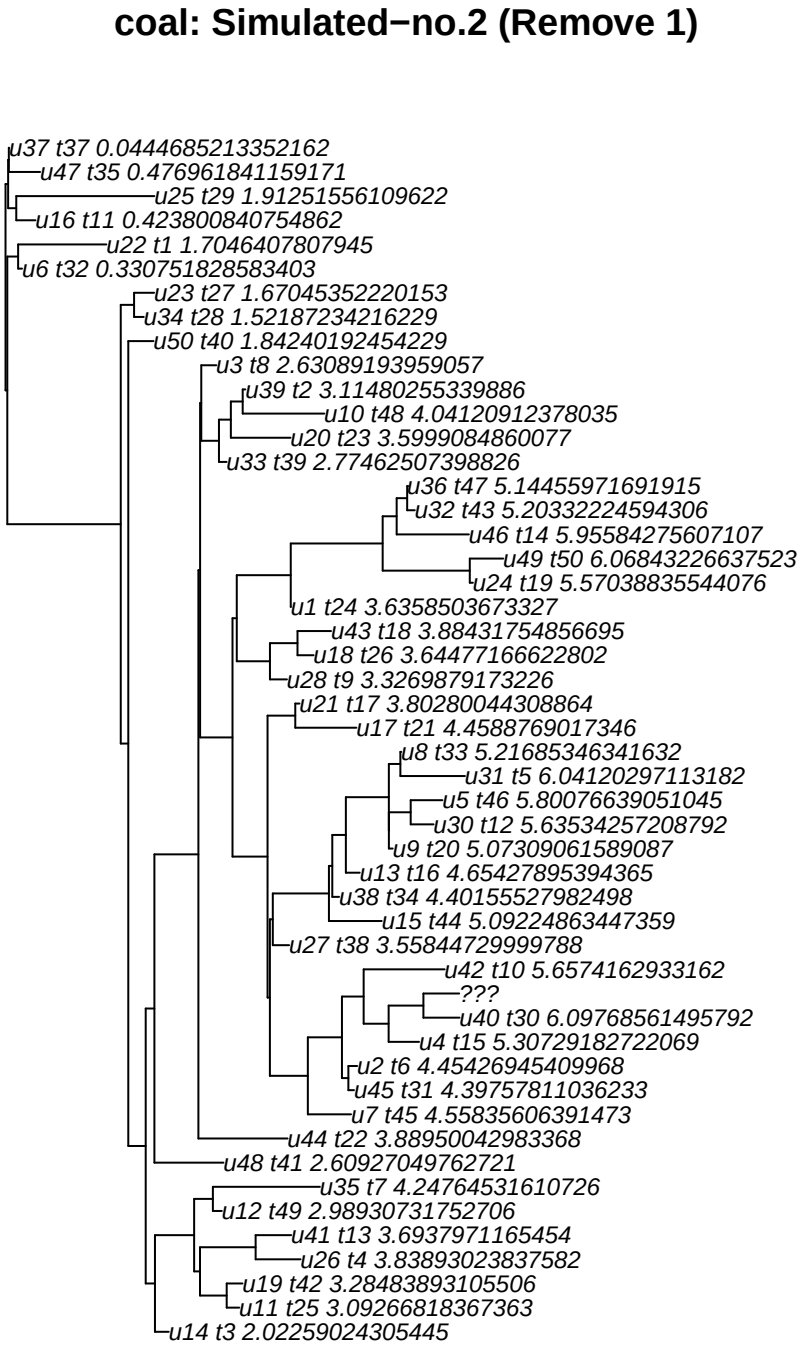
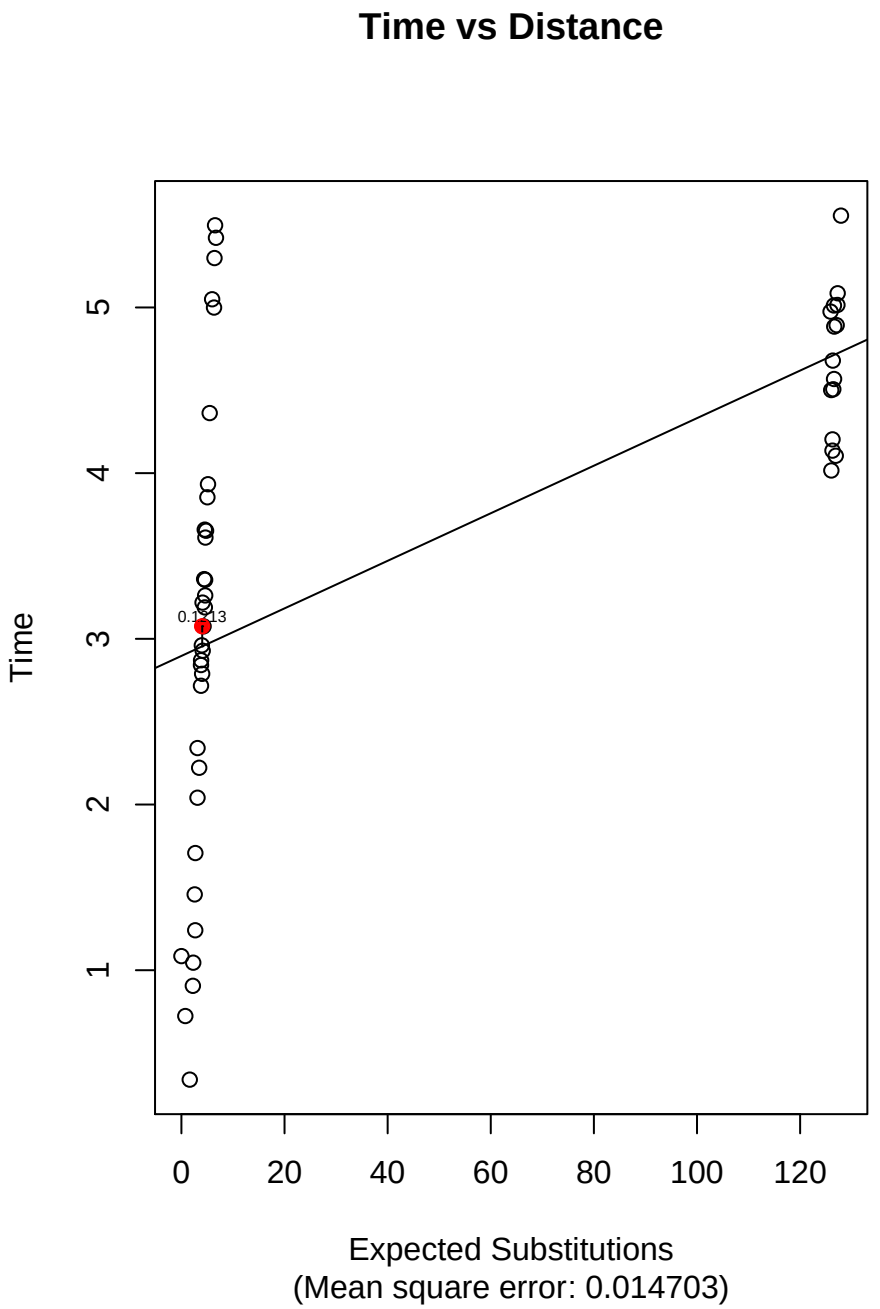
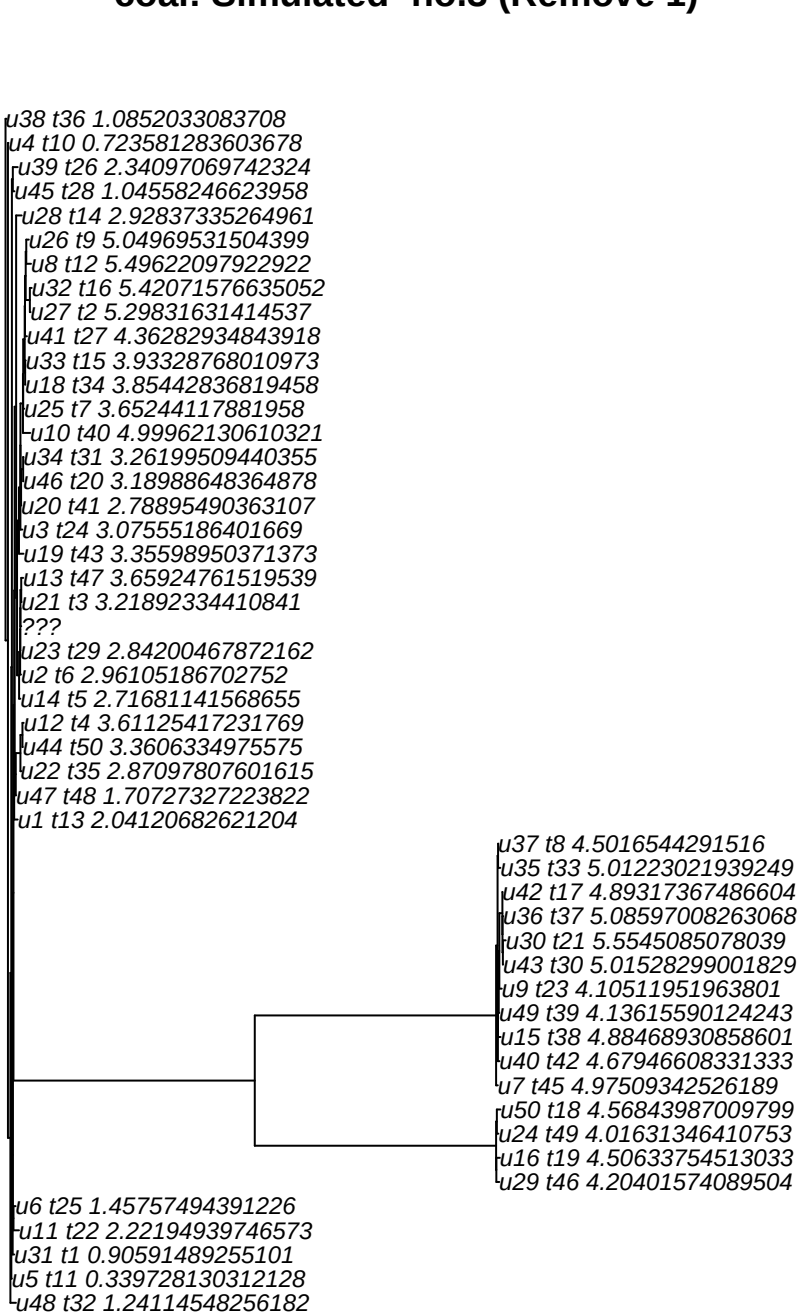

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.00160958)
0.00012
0
1
2
3
4
5
6

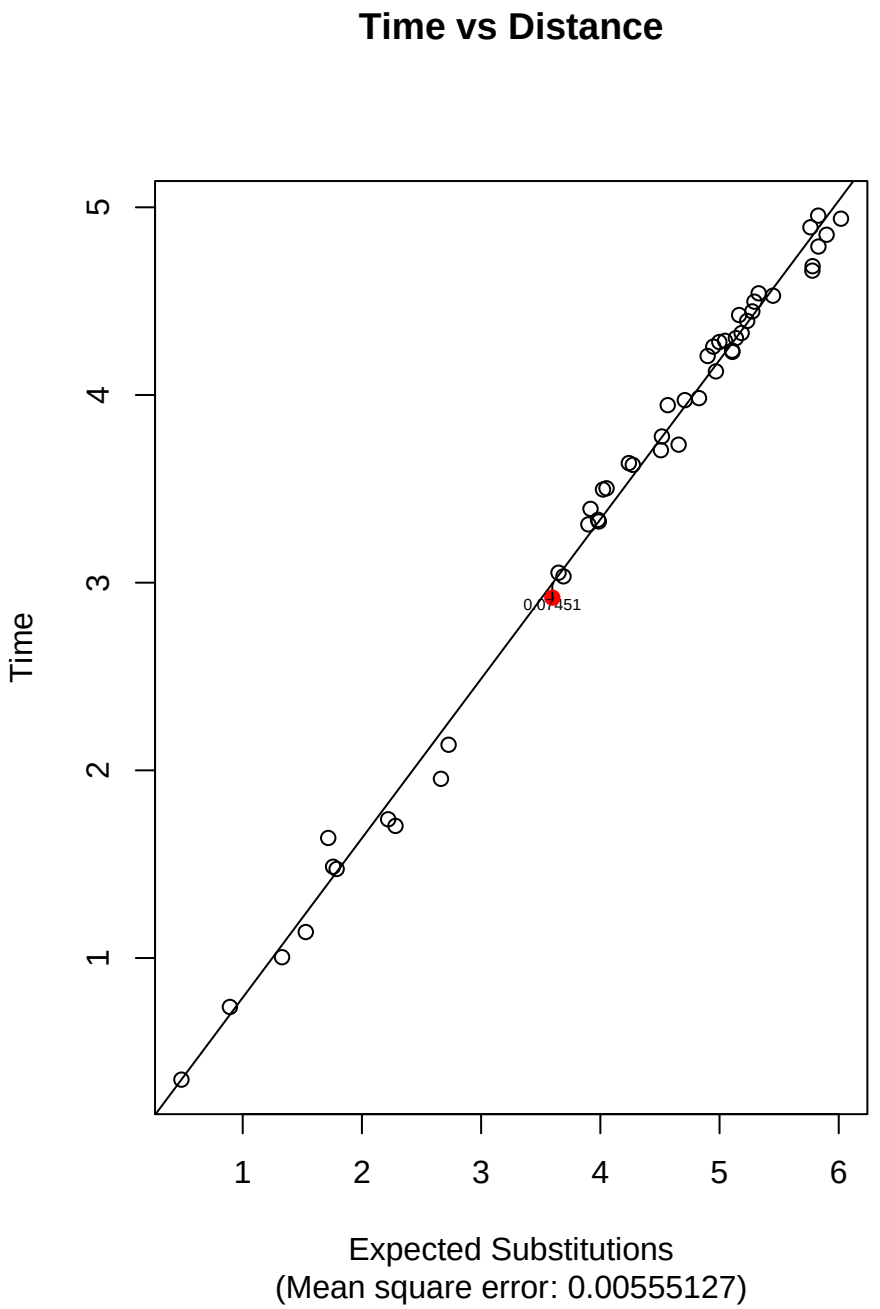

coal: Simulated−no.1 (Remove 1)
u23 t1 1.7046407807945
u41 t32 0.330751828583403
u17 t35 0.476961841159171
u12 t37 0.0444685213352162
u11 t29 1.91251556109622
u31 t11 0.423800840754862
u35 t27 1.67045352220153
u30 t28 1.52187234216229
u18 t40 1.84240192454229
u40 t21 4.4588769017346
u44 t17 3.80280044308864
u13 t36 5.96229955702708
u48 t30 6.09768561495792
u8 t15 5.30729182722069
u6 t10 5.6574162933162
u3 t6 4.45426945409968
u45 t31 4.39757811036233
u49 t45 4.55835606391473
u37 t38 3.55844729999788
u46 t12 5.63534257208792
u7 t46 5.80076639051045
u1 t33 5.21685346341632
u50 t5 6.04120297113182
u19 t20 5.07309061589087
u20 t16 4.65427895394365
u47 t34 4.40155527982498
u2 t44 5.09224863447359
u24 t47 5.14455971691915
u4 t43 5.20332224594306
u16 t14 5.95584275607107
u15 t50 6.06843226637523
u29 t19 5.57038835544076
u36 t24 3.6358503673327
u43 t18 3.88431754856695
u14 t26 3.64477166622802
u26 t9 3.3269879173226
u32 t22 3.88950042983368
u33 t48 4.04120912378035
u21 t2 3.11480255339886
u22 t23 3.5999084860077
???
u5 t8 2.63089193959057
u10 t41 2.60927049762721
u42 t13 3.6937971165454
u28 t4 3.83893023837582
u27 t49 2.98930731752706
u38 t42 3.28483893105506
u34 t25 3.09266818367363
u25 t7 4.24764531610726
u9 t3 2.02259024305445

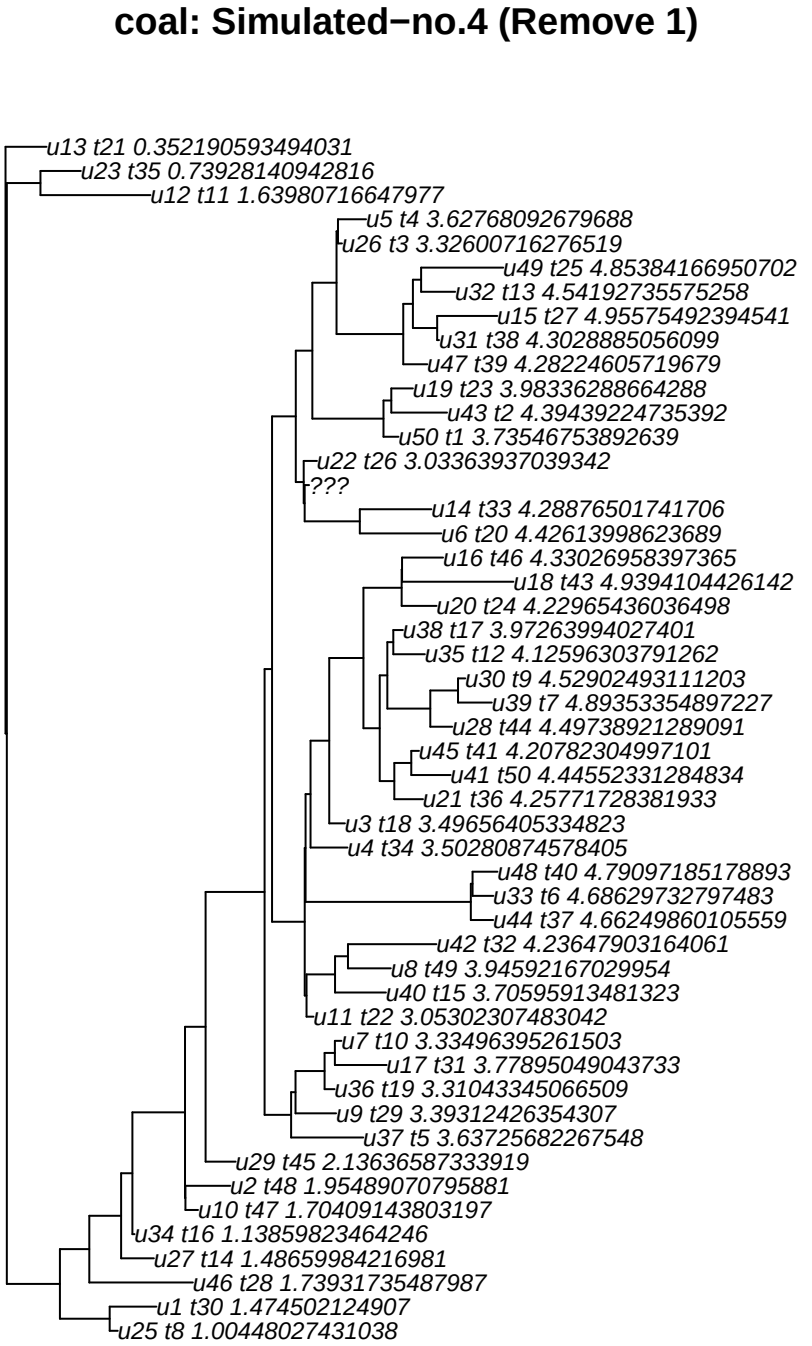

Time vs Distance
Time
0
1
2
3
4
5
6
7
Expected Substitutions
(Mean square error: 0.0192886)

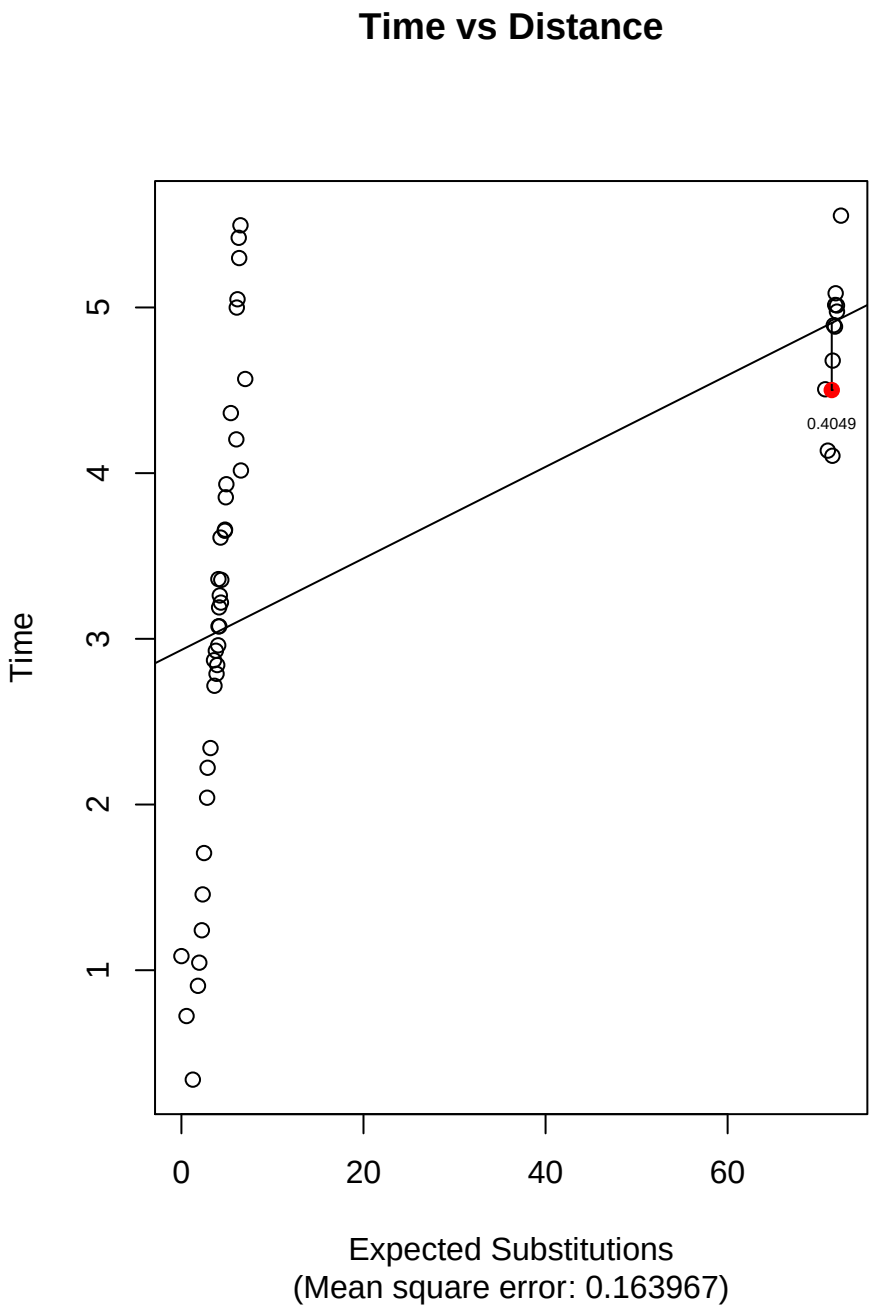

coal: Simulated−no.2 (Remove 1)
u37 t37 0.0444685213352162
u47 t35 0.476961841159171
u25 t29 1.91251556109622
u16 t11 0.423800840754862
u22 t1 1.7046407807945
u6 t32 0.330751828583403
u23 t27 1.67045352220153
u34 t28 1.52187234216229
u50 t40 1.84240192454229
u3 t8 2.63089193959057
u39 t2 3.11480255339886
u10 t48 4.04120912378035
u20 t23 3.5999084860077
u33 t39 2.77462507398826
u36 t47 5.14455971691915
u32 t43 5.20332224594306
u46 t14 5.95584275607107
u49 t50 6.06843226637523
u24 t19 5.57038835544076
u1 t24 3.6358503673327
u43 t18 3.88431754856695
u18 t26 3.64477166622802
u28 t9 3.3269879173226
u21 t17 3.80280044308864
u17 t21 4.4588769017346
u8 t33 5.21685346341632
u31 t5 6.04120297113182
u5 t46 5.80076639051045
u30 t12 5.63534257208792
u9 t20 5.07309061589087
u13 t16 4.65427895394365
u38 t34 4.40155527982498
u15 t44 5.09224863447359
u27 t38 3.55844729999788
u42 t10 5.6574162933162
???
u40 t30 6.09768561495792
u4 t15 5.30729182722069
u2 t6 4.45426945409968
u45 t31 4.39757811036233
u7 t45 4.55835606391473
u44 t22 3.88950042983368
u48 t41 2.60927049762721
u35 t7 4.24764531610726
u12 t49 2.98930731752706
u41 t13 3.6937971165454
u26 t4 3.83893023837582
u19 t42 3.28483893105506
u11 t25 3.09266818367363
u14 t3 2.02259024305445

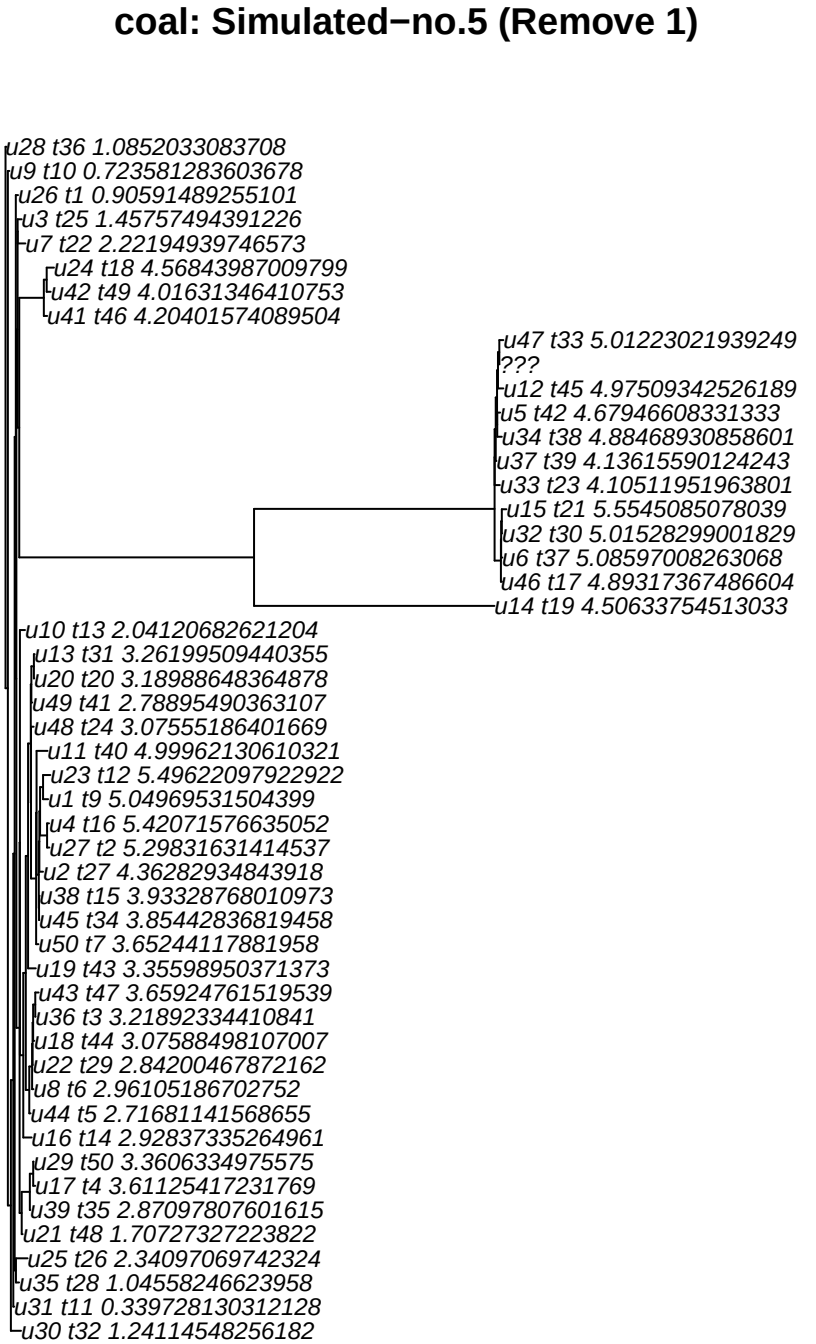

Time vs Distance
Time
1
2
3
4
5
0
20
40
60
80
100
120
Expected Substitutions
(Mean square error: 0.014703)

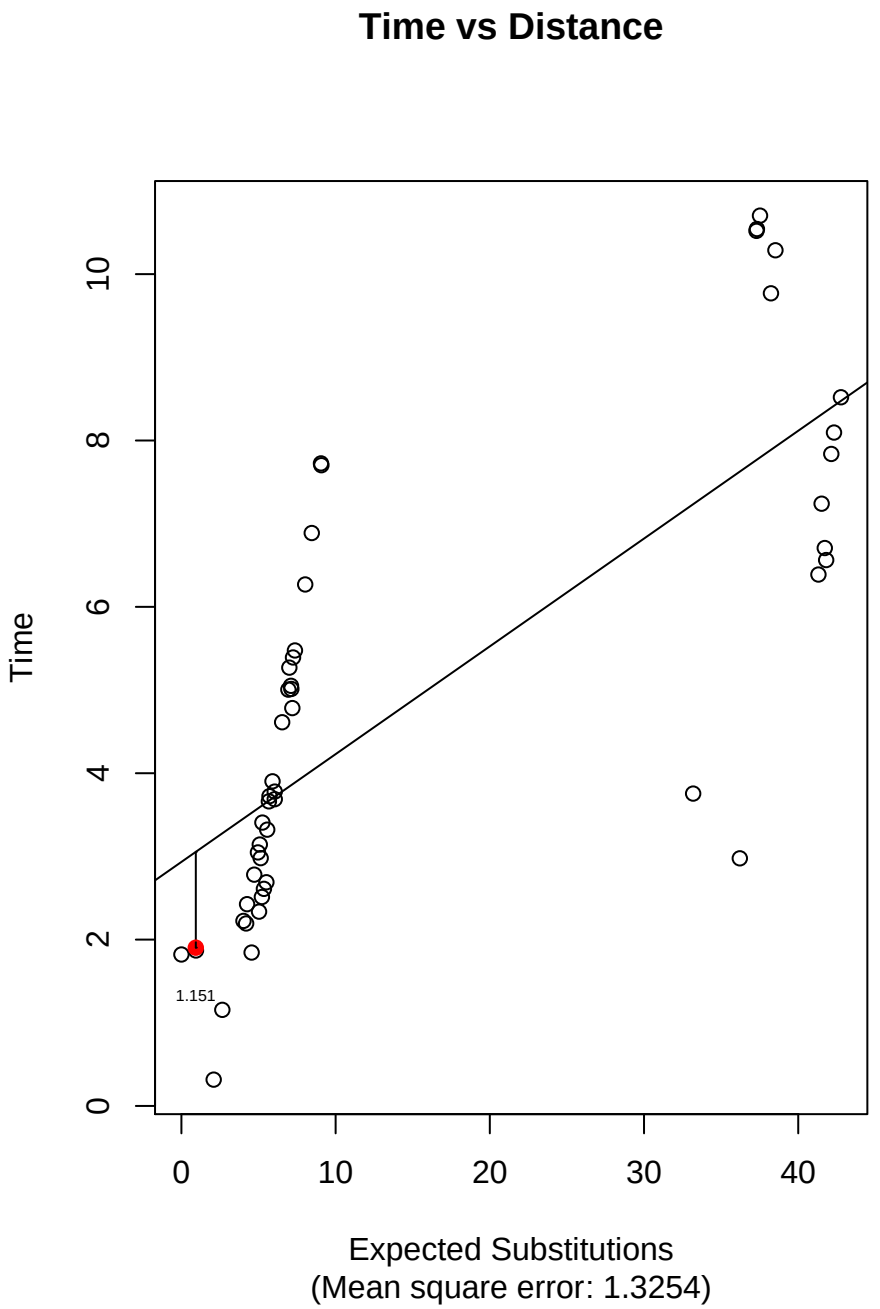

coal: Simulated−no.3 (Remove 1)
u38 t36 1.0852033083708
u4 t10 0.723581283603678
u39 t26 2.34097069742324
u45 t28 1.04558246623958
u28 t14 2.92837335264961
u26 t9 5.04969531504399
u8 t12 5.49622097922922
u32 t16 5.42071576635052
u27 t2 5.29831631414537
u41 t27 4.36282934843918
u33 t15 3.93328768010973
u18 t34 3.85442836819458
u25 t7 3.65244117881958
u10 t40 4.99962130610321
u34 t31 3.26199509440355
u46 t20 3.18988648364878
u20 t41 2.78895490363107
u3 t24 3.07555186401669
u19 t43 3.35598950371373
u13 t47 3.65924761519539
u21 t3 3.21892334410841
???
u23 t29 2.84200467872162
u2 t6 2.96105186702752
u14 t5 2.71681141568655
u12 t4 3.61125417231769
u44 t50 3.3606334975575
u22 t35 2.87097807601615
u47 t48 1.70727327223822
u1 t13 2.04120682621204
u37 t8 4.5016544291516
u35 t33 5.01223021939249
u42 t17 4.89317367486604
u36 t37 5.08597008263068
u30 t21 5.5545085078039
u43 t30 5.01528299001829
u9 t23 4.10511951963801
u49 t39 4.13615590124243
u15 t38 4.88468930858601
u40 t42 4.67946608331333
u7 t45 4.97509342526189
u50 t18 4.56843987009799
u24 t49 4.01631346410753
u16 t19 4.50633754513033
u29 t46 4.20401574089504
u6 t25 1.45757494391226
u11 t22 2.22194939746573
u31 t1 0.90591489255101
u5 t11 0.339728130312128
u48 t32 1.24114548256182

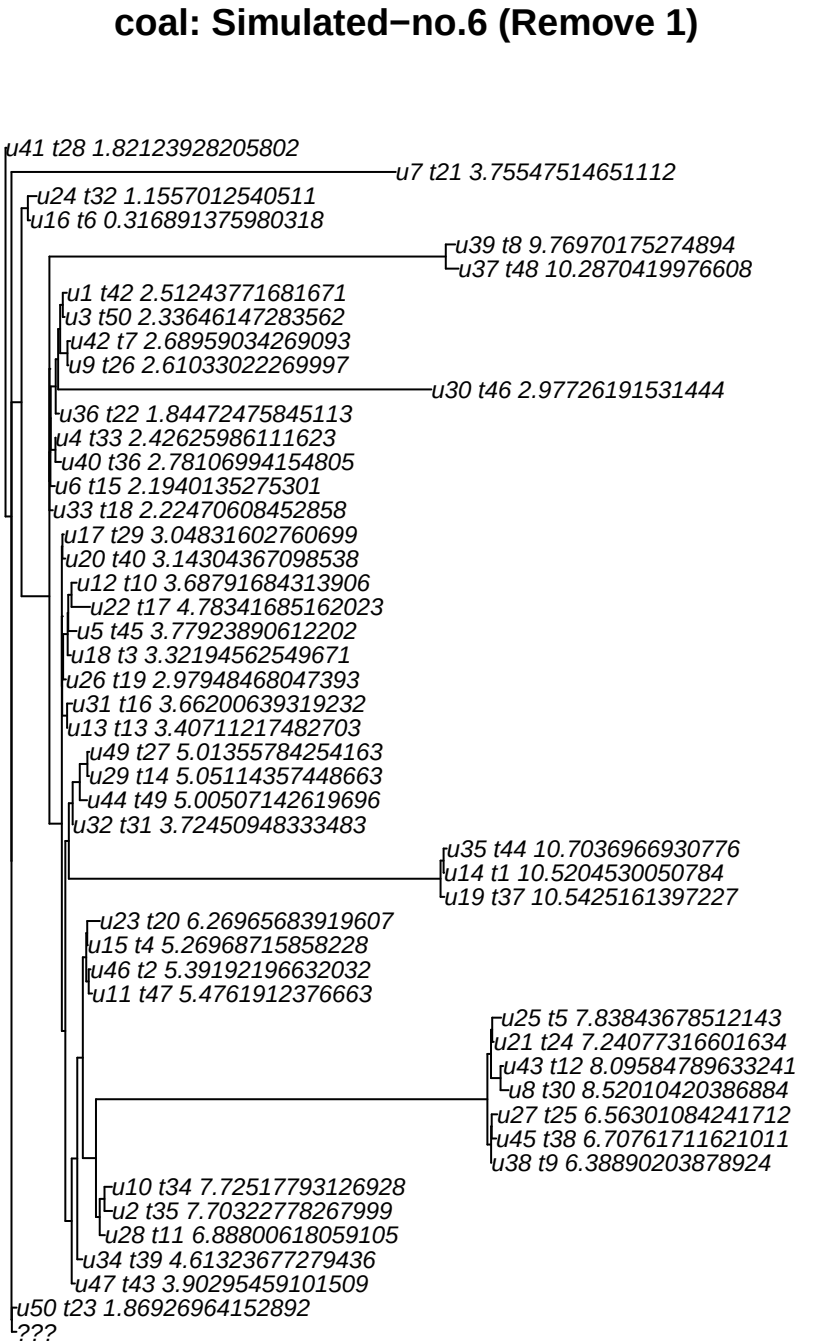

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.00555127)
0.07451
1
2
3
4
5
6

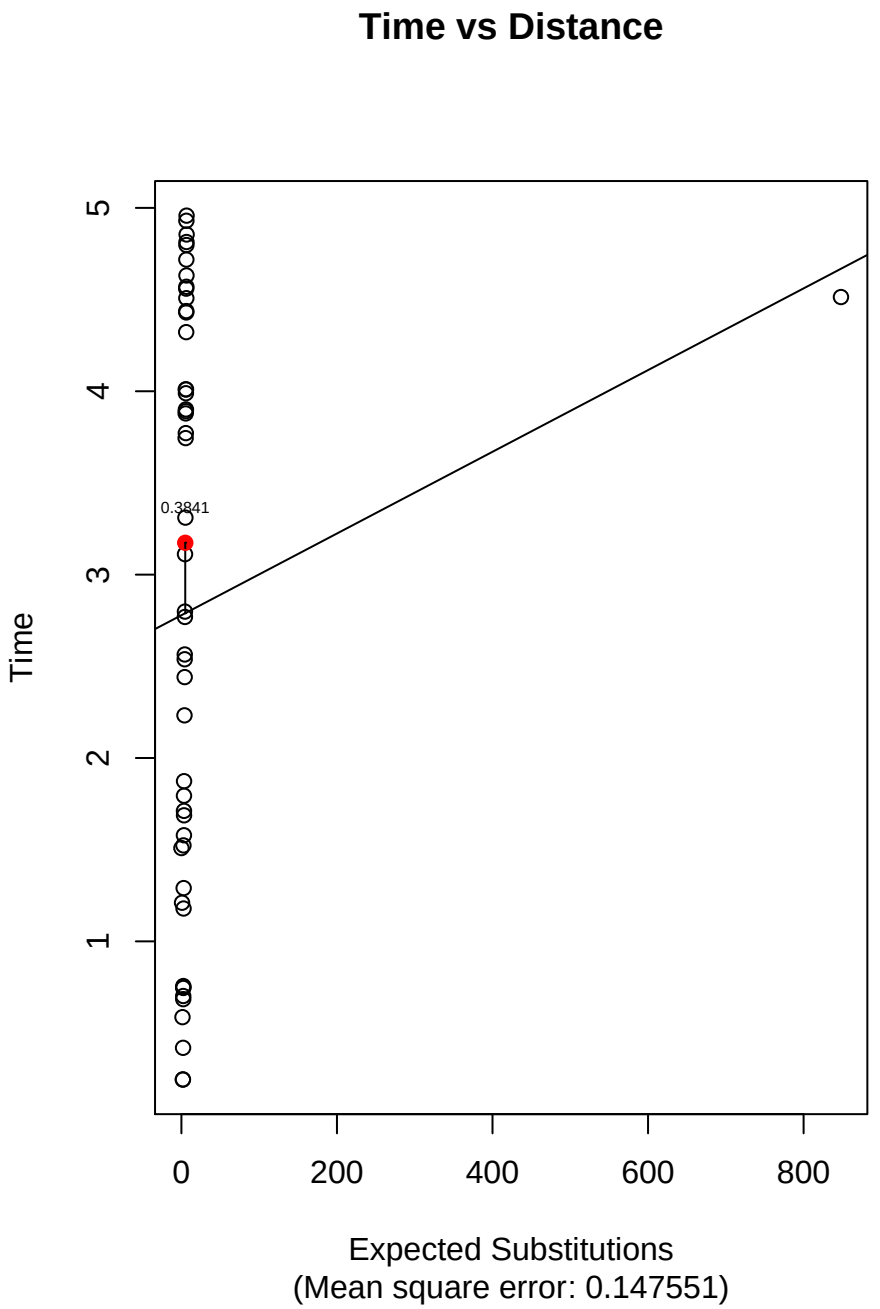

coal: Simulated−no.4 (Remove 1)
u13 t21 0.352190593494031
u23 t35 0.73928140942816
u12 t11 1.63980716647977
u5 t4 3.62768092679688
u26 t3 3.32600716276519
u49 t25 4.85384166950702
u32 t13 4.54192735575258
u15 t27 4.95575492394541
u31 t38 4.3028885056099
u47 t39 4.28224605719679
u19 t23 3.98336288664288
u43 t2 4.39439224735392
u50 t1 3.73546753892639
u22 t26 3.03363937039342
???
u14 t33 4.28876501741706
u6 t20 4.42613998623689
u16 t46 4.33026958397365
u18 t43 4.9394104426142
u20 t24 4.22965436036498
u38 t17 3.97263994027401
u35 t12 4.12596303791262
u30 t9 4.52902493111203
u39 t7 4.89353354897227
u28 t44 4.49738921289091
u45 t41 4.20782304997101
u41 t50 4.44552331284834
u21 t36 4.25771728381933
u3 t18 3.49656405334823
u4 t34 3.50280874578405
u48 t40 4.79097185178893
u33 t6 4.68629732797483
u44 t37 4.66249860105559
u42 t32 4.23647903164061
u8 t49 3.94592167029954
u40 t15 3.70595913481323
u11 t22 3.05302307483042
u7 t10 3.33496395261503
u17 t31 3.77895049043733
u36 t19 3.31043345066509
u9 t29 3.39312426354307
u37 t5 3.63725682267548
u29 t45 2.13636587333919
u2 t48 1.95489070795881
u10 t47 1.70409143803197
u34 t16 1.13859823464246
u27 t14 1.48659984216981
u46 t28 1.73931735487987
u1 t30 1.474502124907
u25 t8 1.00448027431038

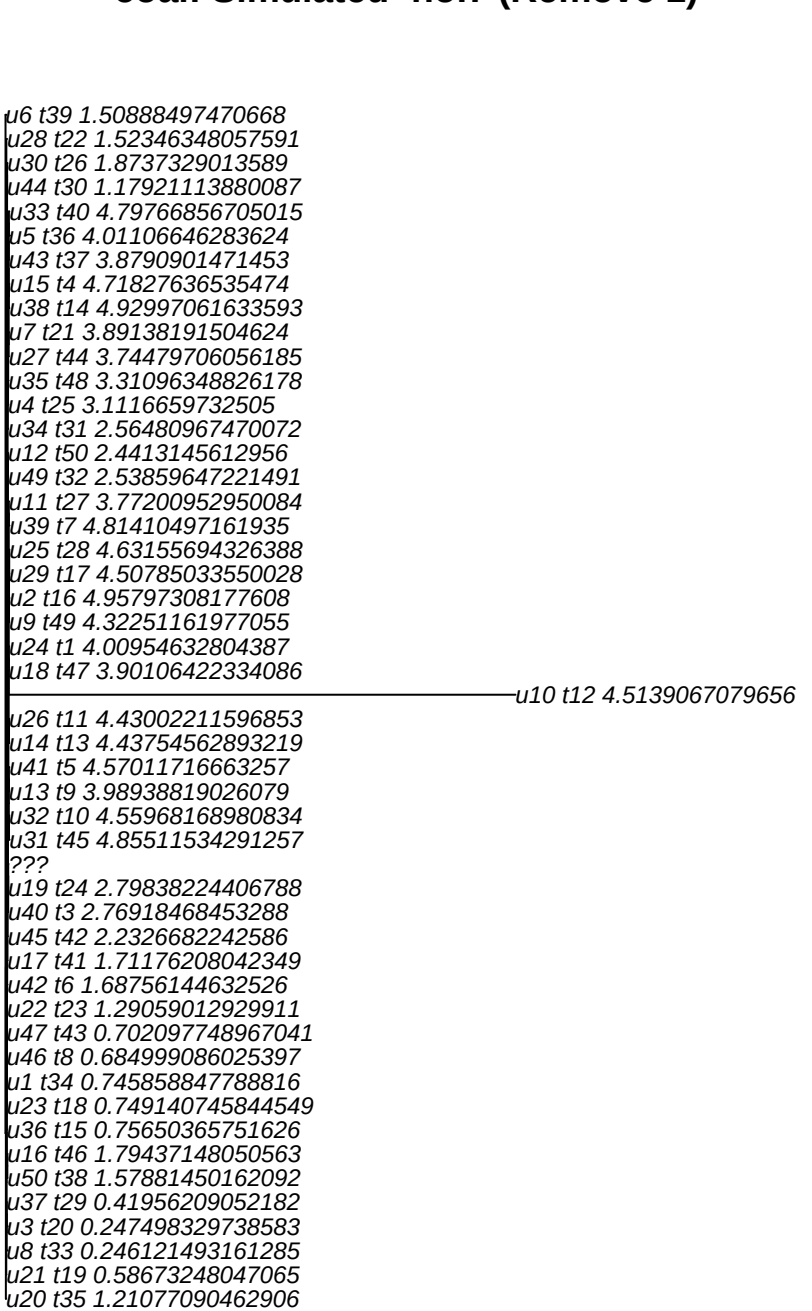

Time vs Distance
Time
0.4049
0
20
40
60
1
2
3
4
5
Expected Substitutions
(Mean square error: 0.163967)

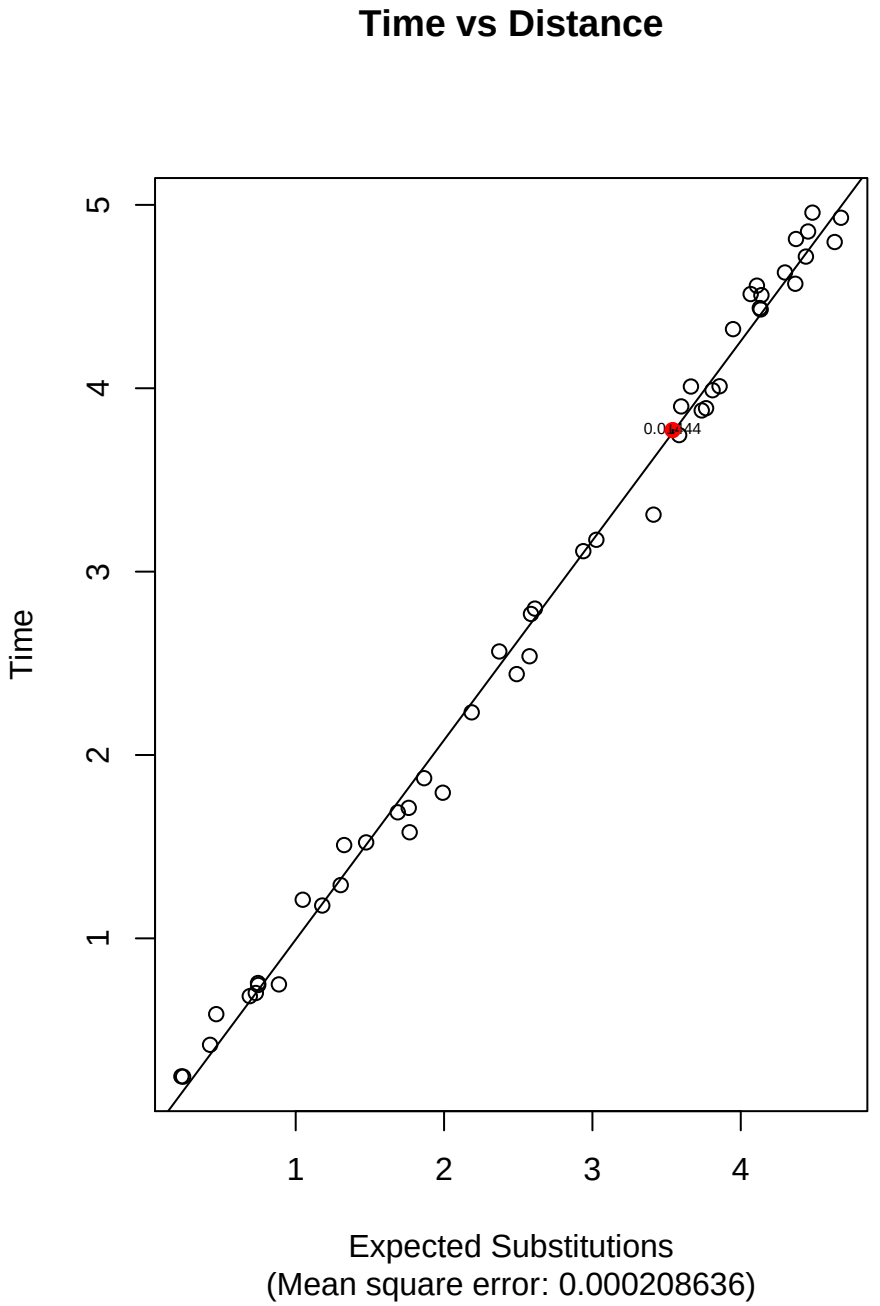

coal: Simulated−no.5 (Remove 1)
u28 t36 1.0852033083708
u9 t10 0.723581283603678
u26 t1 0.90591489255101
u3 t25 1.45757494391226
u7 t22 2.22194939746573
u24 t18 4.56843987009799
u42 t49 4.01631346410753
u41 t46 4.20401574089504
u47 t33 5.01223021939249
???
u12 t45 4.97509342526189
u5 t42 4.67946608331333
u34 t38 4.88468930858601
u37 t39 4.13615590124243
u33 t23 4.10511951963801
u15 t21 5.5545085078039
u32 t30 5.01528299001829
u6 t37 5.08597008263068
u46 t17 4.89317367486604
u14 t19 4.50633754513033
u10 t13 2.04120682621204
u13 t31 3.26199509440355
u20 t20 3.18988648364878
u49 t41 2.78895490363107
u48 t24 3.07555186401669
u11 t40 4.99962130610321
u23 t12 5.49622097922922
u1 t9 5.04969531504399
u4 t16 5.42071576635052
u27 t2 5.29831631414537
u2 t27 4.36282934843918
u38 t15 3.93328768010973
u45 t34 3.85442836819458
u50 t7 3.65244117881958
u19 t43 3.35598950371373
u43 t47 3.65924761519539
u36 t3 3.21892334410841
u18 t44 3.07588498107007
u22 t29 2.84200467872162
u8 t6 2.96105186702752
u44 t5 2.71681141568655
u16 t14 2.92837335264961
u29 t50 3.3606334975575
u17 t4 3.61125417231769
u39 t35 2.87097807601615
u21 t48 1.70727327223822
u25 t26 2.34097069742324
u35 t28 1.04558246623958
u31 t11 0.339728130312128
u30 t32 1.24114548256182

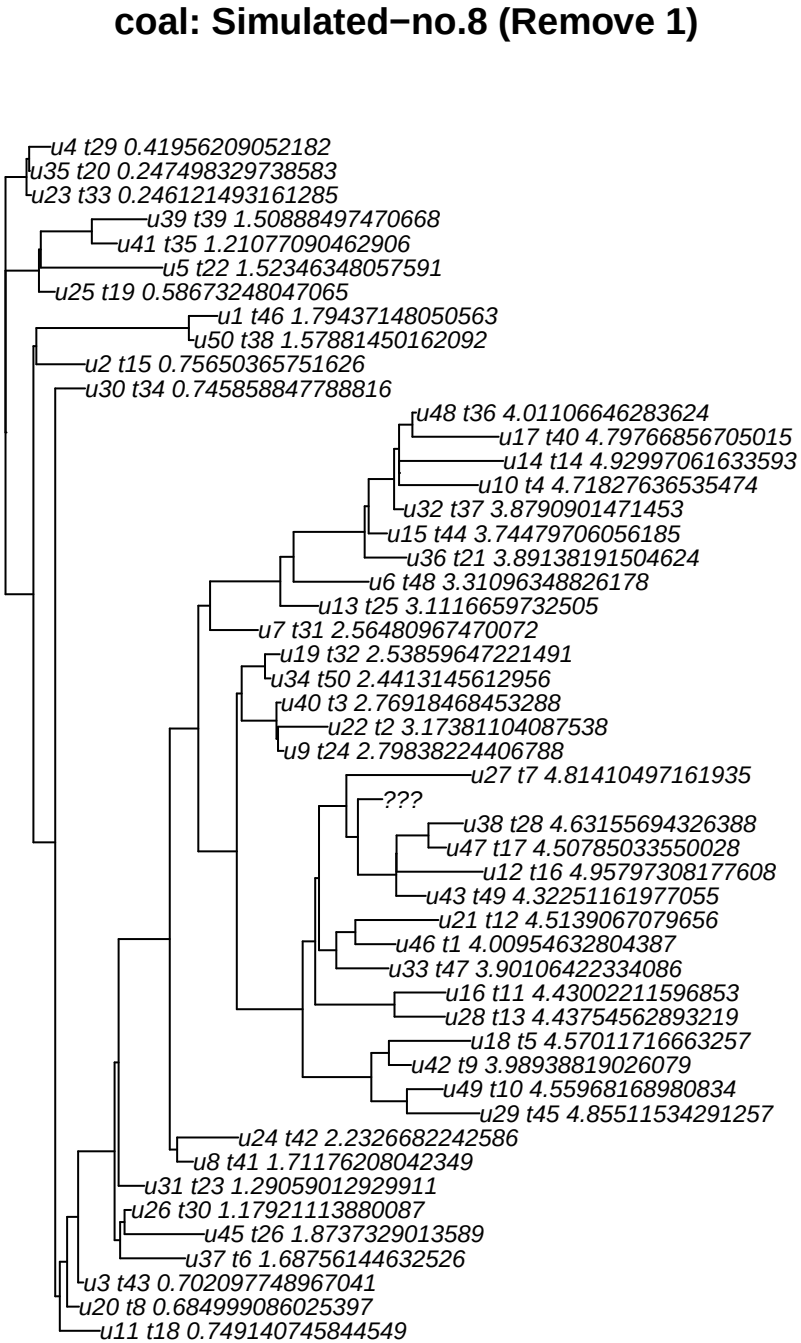

Time vs Distance
Time
0
2
4
6
8
10
0
10
20
30
40
1.151
Expected Substitutions
(Mean square error: 1.3254)

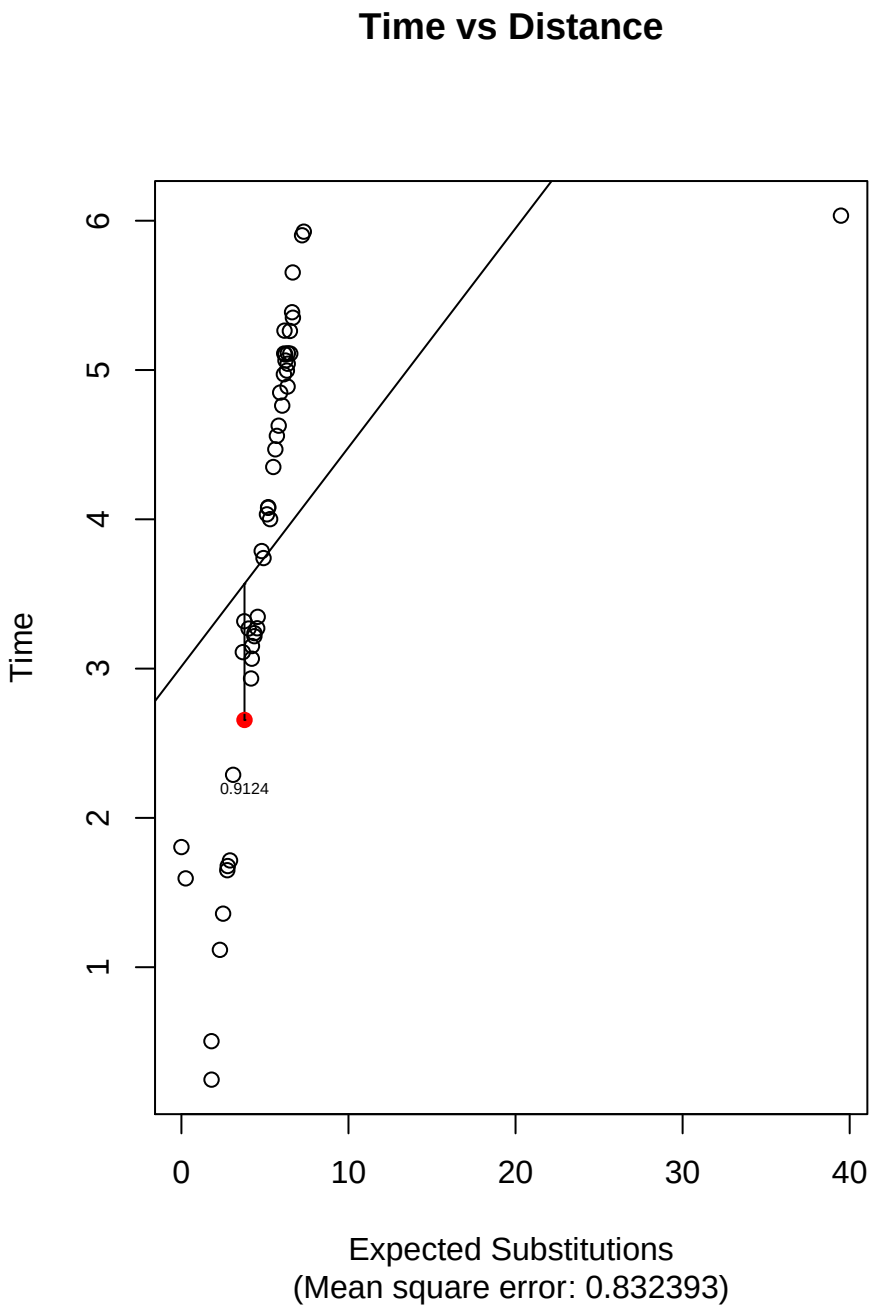

coal: Simulated−no.6 (Remove 1)
u41 t28 1.82123928205802
u7 t21 3.75547514651112
u24 t32 1.1557012540511
u16 t6 0.316891375980318
u39 t8 9.76970175274894
u37 t48 10.2870419976608
u1 t42 2.51243771681671
u3 t50 2.33646147283562
u42 t7 2.68959034269093
u9 t26 2.61033022269997
u30 t46 2.97726191531444
u36 t22 1.84472475845113
u4 t33 2.42625986111623
u40 t36 2.78106994154805
u6 t15 2.1940135275301
u33 t18 2.22470608452858
u17 t29 3.04831602760699
u20 t40 3.14304367098538
u12 t10 3.68791684313906
u22 t17 4.78341685162023
u5 t45 3.77923890612202
u18 t3 3.32194562549671
u26 t19 2.97948468047393
u31 t16 3.66200639319232
u13 t13 3.40711217482703
u49 t27 5.01355784254163
u29 t14 5.05114357448663
u44 t49 5.00507142619696
u32 t31 3.72450948333483
u35 t44 10.7036966930776
u14 t1 10.5204530050784
u19 t37 10.5425161397227
u23 t20 6.26965683919607
u15 t4 5.26968715858228
u46 t2 5.39192196632032
u11 t47 5.4761912376663
u25 t5 7.83843678512143
u21 t24 7.24077316601634
u43 t12 8.09584789633241
u8 t30 8.52010420386884
u27 t25 6.56301084241712
u45 t38 6.70761711621011
u38 t9 6.38890203878924
u10 t34 7.72517793126928
u2 t35 7.70322778267999
u28 t11 6.88800618059105
u34 t39 4.61323677279436
u47 t43 3.90295459101509
u50 t23 1.86926964152892
???

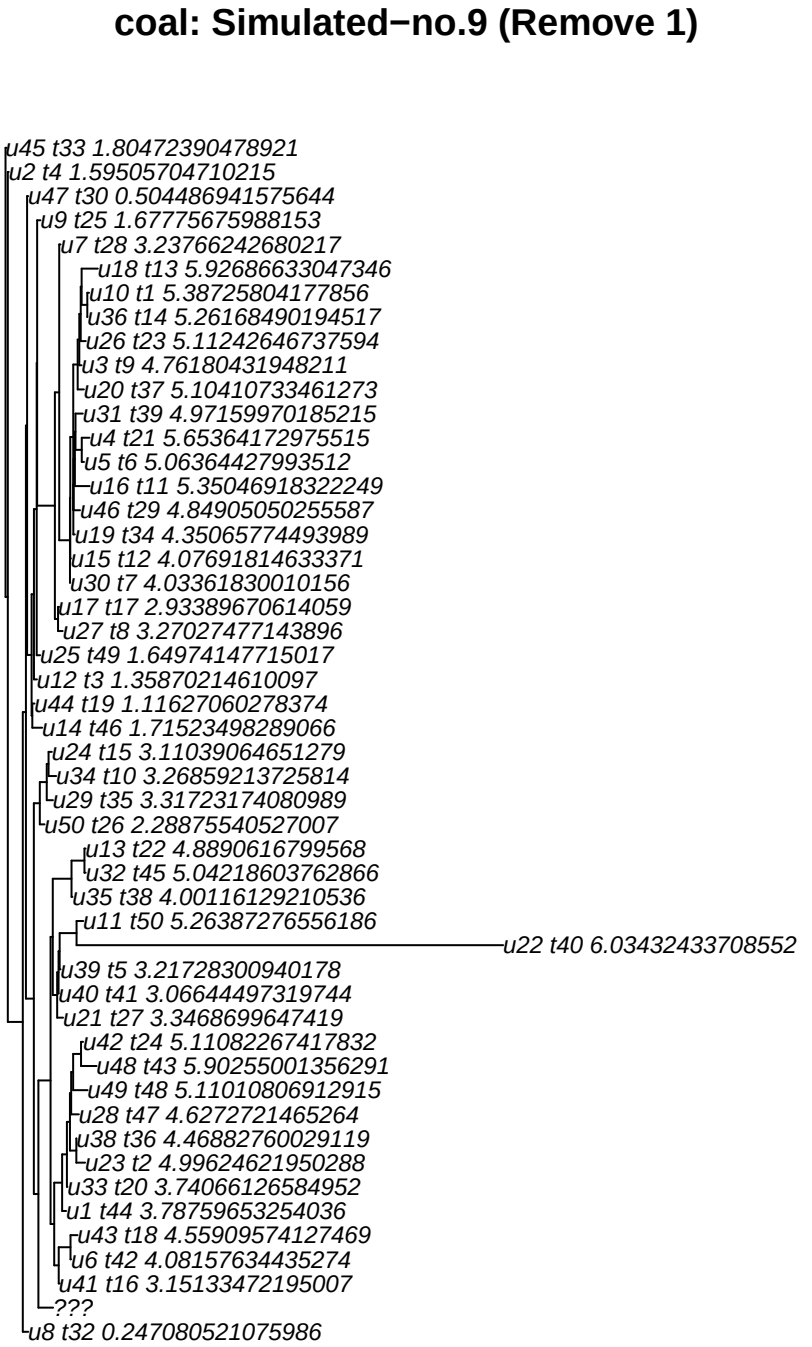

Time vs Distance
Time
0.3841
0
200
400
600
800
1
2
3
4
5
Expected Substitutions
(Mean square error: 0.147551)

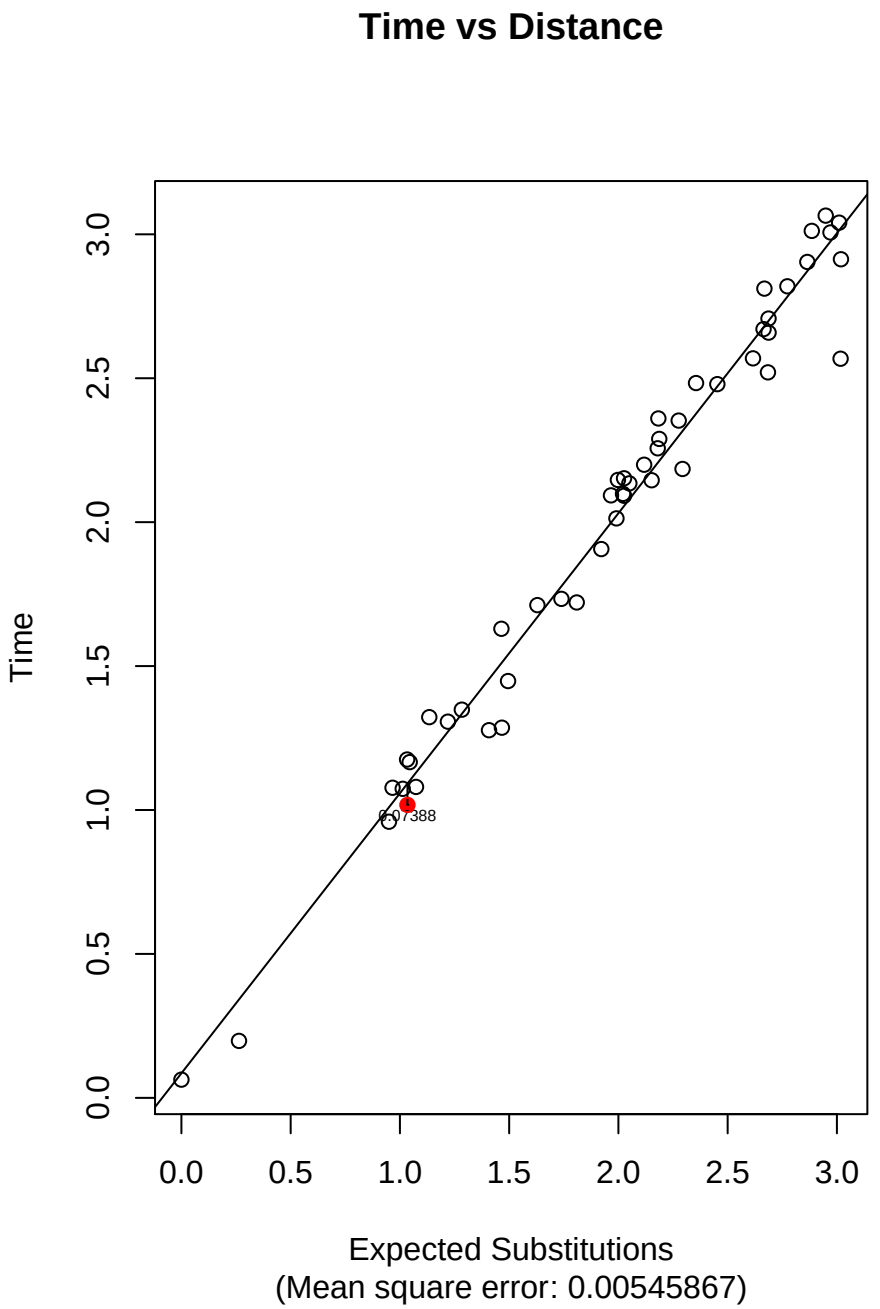

coal: Simulated−no.7 (Remove 1)
u6 t39 1.50888497470668
u28 t22 1.52346348057591
u30 t26 1.8737329013589
u44 t30 1.17921113880087
u33 t40 4.79766856705015
u5 t36 4.01106646283624
u43 t37 3.8790901471453
u15 t4 4.71827636535474
u38 t14 4.92997061633593
u7 t21 3.89138191504624
u27 t44 3.74479706056185
u35 t48 3.31096348826178
u4 t25 3.1116659732505
u34 t31 2.56480967470072
u12 t50 2.4413145612956
u49 t32 2.53859647221491
u11 t27 3.77200952950084
u39 t7 4.81410497161935
u25 t28 4.63155694326388
u29 t17 4.50785033550028
u2 t16 4.95797308177608
u9 t49 4.32251161977055
u24 t1 4.00954632804387
u18 t47 3.90106422334086
u10 t12 4.5139067079656
u26 t11 4.43002211596853
u14 t13 4.43754562893219
u41 t5 4.57011716663257
u13 t9 3.98938819026079
u32 t10 4.55968168980834
u31 t45 4.85511534291257
???
u19 t24 2.79838224406788
u40 t3 2.76918468453288
u45 t42 2.2326682242586
u17 t41 1.71176208042349
u42 t6 1.68756144632526
u22 t23 1.29059012929911
u47 t43 0.702097748967041
u46 t8 0.684999086025397
u1 t34 0.745858847788816
u23 t18 0.749140745844549
u36 t15 0.75650365751626
u16 t46 1.79437148050563
u50 t38 1.57881450162092
u37 t29 0.41956209052182
u3 t20 0.247498329738583
u8 t33 0.246121493161285
u21 t19 0.58673248047065
u20 t35 1.21077090462906

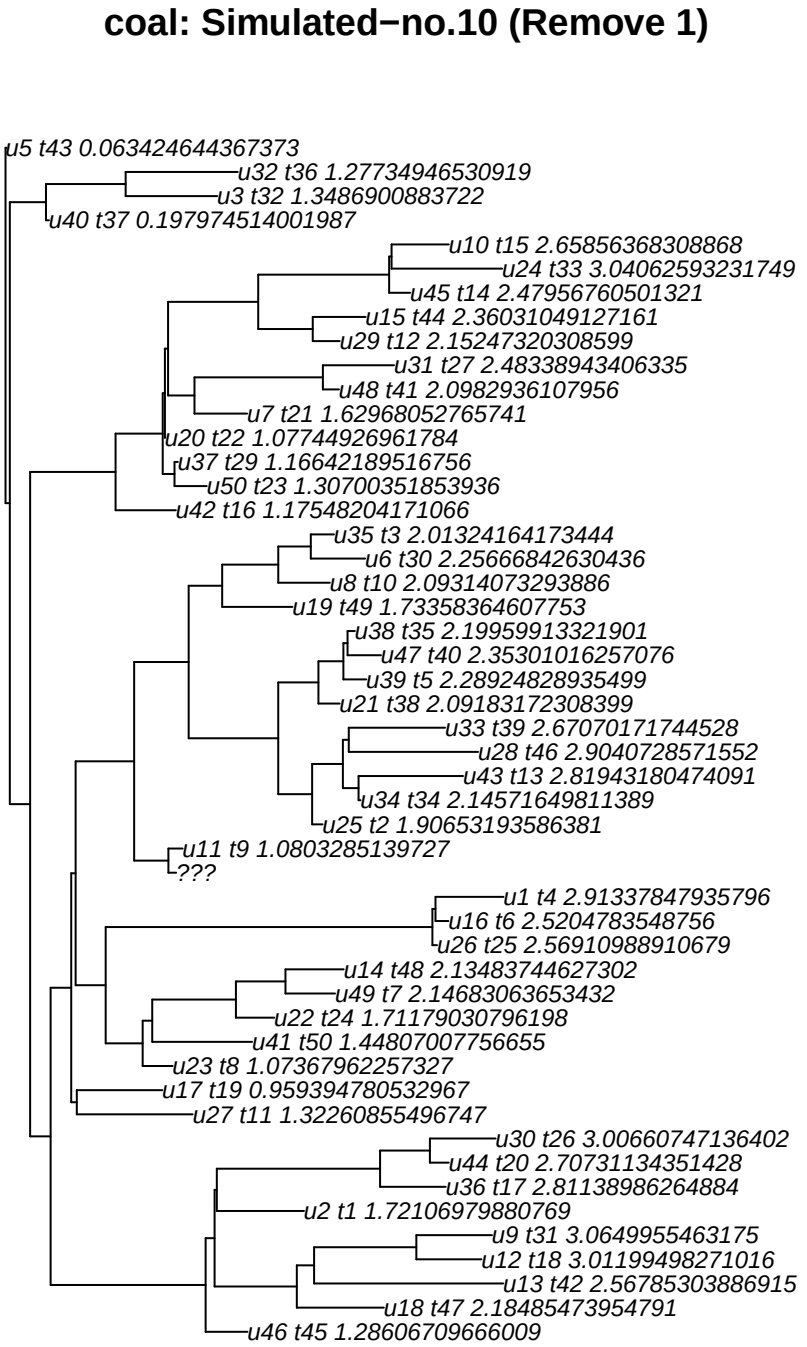

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.000208636)
1
2
3
4
5

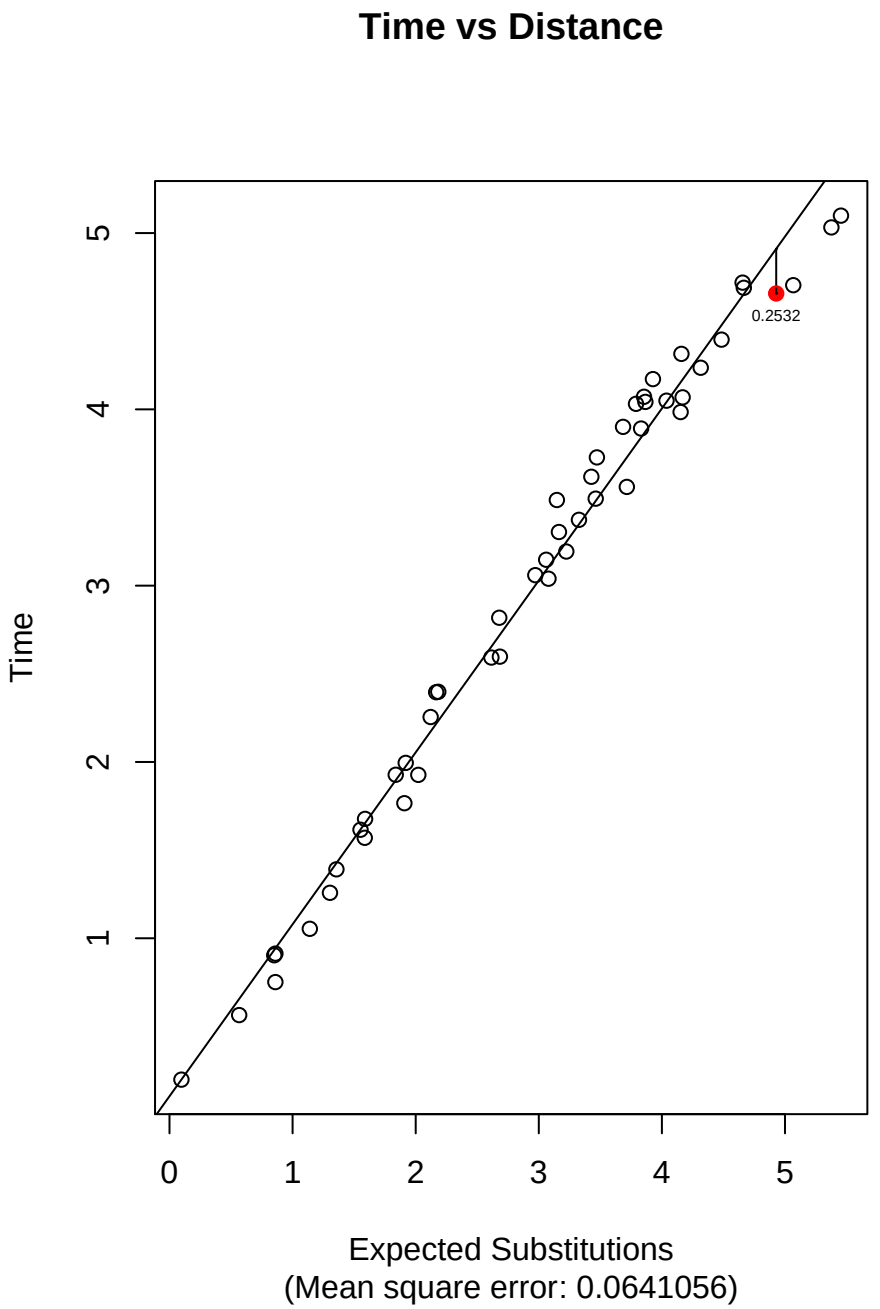

coal: Simulated−no.8 (Remove 1)
u4 t29 0.41956209052182
u35 t20 0.247498329738583
u23 t33 0.246121493161285
u39 t39 1.50888497470668
u41 t35 1.21077090462906
u5 t22 1.52346348057591
u25 t19 0.58673248047065
u1 t46 1.79437148050563
u50 t38 1.57881450162092
u2 t15 0.75650365751626
u30 t34 0.745858847788816
u48 t36 4.01106646283624
u17 t40 4.79766856705015
u14 t14 4.92997061633593
u10 t4 4.71827636535474
u32 t37 3.8790901471453
u15 t44 3.74479706056185
u36 t21 3.89138191504624
u6 t48 3.31096348826178
u13 t25 3.1116659732505
u7 t31 2.56480967470072
u19 t32 2.53859647221491
u34 t50 2.4413145612956
u40 t3 2.76918468453288
u22 t2 3.17381104087538
u9 t24 2.79838224406788
u27 t7 4.81410497161935
???
u38 t28 4.63155694326388
u47 t17 4.50785033550028
u12 t16 4.95797308177608
u43 t49 4.32251161977055
u21 t12 4.5139067079656
u46 t1 4.00954632804387
u33 t47 3.90106422334086
u16 t11 4.43002211596853
u28 t13 4.43754562893219
u18 t5 4.57011716663257
u42 t9 3.98938819026079
u49 t10 4.55968168980834
u29 t45 4.85511534291257
u24 t42 2.2326682242586
u8 t41 1.71176208042349
u31 t23 1.29059012929911
u26 t30 1.17921113880087
u45 t26 1.8737329013589
u37 t6 1.68756144632526
u3 t43 0.702097748967041
u20 t8 0.684999086025397
u11 t18 0.749140745844549

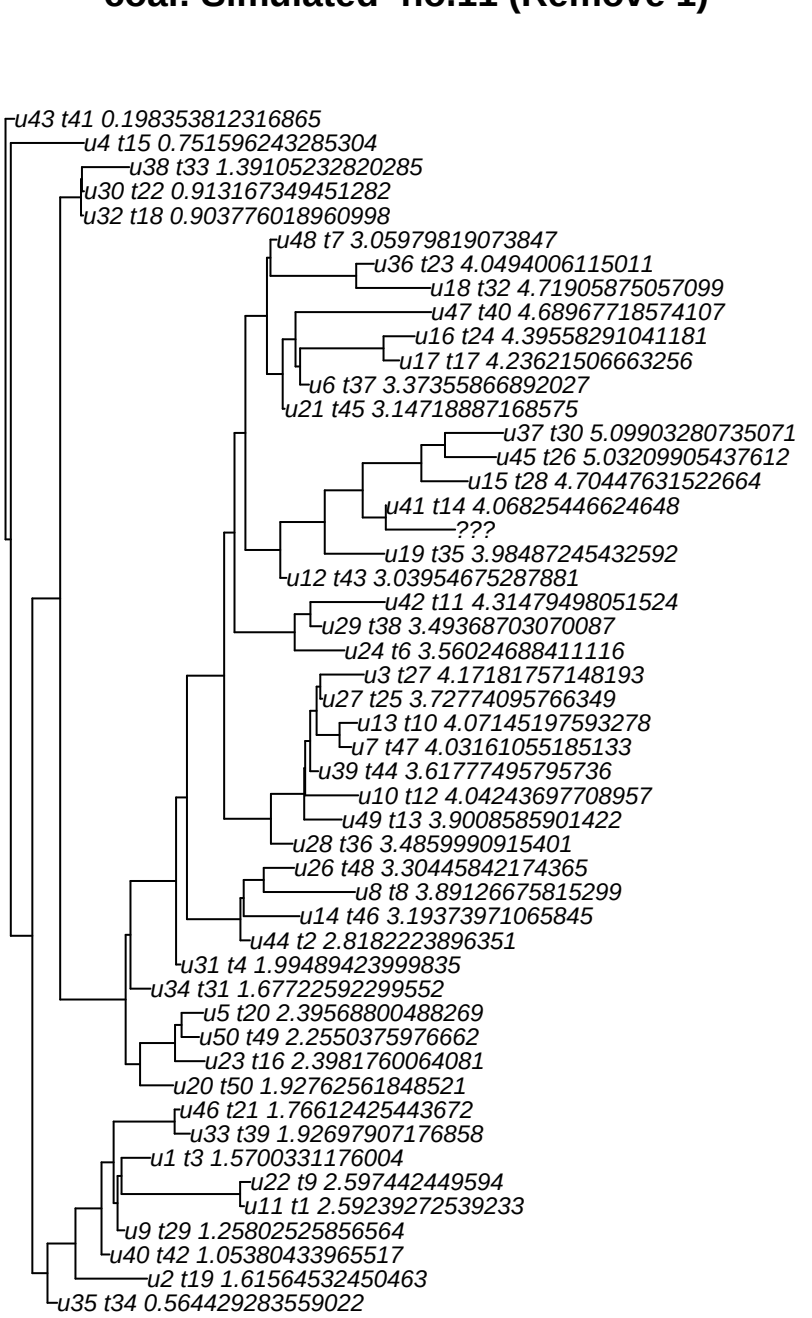

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.832393)
0.9124
0
10
20
30
40
1
2
3
4
5
6

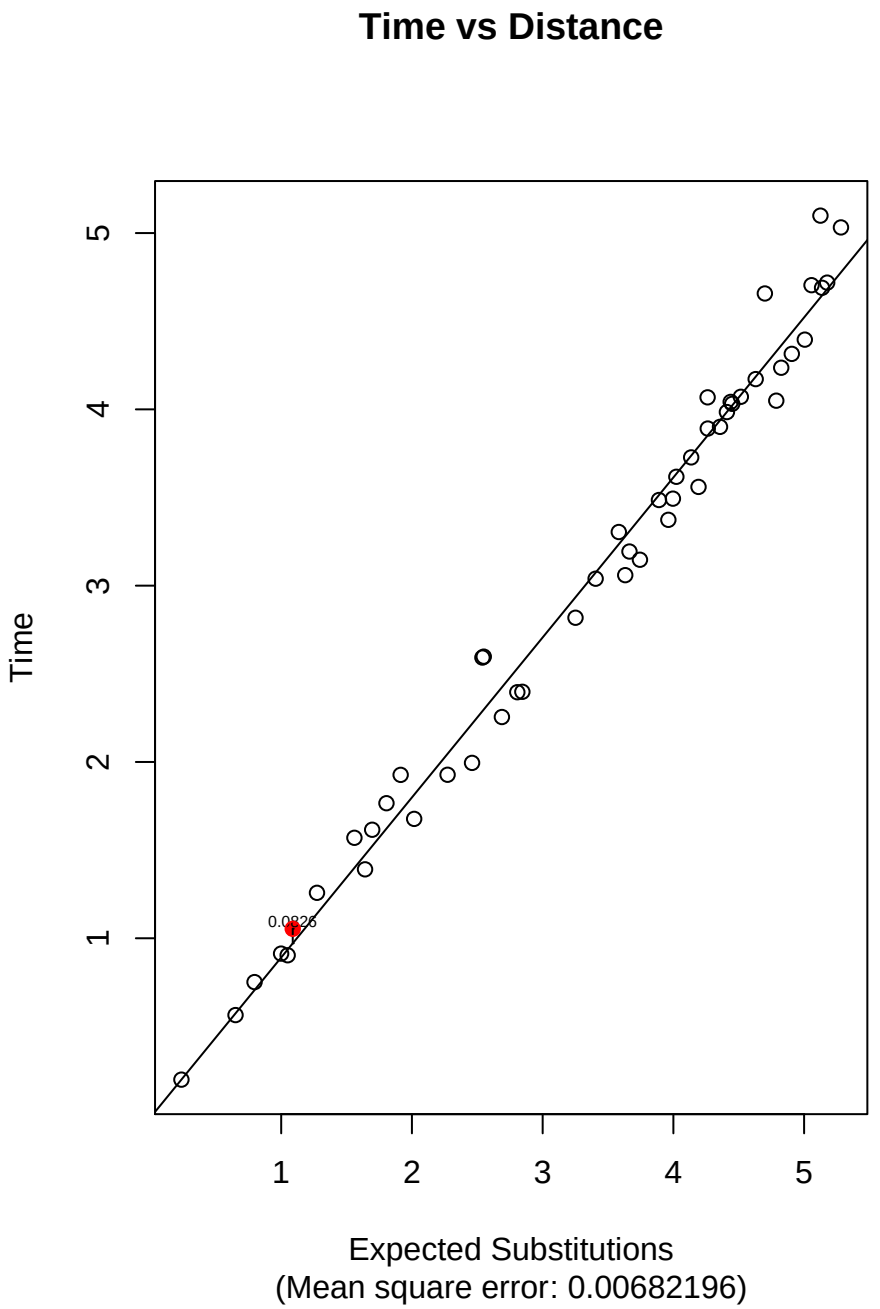

coal: Simulated−no.9 (Remove 1)
u45 t33 1.80472390478921
u2 t4 1.59505704710215
u47 t30 0.504486941575644
u9 t25 1.67775675988153
u7 t28 3.23766242680217
u18 t13 5.92686633047346
u10 t1 5.38725804177856
u36 t14 5.26168490194517
u26 t23 5.11242646737594
u3 t9 4.76180431948211
u20 t37 5.10410733461273
u31 t39 4.97159970185215
u4 t21 5.65364172975515
u5 t6 5.06364427993512
u16 t11 5.35046918322249
u46 t29 4.84905050255587
u19 t34 4.35065774493989
u15 t12 4.07691814633371
u30 t7 4.03361830010156
u17 t17 2.93389670614059
u27 t8 3.27027477143896
u25 t49 1.64974147715017
u12 t3 1.35870214610097
u44 t19 1.11627060278374
u14 t46 1.71523498289066
u24 t15 3.11039064651279
u34 t10 3.26859213725814
u29 t35 3.31723174080989
u50 t26 2.28875540527007
u13 t22 4.8890616799568
u32 t45 5.04218603762866
u35 t38 4.00116129210536
u11 t50 5.26387276556186
u22 t40 6.03432433708552
u39 t5 3.21728300940178
u40 t41 3.06644497319744
u21 t27 3.3468699647419
u42 t24 5.11082267417832
u48 t43 5.90255001356291
u49 t48 5.11010806912915
u28 t47 4.6272721465264
u38 t36 4.46882760029119
u23 t2 4.99624621950288
u33 t20 3.74066126584952
u1 t44 3.78759653254036
u43 t18 4.55909574127469
u6 t42 4.08157634435274
u41 t16 3.15133472195007
???
u8 t32 0.247080521075986

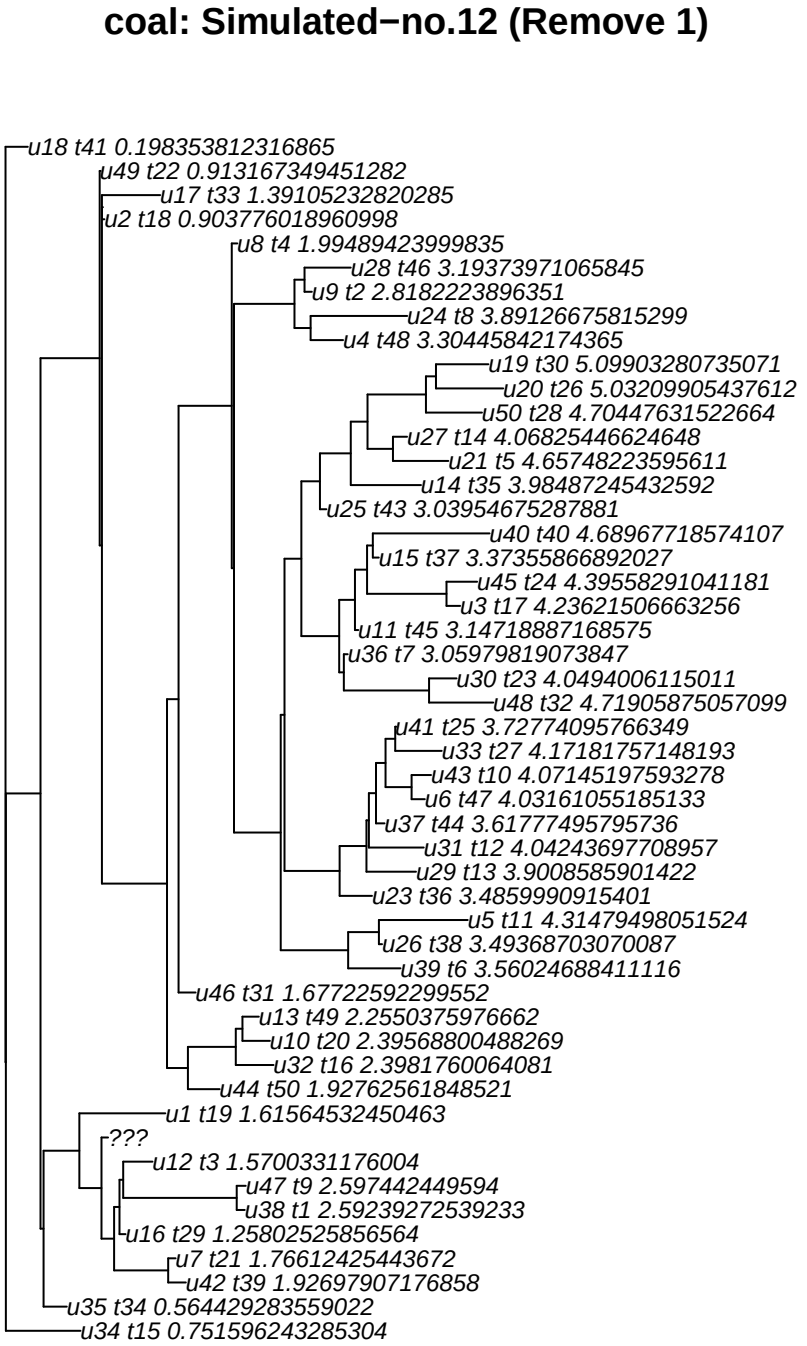

Time vs Distance
Time
0.0
0.5
1.0
1.5
2.0
2.5
3.0
6.07388
Expected Substitutions
(Mean square error: 0.00545867)

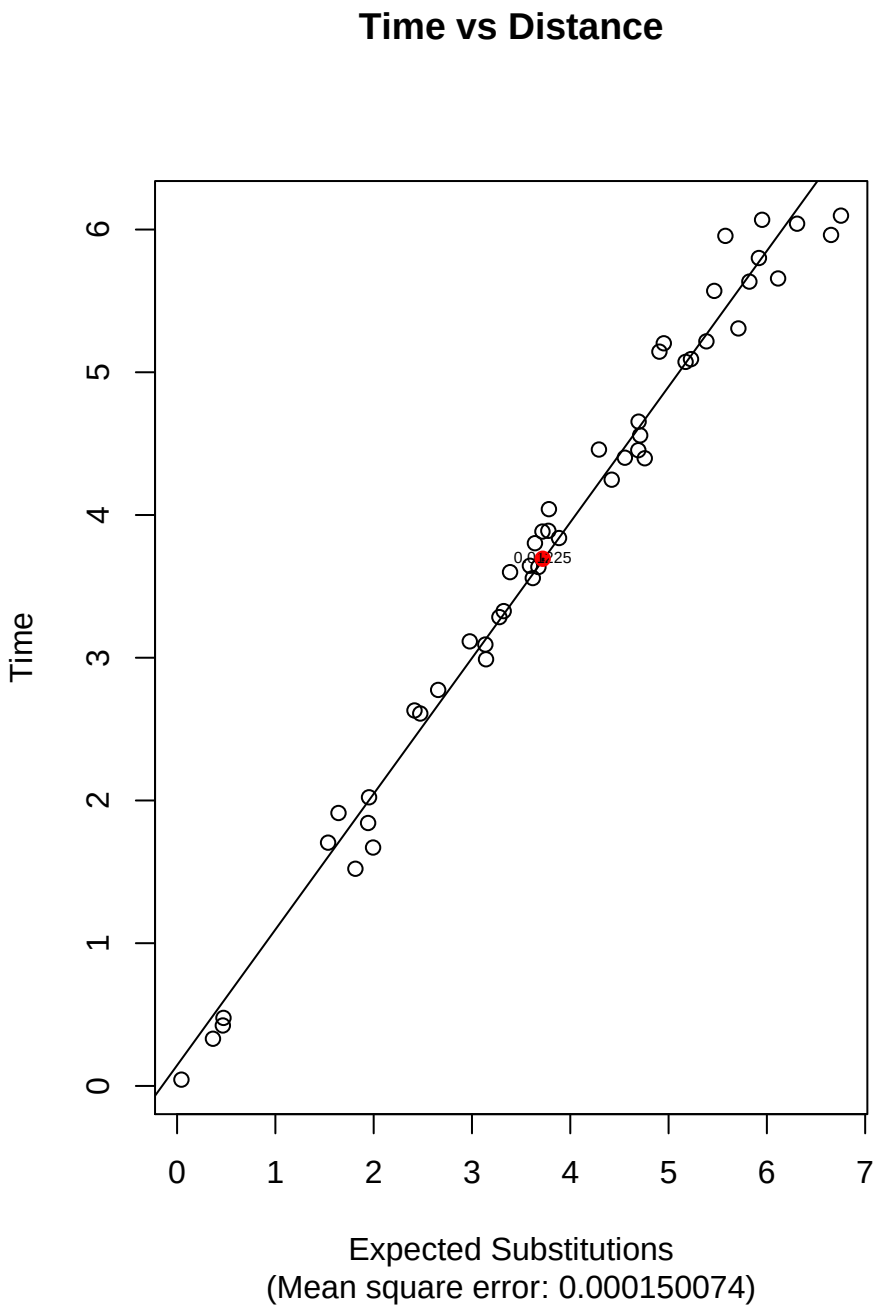

coal: Simulated−no.10 (Remove 1)
u5 t43 0.063424644367373
u32 t36 1.27734946530919
u3 t32 1.3486900883722
u40 t37 0.197974514001987
u10 t15 2.65856368308868
u24 t33 3.04062593231749
u45 t14 2.47956760501321
u15 t44 2.36031049127161
u29 t12 2.15247320308599
u31 t27 2.48338943406335
u48 t41 2.0982936107956
u7 t21 1.62968052765741
u20 t22 1.07744926961784
u37 t29 1.16642189516756
u50 t23 1.30700351853936
u42 t16 1.17548204171066
u35 t3 2.01324164173444
u6 t30 2.25666842630436
u8 t10 2.09314073293886
u19 t49 1.73358364607753
u38 t35 2.19959913321901
u47 t40 2.35301016257076
u39 t5 2.28924828935499
u21 t38 2.09183172308399
u33 t39 2.67070171744528
u28 t46 2.9040728571552
u43 t13 2.81943180474091
u34 t34 2.14571649811389
u25 t2 1.90653193586381
u11 t9 1.0803285139727
???
u1 t4 2.91337847935796
u16 t6 2.5204783548756
u26 t25 2.56910988910679
u14 t48 2.13483744627302
u49 t7 2.14683063653432
u22 t24 1.71179030796198
u41 t50 1.44807007756655
u23 t8 1.07367962257327
u17 t19 0.959394780532967
u27 t11 1.32260855496747
u30 t26 3.00660747136402
u44 t20 2.70731134351428
u36 t17 2.81138986264884
u2 t1 1.72106979880769
u9 t31 3.0649955463175
u12 t18 3.01199498271016
u13 t42 2.56785303886915
u18 t47 2.18485473954791
u46 t45 1.28606709666009

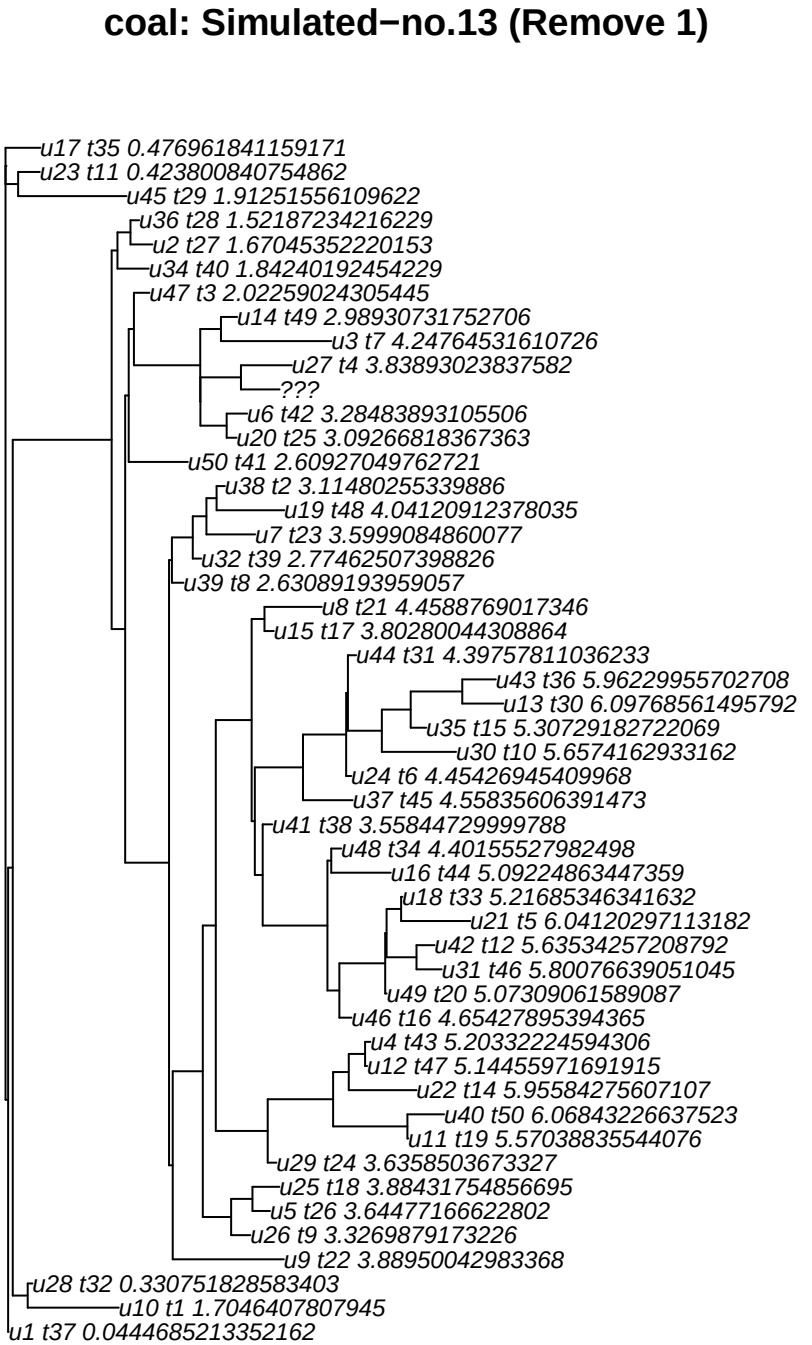

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.0641056)
0.2532
0
1
2
3
4
5

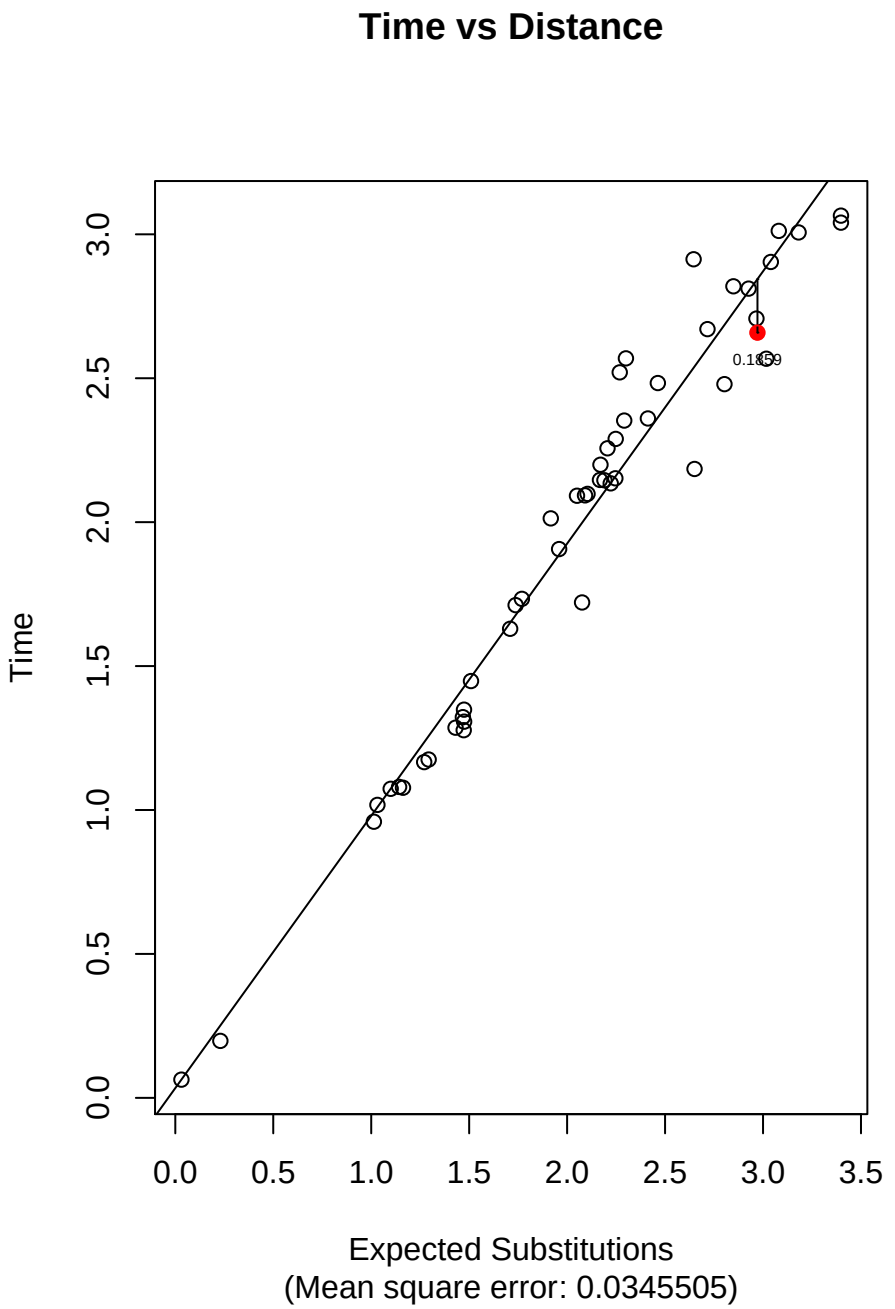

coal: Simulated−no.11 (Remove 1)
u43 t41 0.198353812316865
u4 t15 0.751596243285304
u38 t33 1.39105232820285
u30 t22 0.913167349451282
u32 t18 0.903776018960998
u48 t7 3.05979819073847
u36 t23 4.0494006115011
u18 t32 4.71905875057099
u47 t40 4.68967718574107
u16 t24 4.39558291041181
u17 t17 4.23621506663256
u6 t37 3.37355866892027
u21 t45 3.14718887168575
u37 t30 5.09903280735071
u45 t26 5.03209905437612
u15 t28 4.70447631522664
u41 t14 4.06825446624648
???
u19 t35 3.98487245432592
u12 t43 3.03954675287881
u42 t11 4.31479498051524
u29 t38 3.49368703070087
u24 t6 3.56024688411116
u3 t27 4.17181757148193
u27 t25 3.72774095766349
u13 t10 4.07145197593278
u7 t47 4.03161055185133
u39 t44 3.61777495795736
u10 t12 4.04243697708957
u49 t13 3.9008585901422
u28 t36 3.4859990915401
u26 t48 3.30445842174365
u8 t8 3.89126675815299
u14 t46 3.19373971065845
u44 t2 2.8182223896351
u31 t4 1.99489423999835
u34 t31 1.67722592299552
u5 t20 2.39568800488269
u50 t49 2.2550375976662
u23 t16 2.3981760064081
u20 t50 1.92762561848521
u46 t21 1.76612425443672
u33 t39 1.92697907176858
u1 t3 1.5700331176004
u22 t9 2.597442449594
u11 t1 2.59239272539233
u9 t29 1.25802525856564
u40 t42 1.05380433965517
u2 t19 1.61564532450463
u35 t34 0.564429283559022

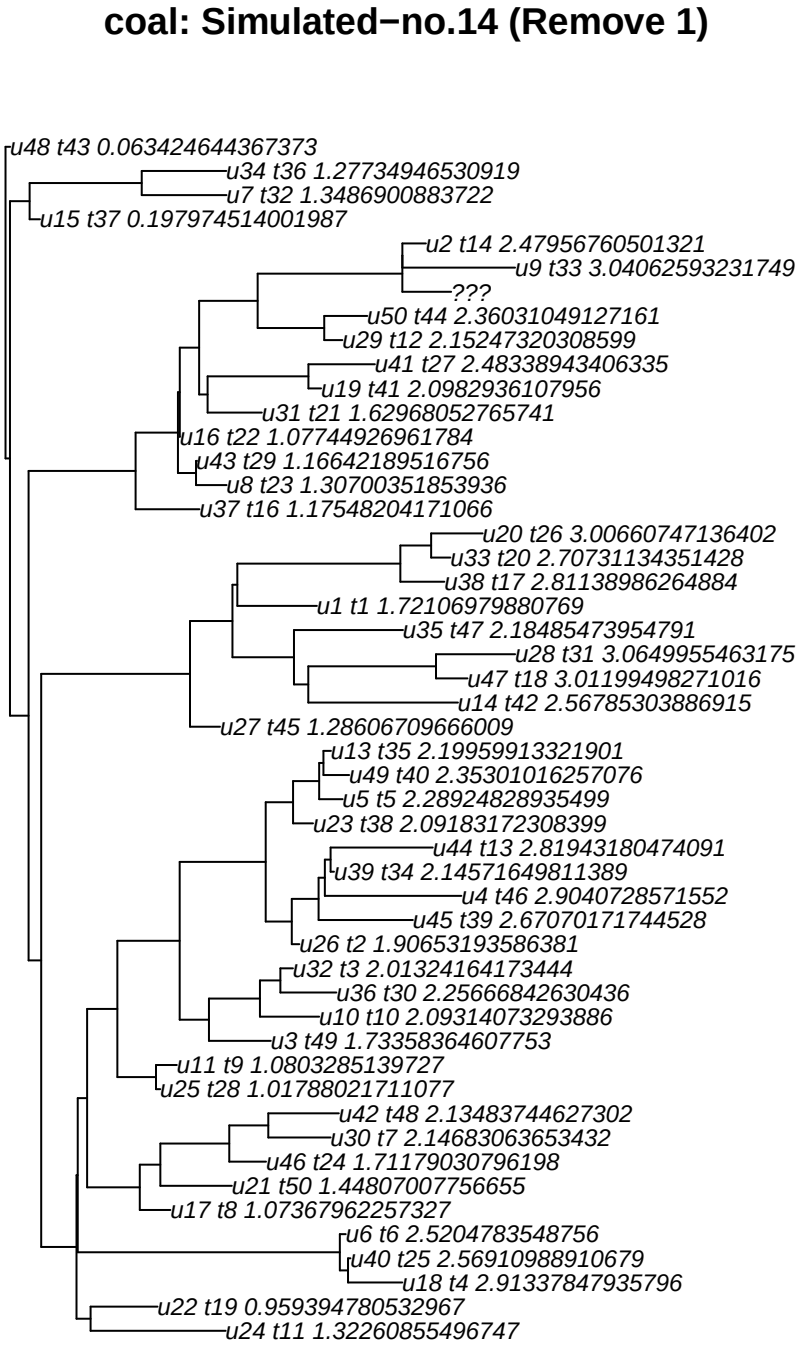

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.00682196)
1
2
3
4
5

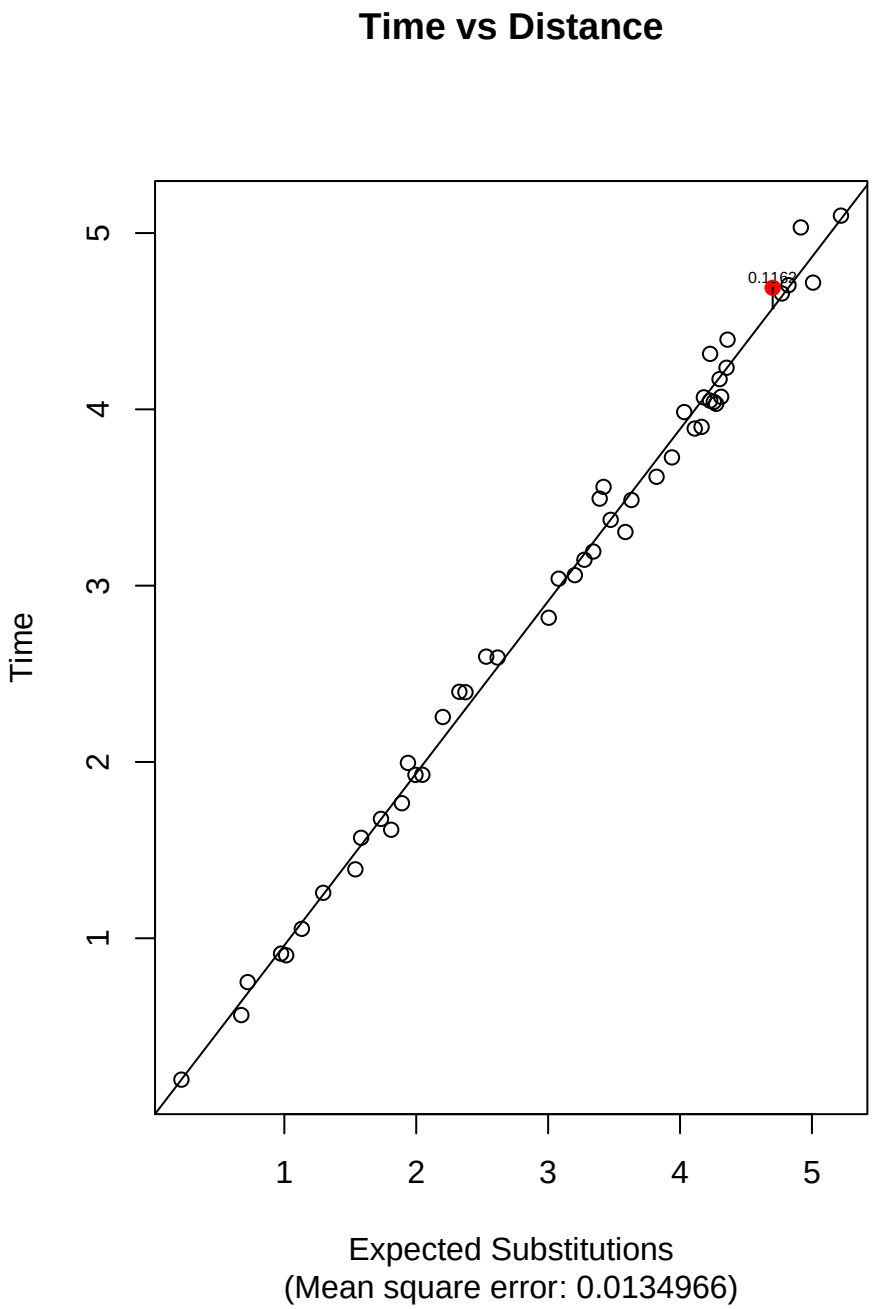

coal: Simulated−no.12 (Remove 1)
u18 t41 0.198353812316865
u49 t22 0.913167349451282
u17 t33 1.39105232820285
u2 t18 0.903776018960998
u8 t4 1.99489423999835
u28 t46 3.19373971065845
u9 t2 2.8182223896351
u24 t8 3.89126675815299
u4 t48 3.30445842174365
u19 t30 5.09903280735071
u20 t26 5.03209905437612
u50 t28 4.70447631522664
u27 t14 4.06825446624648
u21 t5 4.65748223595611
u14 t35 3.98487245432592
u25 t43 3.03954675287881
u40 t40 4.68967718574107
u15 t37 3.37355866892027
u45 t24 4.39558291041181
u3 t17 4.23621506663256
u11 t45 3.14718887168575
u36 t7 3.05979819073847
u30 t23 4.0494006115011
u48 t32 4.71905875057099
u41 t25 3.72774095766349
u33 t27 4.17181757148193
u43 t10 4.07145197593278
u6 t47 4.03161055185133
u37 t44 3.61777495795736
u31 t12 4.04243697708957
u29 t13 3.9008585901422
u23 t36 3.4859990915401
u5 t11 4.31479498051524
u26 t38 3.49368703070087
u39 t6 3.56024688411116
u46 t31 1.67722592299552
u13 t49 2.2550375976662
u10 t20 2.39568800488269
u32 t16 2.3981760064081
u44 t50 1.92762561848521
u1 t19 1.61564532450463
???
u12 t3 1.5700331176004
u47 t9 2.597442449594
u38 t1 2.59239272539233
u16 t29 1.25802525856564
u7 t21 1.76612425443672
u42 t39 1.92697907176858
u35 t34 0.564429283559022
u34 t15 0.751596243285304

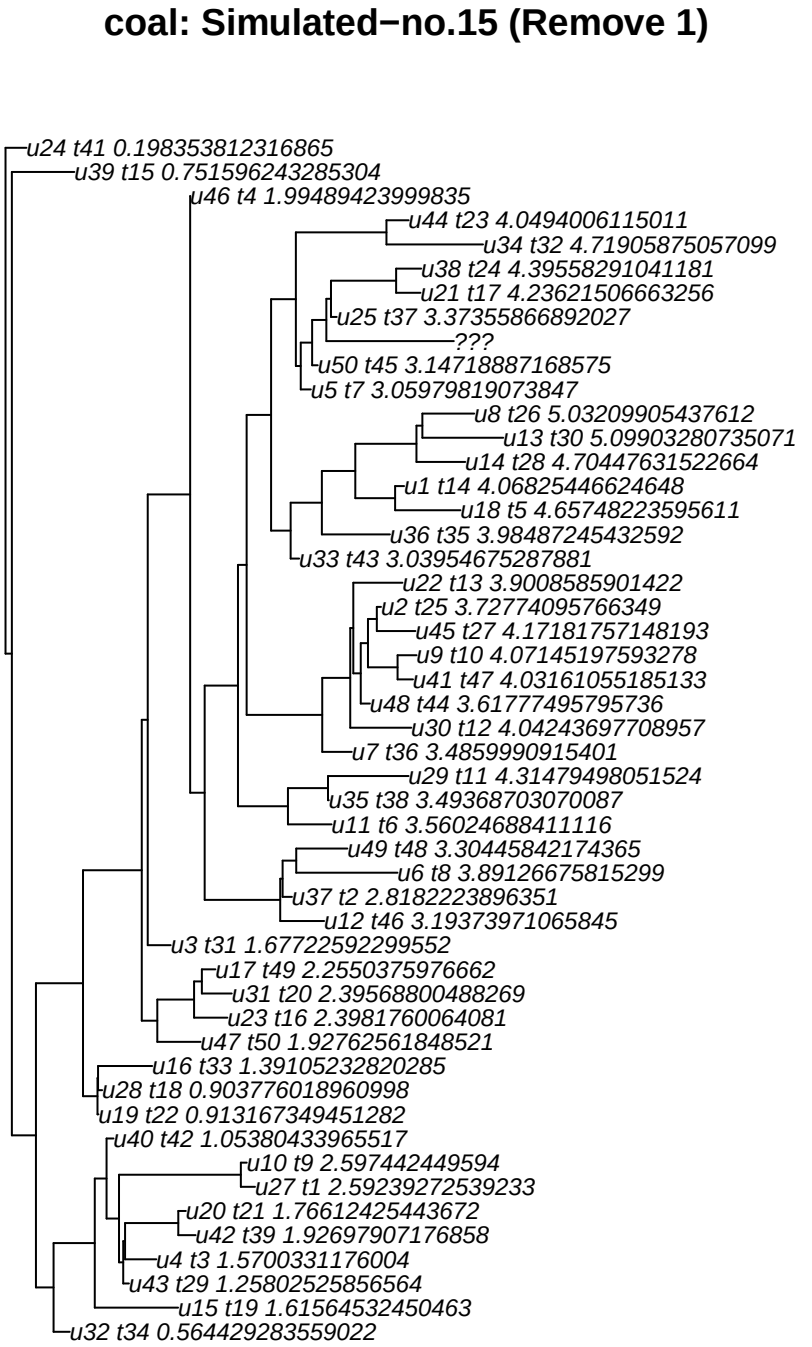

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.000150074)
0
1
2
3
4
5
6
7

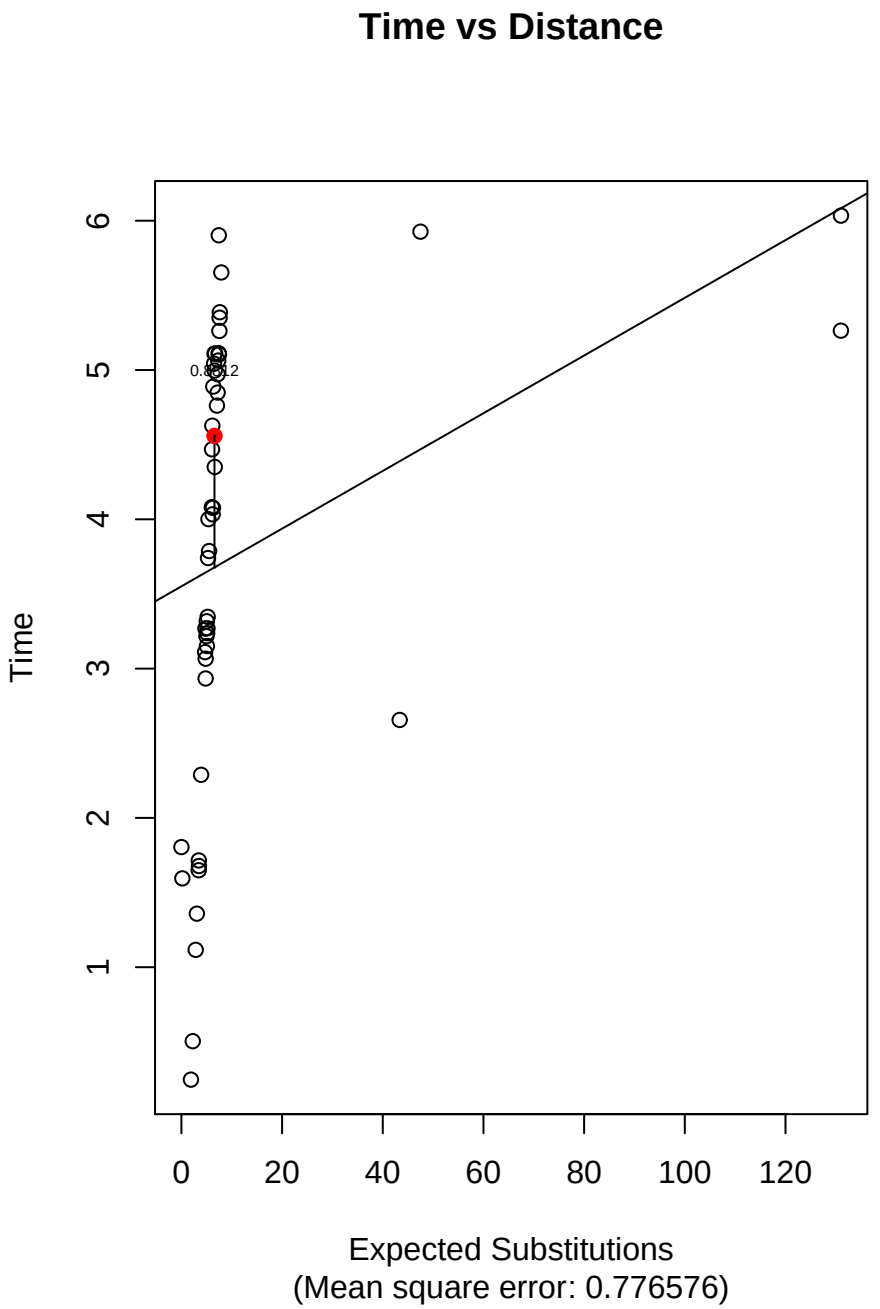

coal: Simulated−no.13 (Remove 1)
u17 t35 0.476961841159171
u23 t11 0.423800840754862
u45 t29 1.91251556109622
u36 t28 1.52187234216229
u2 t27 1.67045352220153
u34 t40 1.84240192454229
u47 t3 2.02259024305445
u14 t49 2.98930731752706
u3 t7 4.24764531610726
u27 t4 3.83893023837582
???
u6 t42 3.28483893105506
u20 t25 3.09266818367363
u50 t41 2.60927049762721
u38 t2 3.11480255339886
u19 t48 4.04120912378035
u7 t23 3.5999084860077
u32 t39 2.77462507398826
u39 t8 2.63089193959057
u8 t21 4.4588769017346
u15 t17 3.80280044308864
u44 t31 4.39757811036233
u43 t36 5.96229955702708
u13 t30 6.09768561495792
u35 t15 5.30729182722069
u30 t10 5.6574162933162
u24 t6 4.45426945409968
u37 t45 4.55835606391473
u41 t38 3.55844729999788
u48 t34 4.40155527982498
u16 t44 5.09224863447359
u18 t33 5.21685346341632
u21 t5 6.04120297113182
u42 t12 5.63534257208792
u31 t46 5.80076639051045
u49 t20 5.07309061589087
u46 t16 4.65427895394365
u4 t43 5.20332224594306
u12 t47 5.14455971691915
u22 t14 5.95584275607107
u40 t50 6.06843226637523
u11 t19 5.57038835544076
u29 t24 3.6358503673327
u25 t18 3.88431754856695
u5 t26 3.64477166622802
u26 t9 3.3269879173226
u9 t22 3.88950042983368
u28 t32 0.330751828583403
u10 t1 1.7046407807945
u1 t37 0.0444685213352162


Time vs Distance
Time
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
Expected Substitutions
(Mean square error: 0.0345505)

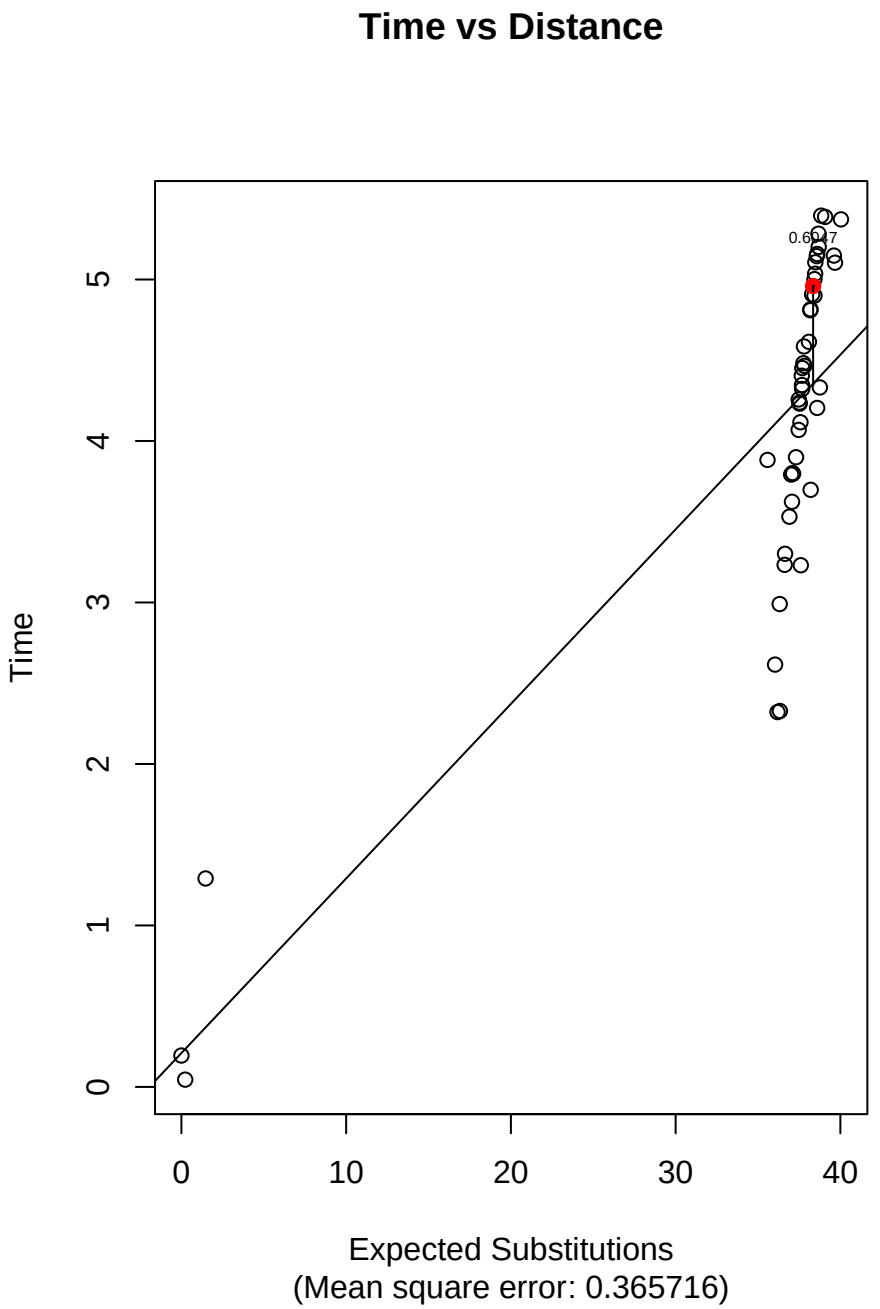

coal: Simulated−no.14 (Remove 1)
u48 t43 0.063424644367373
u34 t36 1.27734946530919
u7 t32 1.3486900883722
u15 t37 0.197974514001987
u2 t14 2.47956760501321
u9 t33 3.04062593231749
???
u50 t44 2.36031049127161
u29 t12 2.15247320308599
u41 t27 2.48338943406335
u19 t41 2.0982936107956
u31 t21 1.62968052765741
u16 t22 1.07744926961784
u43 t29 1.16642189516756
u8 t23 1.30700351853936
u37 t16 1.17548204171066
u20 t26 3.00660747136402
u33 t20 2.70731134351428
u38 t17 2.81138986264884
u1 t1 1.72106979880769
u35 t47 2.18485473954791
u28 t31 3.0649955463175
u47 t18 3.01199498271016
u14 t42 2.56785303886915
u27 t45 1.28606709666009
u13 t35 2.19959913321901
u49 t40 2.35301016257076
u5 t5 2.28924828935499
u23 t38 2.09183172308399
u44 t13 2.81943180474091
u39 t34 2.14571649811389
u4 t46 2.9040728571552
u45 t39 2.67070171744528
u26 t2 1.90653193586381
u32 t3 2.01324164173444
u36 t30 2.25666842630436
u10 t10 2.09314073293886
u3 t49 1.73358364607753
u11 t9 1.0803285139727
u25 t28 1.01788021711077
u42 t48 2.13483744627302
u30 t7 2.14683063653432
u46 t24 1.71179030796198
u21 t50 1.44807007756655
u17 t8 1.07367962257327
u6 t6 2.5204783548756
u40 t25 2.56910988910679
u18 t4 2.91337847935796
u22 t19 0.959394780532967
u24 t11 1.32260855496747

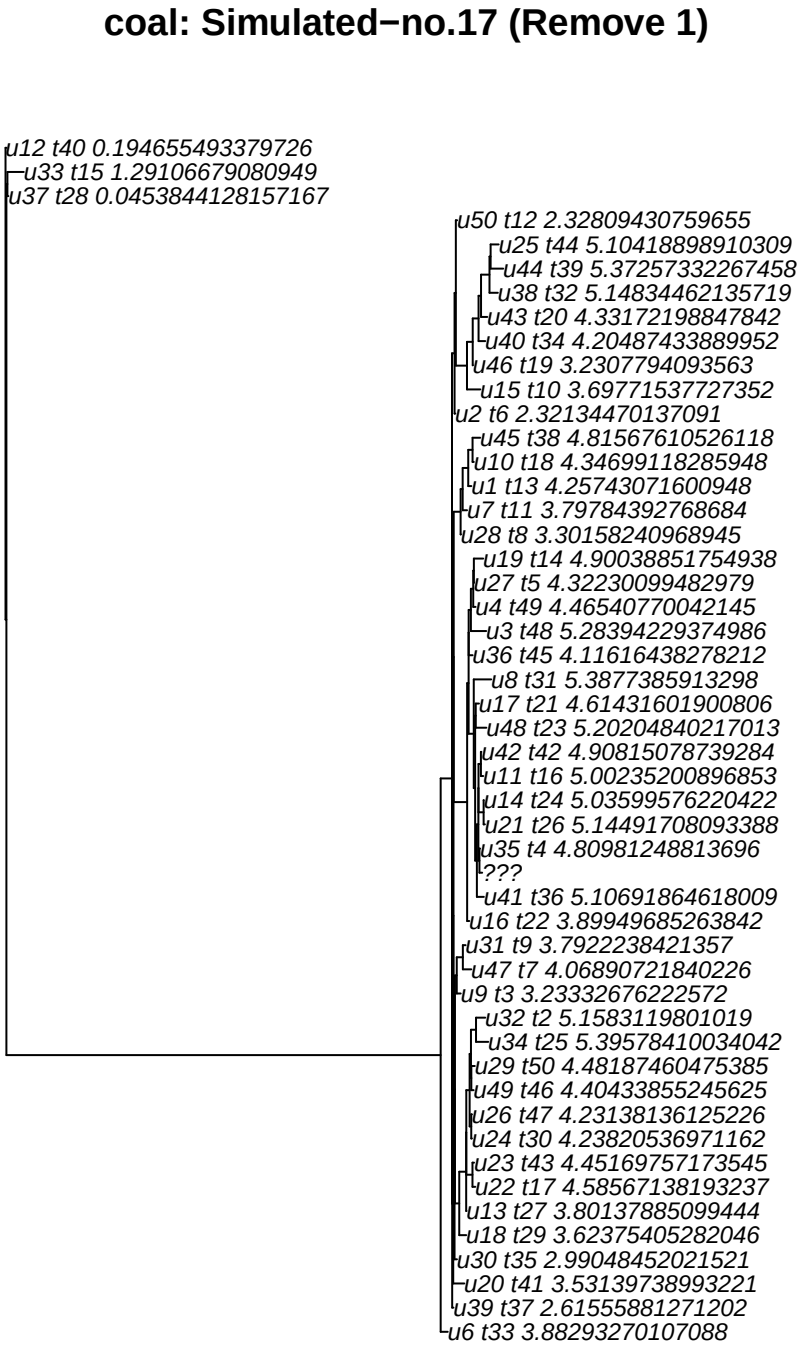

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.0134966)
1
2
3
4
5

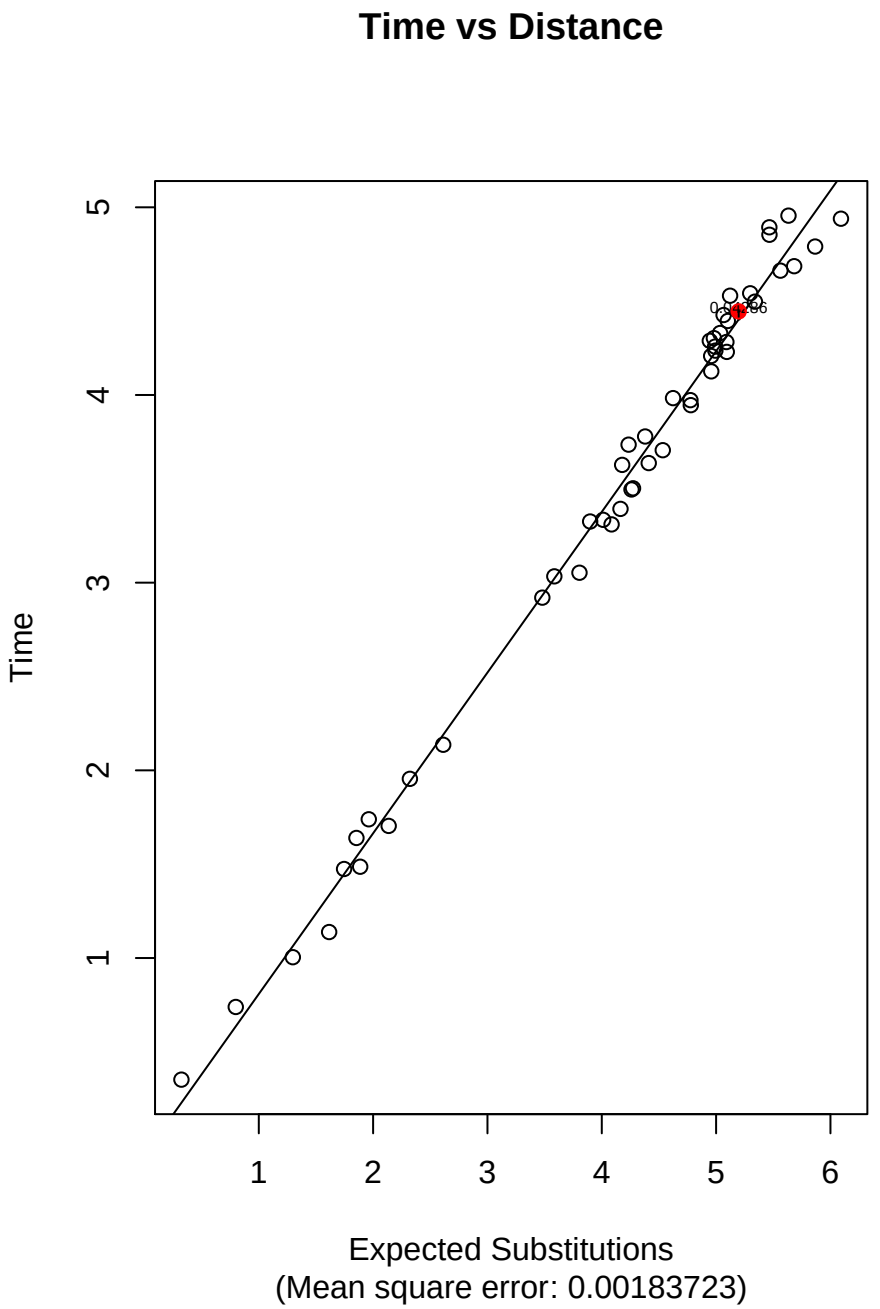

coal: Simulated−no.15 (Remove 1)
u24 t41 0.198353812316865
u39 t15 0.751596243285304
u46 t4 1.99489423999835
u44 t23 4.0494006115011
u34 t32 4.71905875057099
u38 t24 4.39558291041181
u21 t17 4.23621506663256
u25 t37 3.37355866892027
???
u50 t45 3.14718887168575
u5 t7 3.05979819073847
u8 t26 5.03209905437612
u13 t30 5.09903280735071
u14 t28 4.70447631522664
u1 t14 4.06825446624648
u18 t5 4.65748223595611
u36 t35 3.98487245432592
u33 t43 3.03954675287881
u22 t13 3.9008585901422
u2 t25 3.72774095766349
u45 t27 4.17181757148193
u9 t10 4.07145197593278
u41 t47 4.03161055185133
u48 t44 3.61777495795736
u30 t12 4.04243697708957
u7 t36 3.4859990915401
u29 t11 4.31479498051524
u35 t38 3.49368703070087
u11 t6 3.56024688411116
u49 t48 3.30445842174365
u6 t8 3.89126675815299
u37 t2 2.8182223896351
u12 t46 3.19373971065845
u3 t31 1.67722592299552
u17 t49 2.2550375976662
u31 t20 2.39568800488269
u23 t16 2.3981760064081
u47 t50 1.92762561848521
u16 t33 1.39105232820285
u28 t18 0.903776018960998
u19 t22 0.913167349451282
u40 t42 1.05380433965517
u10 t9 2.597442449594
u27 t1 2.59239272539233
u20 t21 1.76612425443672
u42 t39 1.92697907176858
u4 t3 1.5700331176004
u43 t29 1.25802525856564
u15 t19 1.61564532450463
u32 t34 0.564429283559022

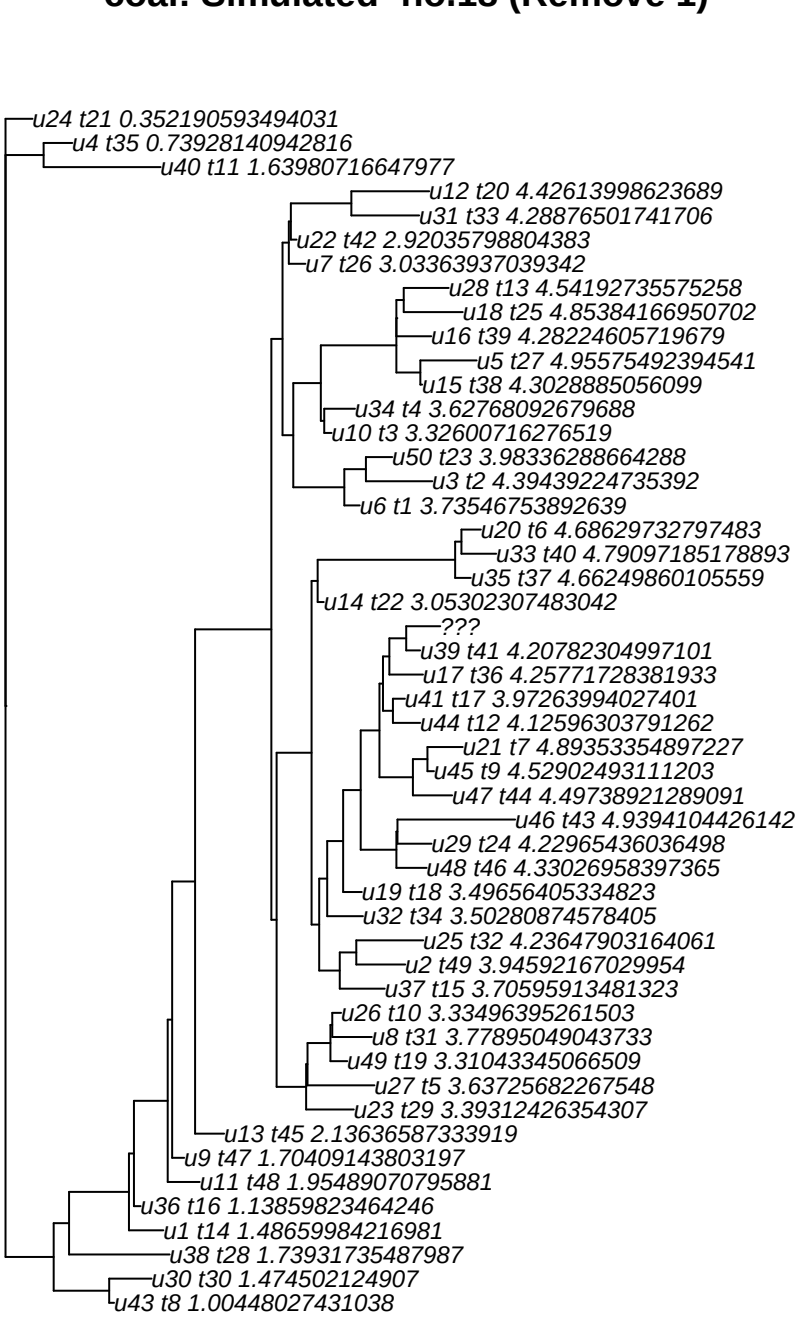

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.776576)
0
20
40
60
80
100
120
1
2
3
4
5
6

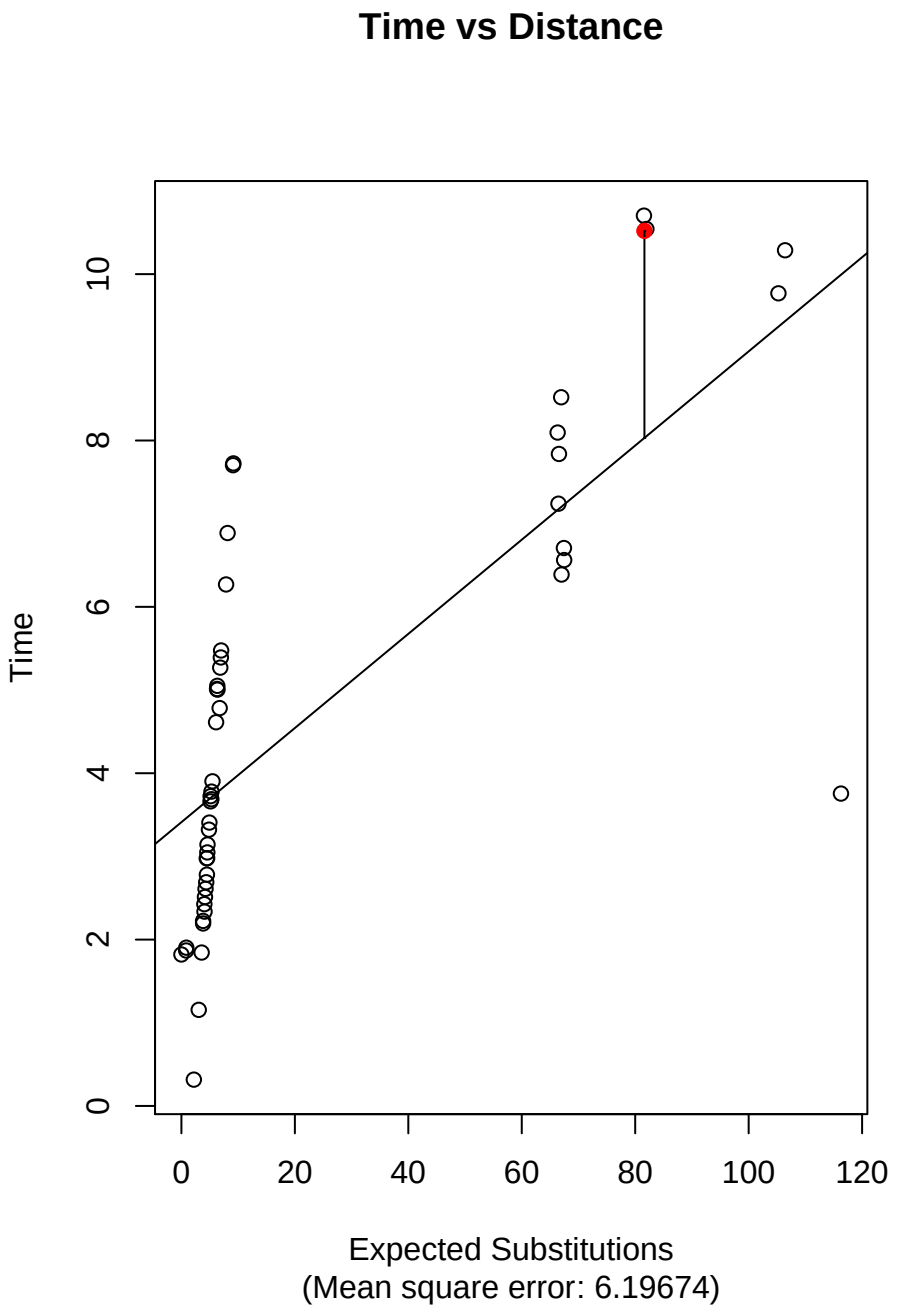
coal: Simulated−no.16 (Remove 1)
u28 t33 1.80472390478921
u11 t30 0.504486941575644
u39 t34 4.35065774493989
u41 t29 4.84905050255587
u38 t39 4.97159970185215
u26 t13 5.92686633047346
u14 t6 5.06364427993512
u40 t21 5.65364172975515
u10 t11 5.35046918322249
u20 t1 5.38725804177856
u47 t14 5.26168490194517
u29 t23 5.11242646737594
u22 t9 4.76180431948211
u32 t37 5.10410733461273
u25 t12 4.07691814633371
u19 t7 4.03361830010156
u33 t28 3.23766242680217
u37 t8 3.27027477143896
u27 t17 2.93389670614059
u23 t25 1.67775675988153
u9 t49 1.64974147715017
u43 t3 1.35870214610097
u44 t46 1.71523498289066
u21 t19 1.11627060278374
???
u15 t42 4.08157634435274
u3 t16 3.15133472195007
u13 t24 5.11082267417832
u46 t43 5.90255001356291
u48 t47 4.6272721465264
u8 t48 5.11010806912915
u35 t2 4.99624621950288
u36 t36 4.46882760029119
u16 t20 3.74066126584952
u4 t44 3.78759653254036
u1 t5 3.21728300940178
u31 t41 3.06644497319744
u42 t27 3.3468699647419
u6 t31 2.65617643872884
u24 t40 6.03432433708552
u2 t50 5.26387276556186
u5 t22 4.8890616799568
u50 t45 5.04218603762866
u17 t38 4.00116129210536
u30 t10 3.26859213725814
u49 t15 3.11039064651279
u45 t35 3.31723174080989
u18 t26 2.28875540527007
u34 t32 0.247080521075986
u7 t4 1.59505704710215

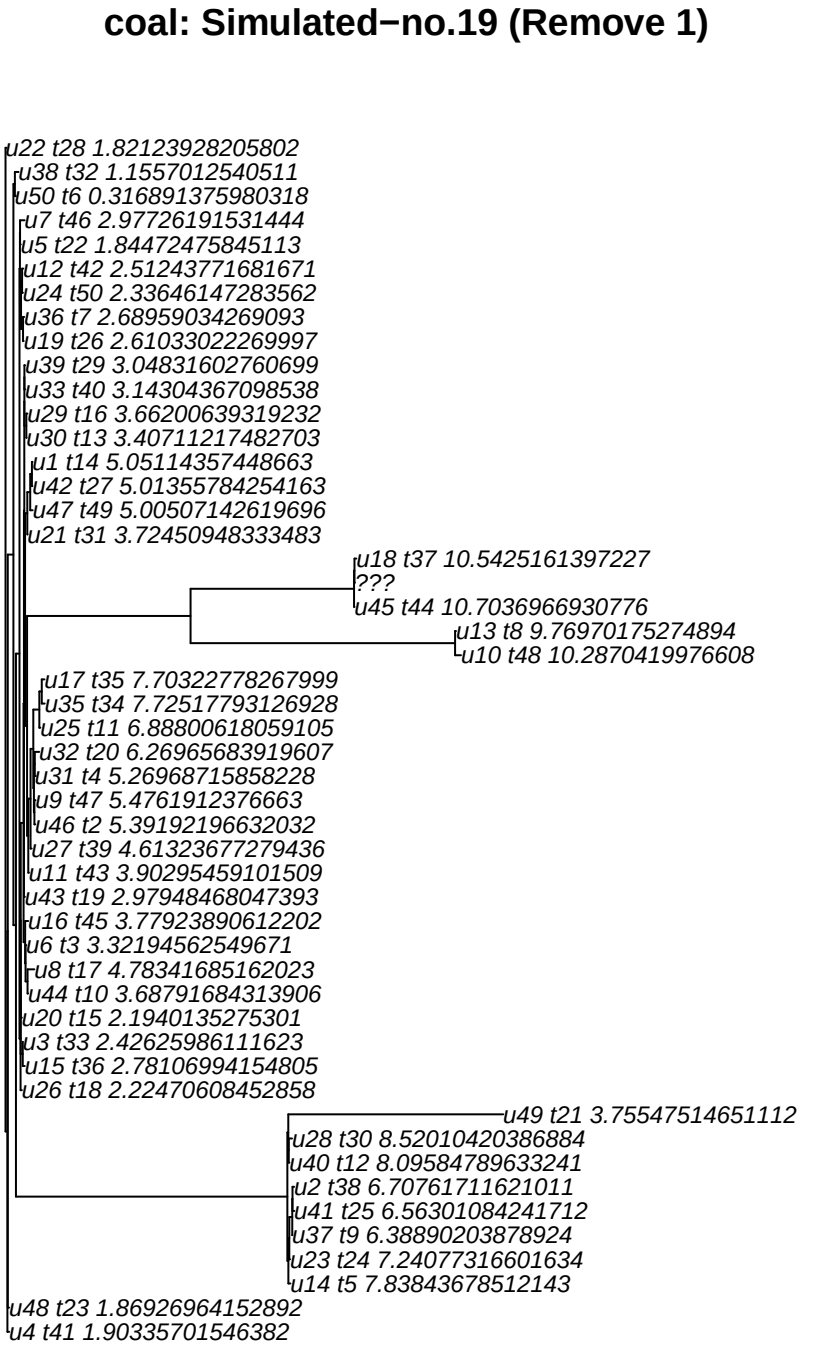

Time vs Distance
0.6047
Time
0
1
2
3
4
5
0
10
20
30
40
Expected Substitutions
(Mean square error: 0.365716)

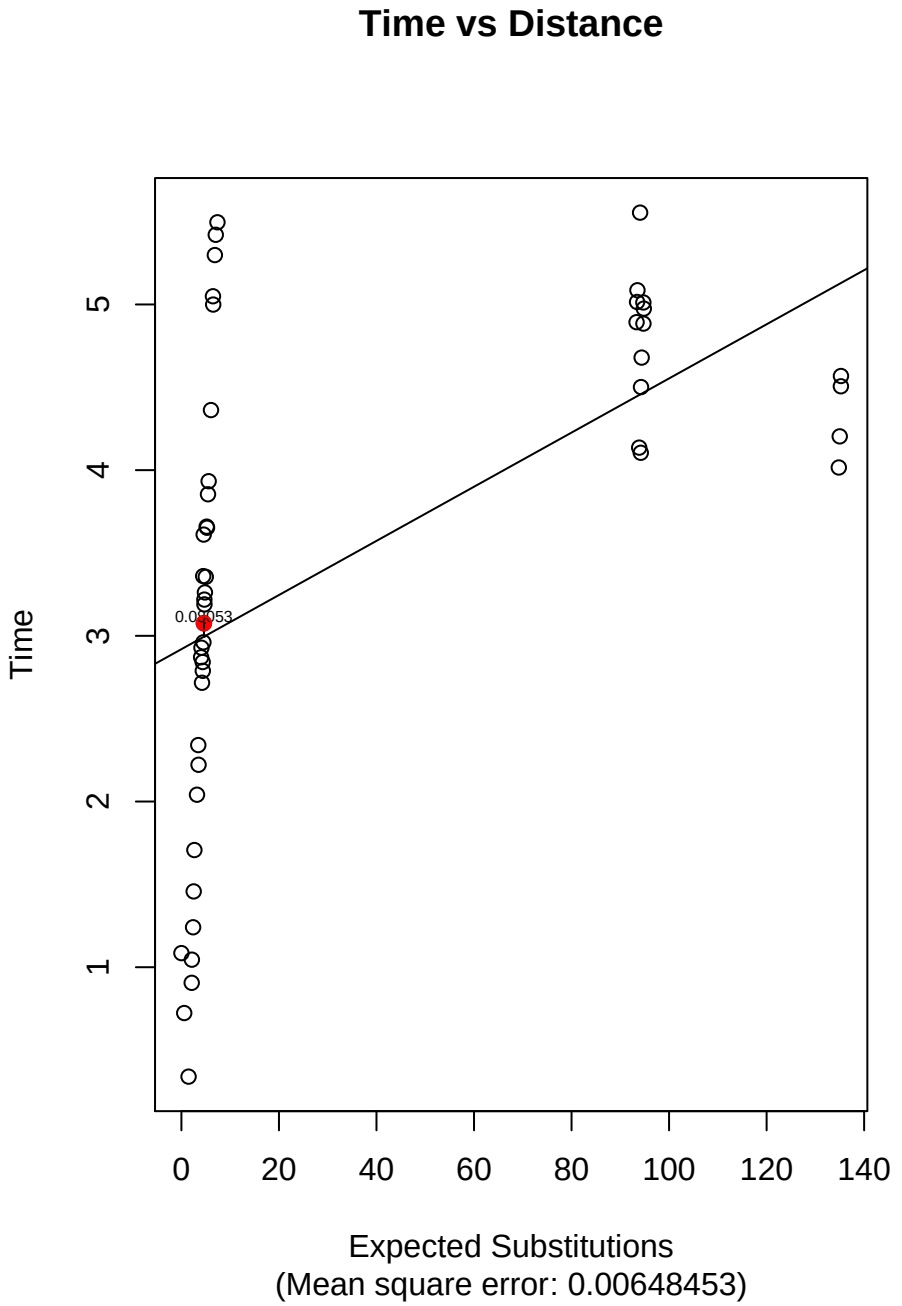

coal: Simulated−no.17 (Remove 1)
u12 t40 0.194655493379726
u33 t15 1.29106679080949
u37 t28 0.0453844128157167
u50 t12 2.32809430759655
u25 t44 5.10418898910309
u44 t39 5.37257332267458
u38 t32 5.14834462135719
u43 t20 4.33172198847842
u40 t34 4.20487433889952
u46 t19 3.2307794093563
u15 t10 3.69771537727352
u2 t6 2.32134470137091
u45 t38 4.81567610526118
u10 t18 4.34699118285948
u1 t13 4.25743071600948
u7 t11 3.79784392768684
u28 t8 3.30158240968945
u19 t14 4.90038851754938
u27 t5 4.32230099482979
u4 t49 4.46540770042145
u3 t48 5.28394229374986
u36 t45 4.11616438278212
u8 t31 5.3877385913298
u17 t21 4.61431601900806
u48 t23 5.20204840217013
u42 t42 4.90815078739284
u11 t16 5.00235200896853
u14 t24 5.03599576220422
u21 t26 5.14491708093388
u35 t4 4.80981248813696
???
u41 t36 5.10691864618009
u16 t22 3.89949685263842
u31 t9 3.7922238421357
u47 t7 4.06890721840226
u9 t3 3.23332676222572
u32 t2 5.1583119801019
u34 t25 5.39578410034042
u29 t50 4.48187460475385
u49 t46 4.40433855245625
u26 t47 4.23138136125226
u24 t30 4.23820536971162
u23 t43 4.45169757173545
u22 t17 4.58567138193237
u13 t27 3.80137885099444
u18 t29 3.62375405282046
u30 t35 2.99048452021521
u20 t41 3.53139738993221
u39 t37 2.61555881271202
u6 t33 3.88293270107088

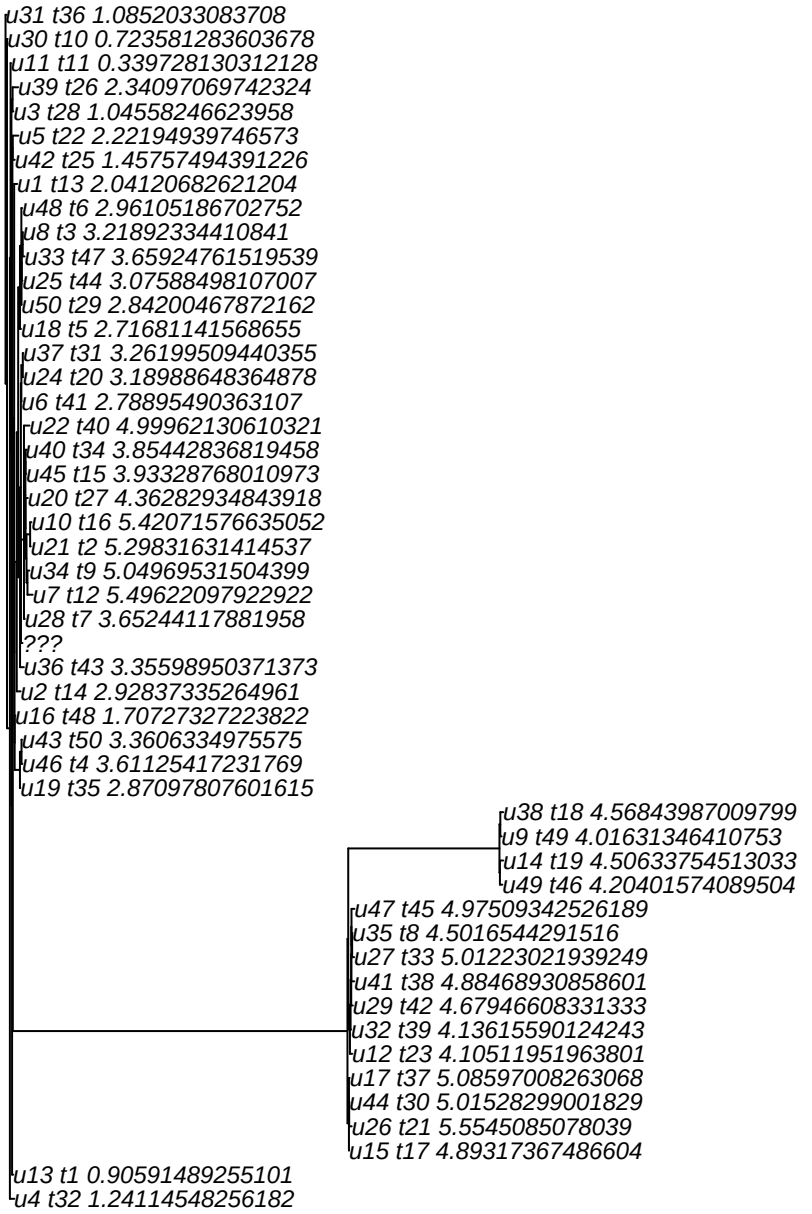

Time vs Distance
Time
1
2
3
4
5
6
Expected Substitutions
(Mean square error: 0.00183723)

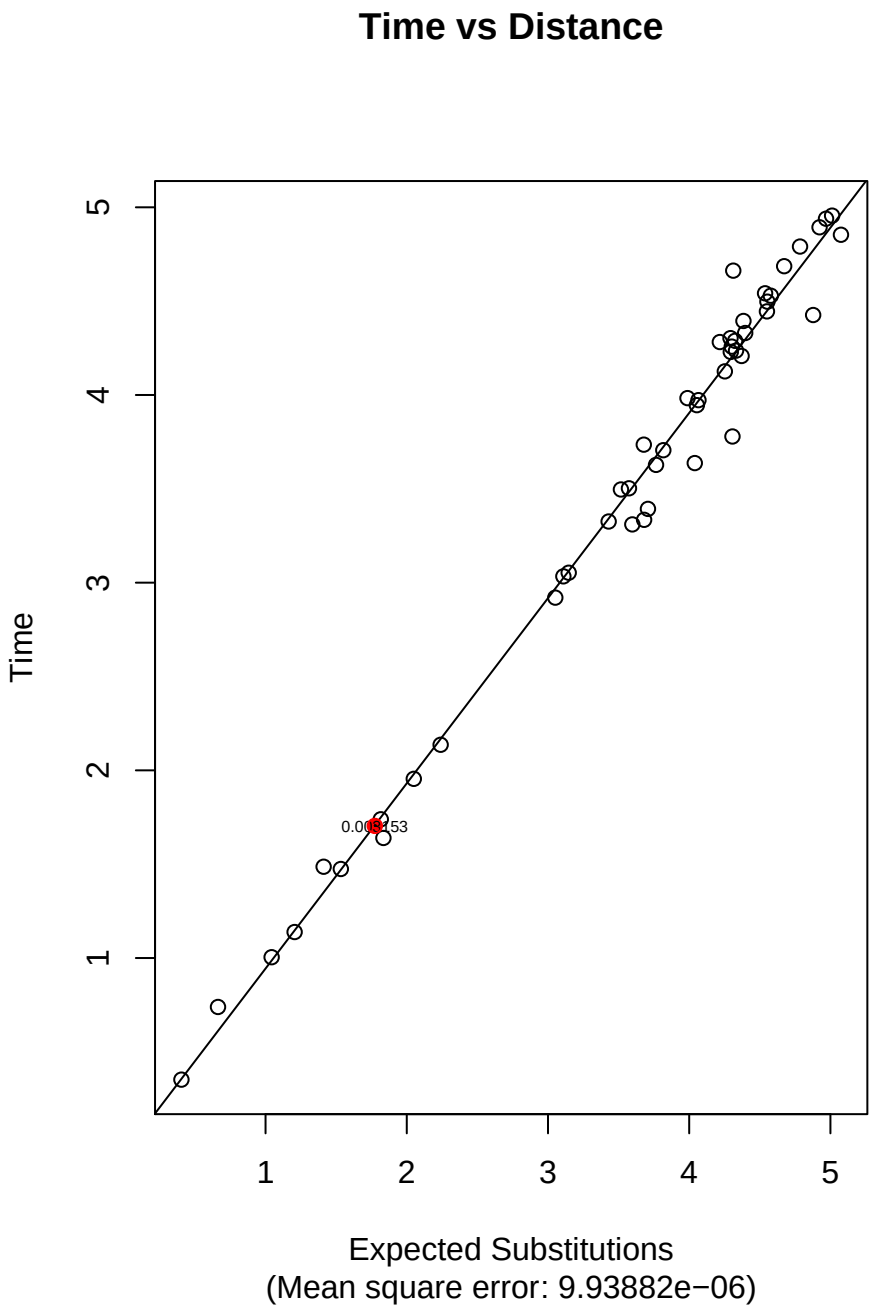

coal: Simulated−no.18 (Remove 1)
u24 t21 0.352190593494031
u4 t35 0.73928140942816
u40 t11 1.63980716647977
u12 t20 4.42613998623689
u31 t33 4.28876501741706
u22 t42 2.92035798804383
u7 t26 3.03363937039342
u28 t13 4.54192735575258
u18 t25 4.85384166950702
u16 t39 4.28224605719679
u5 t27 4.95575492394541
u15 t38 4.3028885056099
u34 t4 3.62768092679688
u10 t3 3.32600716276519
u50 t23 3.98336288664288
u3 t2 4.39439224735392
u6 t1 3.73546753892639
u20 t6 4.68629732797483
u33 t40 4.79097185178893
u35 t37 4.66249860105559
u14 t22 3.05302307483042
???
u39 t41 4.20782304997101
u17 t36 4.25771728381933
u41 t17 3.97263994027401
u44 t12 4.12596303791262
u21 t7 4.89353354897227
u45 t9 4.52902493111203
u47 t44 4.49738921289091
u46 t43 4.9394104426142
u29 t24 4.22965436036498
u48 t46 4.33026958397365
u19 t18 3.49656405334823
u32 t34 3.50280874578405
u25 t32 4.23647903164061
u2 t49 3.94592167029954
u37 t15 3.70595913481323
u26 t10 3.33496395261503
u8 t31 3.77895049043733
u49 t19 3.31043345066509
u27 t5 3.63725682267548
u23 t29 3.39312426354307
u13 t45 2.13636587333919
u9 t47 1.70409143803197
u11 t48 1.95489070795881
u36 t16 1.13859823464246
u1 t14 1.48659984216981
u38 t28 1.73931735487987
u30 t30 1.474502124907
u43 t8 1.00448027431038

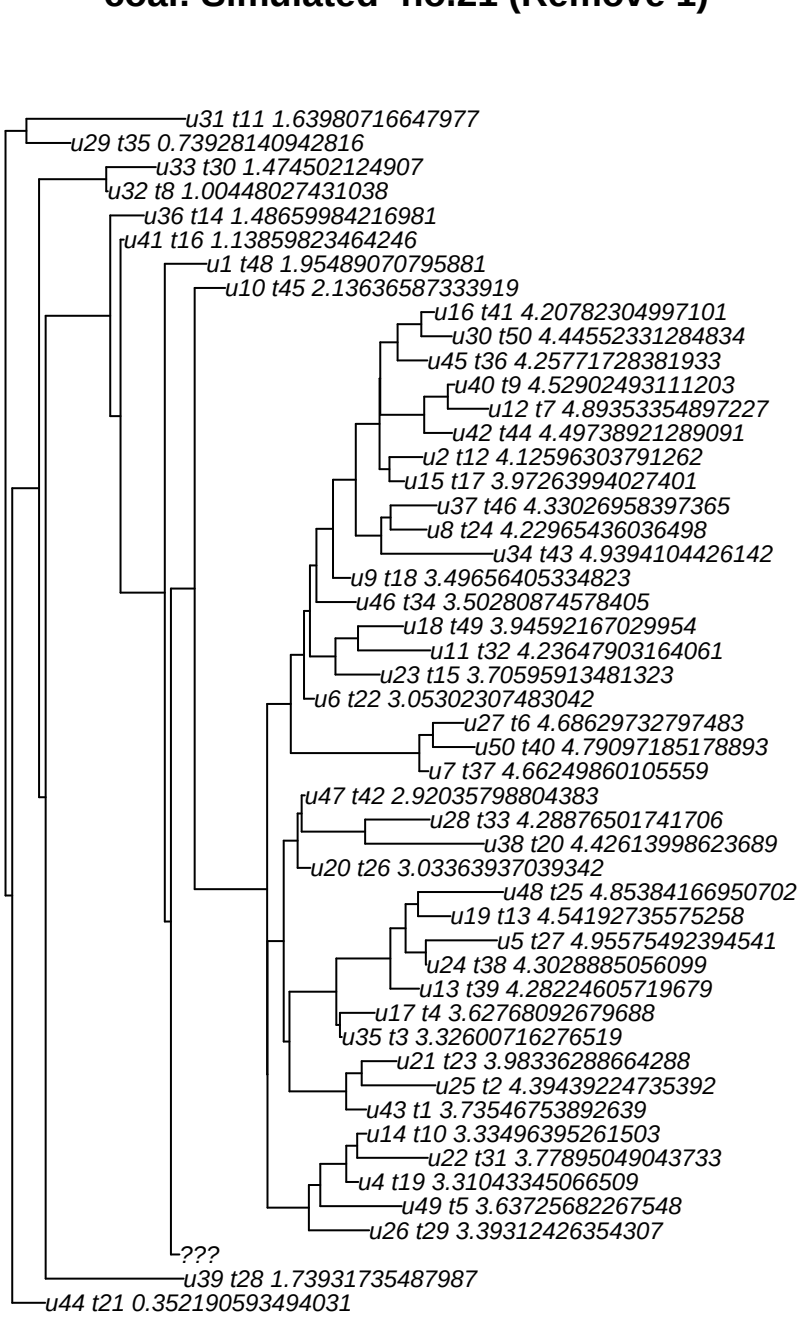

Time vs Distance
Time
0
2
4
6
8
10
0
20
40
60
80
100
120
Expected Substitutions
(Mean square error: 6.19674)

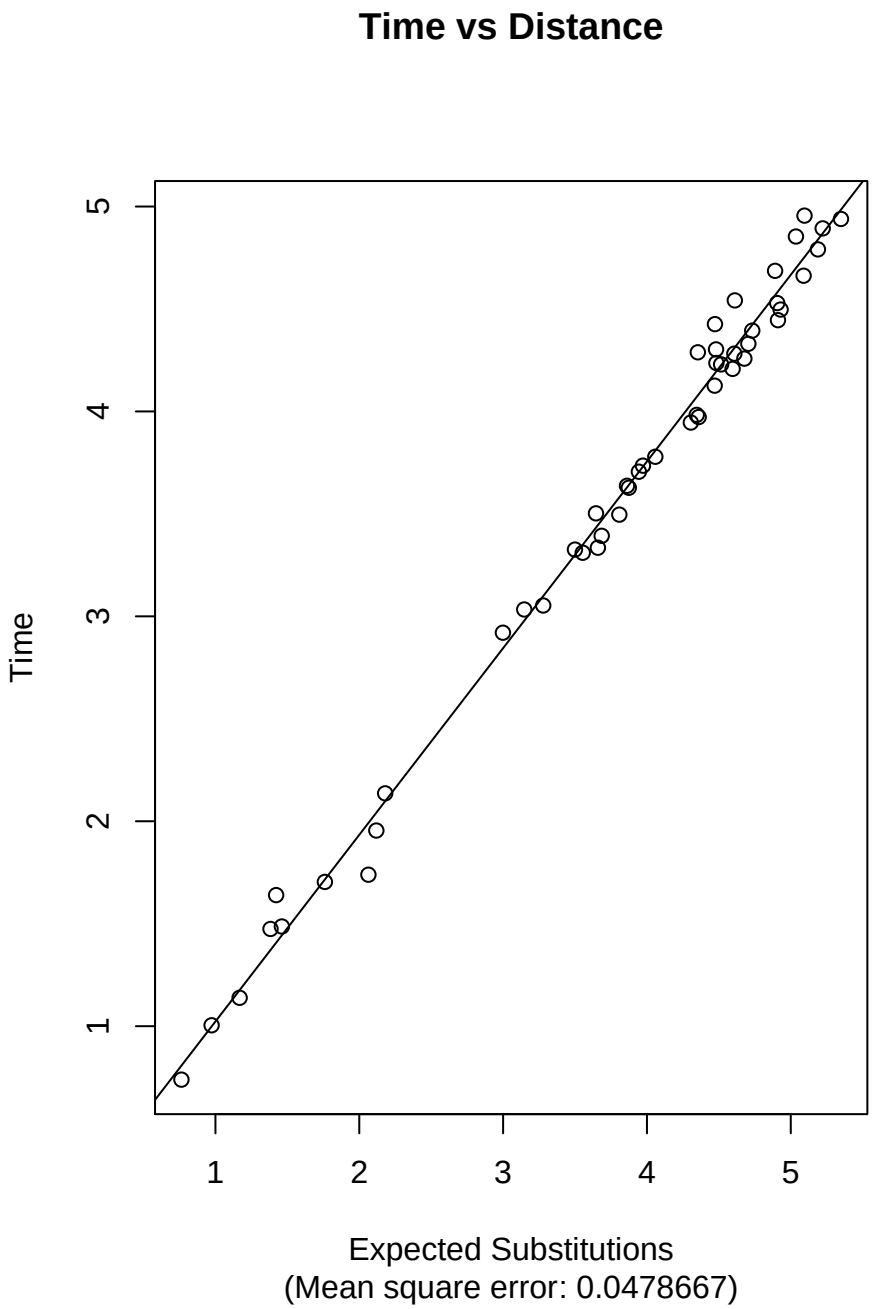

coal: Simulated−no.19 (Remove 1)
u22 t28 1.82123928205802
u38 t32 1.1557012540511
u50 t6 0.316891375980318
u7 t46 2.97726191531444
u5 t22 1.84472475845113
u12 t42 2.51243771681671
u24 t50 2.33646147283562
u36 t7 2.68959034269093
u19 t26 2.61033022269997
u39 t29 3.04831602760699
u33 t40 3.14304367098538
u29 t16 3.66200639319232
u30 t13 3.40711217482703
u1 t14 5.05114357448663
u42 t27 5.01355784254163
u47 t49 5.00507142619696
u21 t31 3.72450948333483
u18 t37 10.5425161397227
???
u45 t44 10.7036966930776
u13 t8 9.76970175274894
u10 t48 10.2870419976608
u17 t35 7.70322778267999
u35 t34 7.72517793126928
u25 t11 6.88800618059105
u32 t20 6.26965683919607
u31 t4 5.26968715858228
u9 t47 5.4761912376663
u46 t2 5.39192196632032
u27 t39 4.61323677279436
u11 t43 3.90295459101509
u43 t19 2.97948468047393
u16 t45 3.77923890612202
u6 t3 3.32194562549671
u8 t17 4.78341685162023
u44 t10 3.68791684313906
u20 t15 2.1940135275301
u3 t33 2.42625986111623
u15 t36 2.78106994154805
u26 t18 2.22470608452858
u49 t21 3.75547514651112
u28 t30 8.52010420386884
u40 t12 8.09584789633241
u2 t38 6.70761711621011
u41 t25 6.56301084241712
u37 t9 6.38890203878924
u23 t24 7.24077316601634
u14 t5 7.83843678512143
u48 t23 1.86926964152892
u4 t41 1.90335701546382

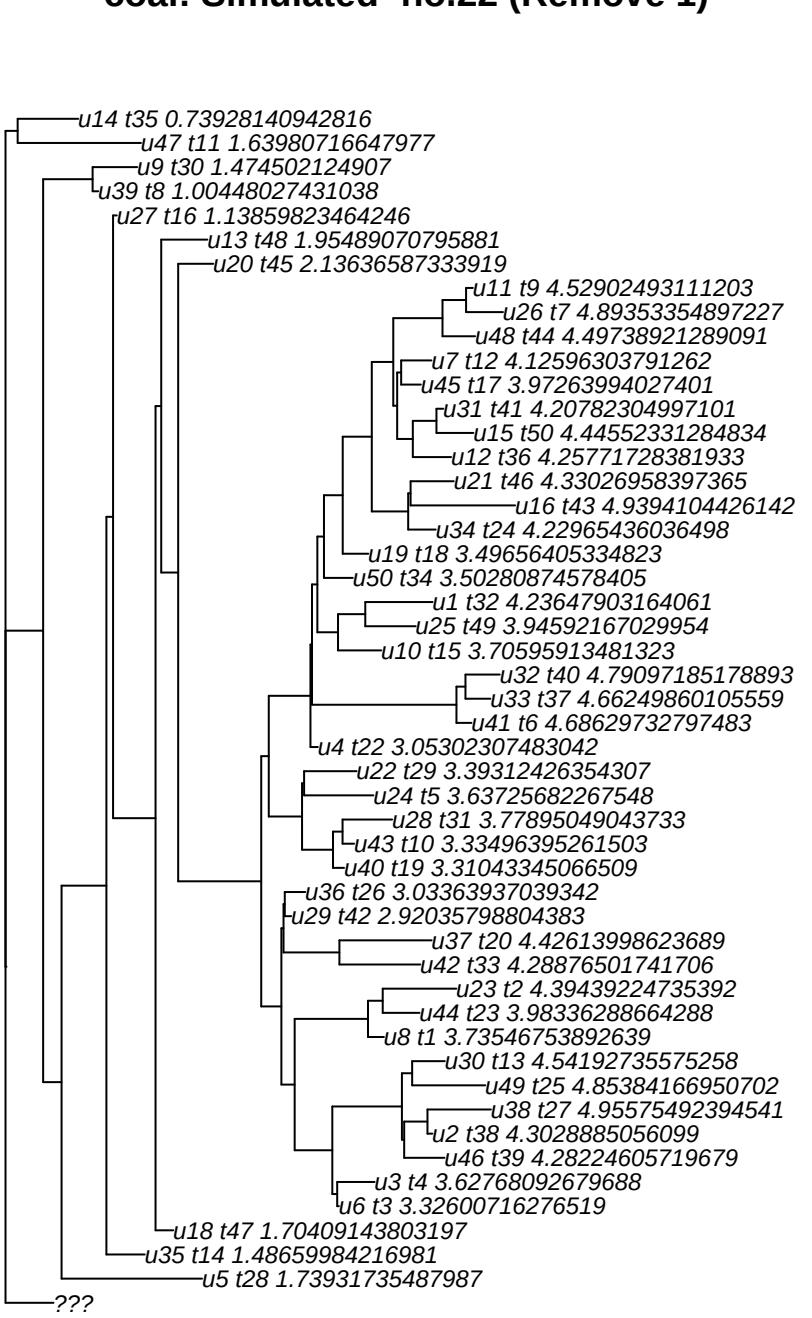

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.00648453)
0
20
40
60
80
100
120
140
1
2
3
4
5

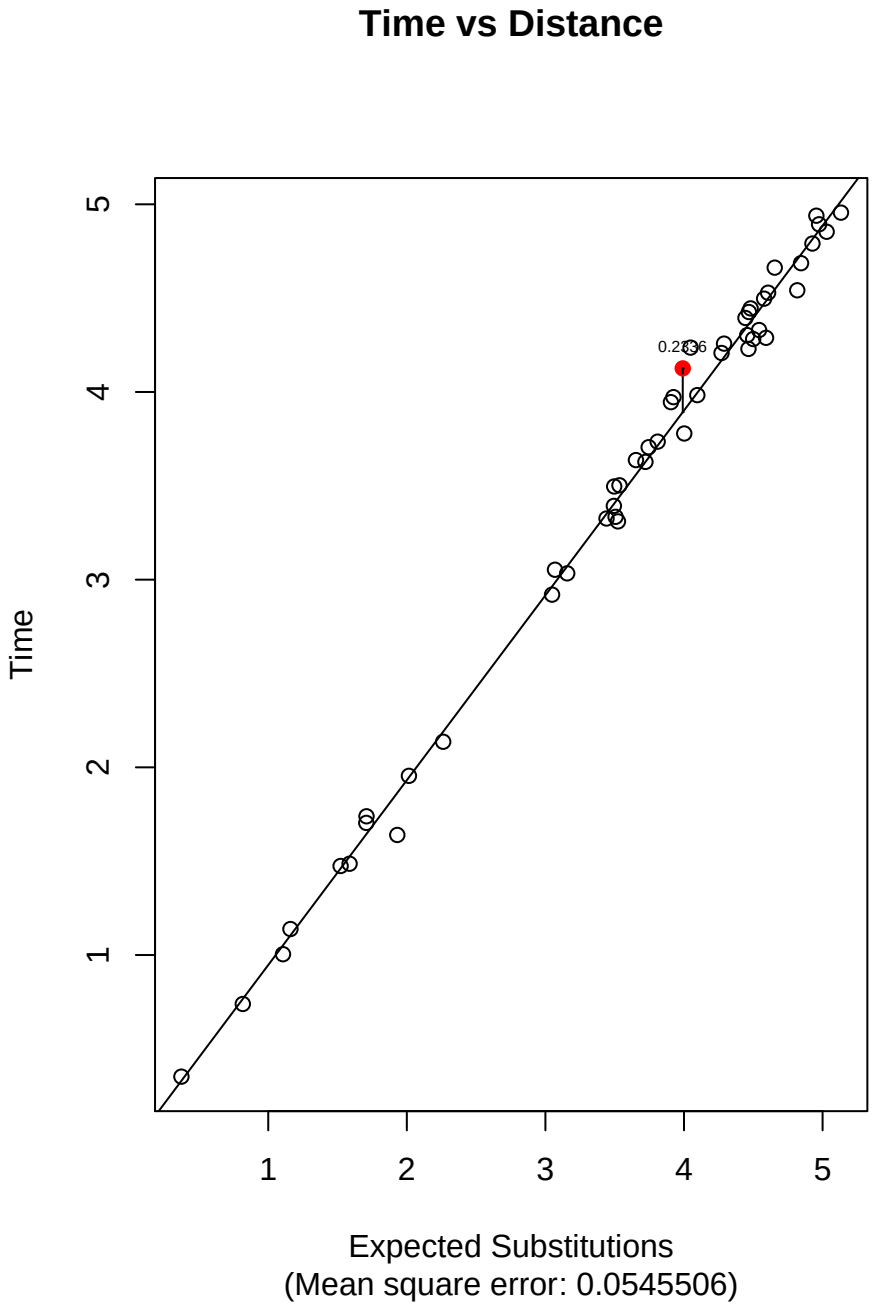

coal: Simulated−no.20 (Remove 1)
u31 t36 1.0852033083708
u30 t10 0.723581283603678
u11 t11 0.339728130312128
u39 t26 2.34097069742324
u3 t28 1.04558246623958
u5 t22 2.22194939746573
u42 t25 1.45757494391226
u1 t13 2.04120682621204
u48 t6 2.96105186702752
u8 t3 3.21892334410841
u33 t47 3.65924761519539
u25 t44 3.07588498107007
u50 t29 2.84200467872162
u18 t5 2.71681141568655
u37 t31 3.26199509440355
u24 t20 3.18988648364878
u6 t41 2.78895490363107
u22 t40 4.99962130610321
u40 t34 3.85442836819458
u45 t15 3.93328768010973
u20 t27 4.36282934843918
u10 t16 5.42071576635052
u21 t2 5.29831631414537
u34 t9 5.04969531504399
u7 t12 5.49622097922922
u28 t7 3.65244117881958
???
u36 t43 3.35598950371373
u2 t14 2.92837335264961
u16 t48 1.70727327223822
u43 t50 3.3606334975575
u46 t4 3.61125417231769
u19 t35 2.87097807601615
u38 t18 4.56843987009799
u9 t49 4.01631346410753
u14 t19 4.50633754513033
u49 t46 4.20401574089504
u47 t45 4.97509342526189
u35 t8 4.5016544291516
u27 t33 5.01223021939249
u41 t38 4.88468930858601
u29 t42 4.67946608331333
u32 t39 4.13615590124243
u12 t23 4.10511951963801
u17 t37 5.08597008263068
u44 t30 5.01528299001829
u26 t21 5.5545085078039
u15 t17 4.89317367486604
u13 t1 0.90591489255101
u4 t32 1.24114548256182

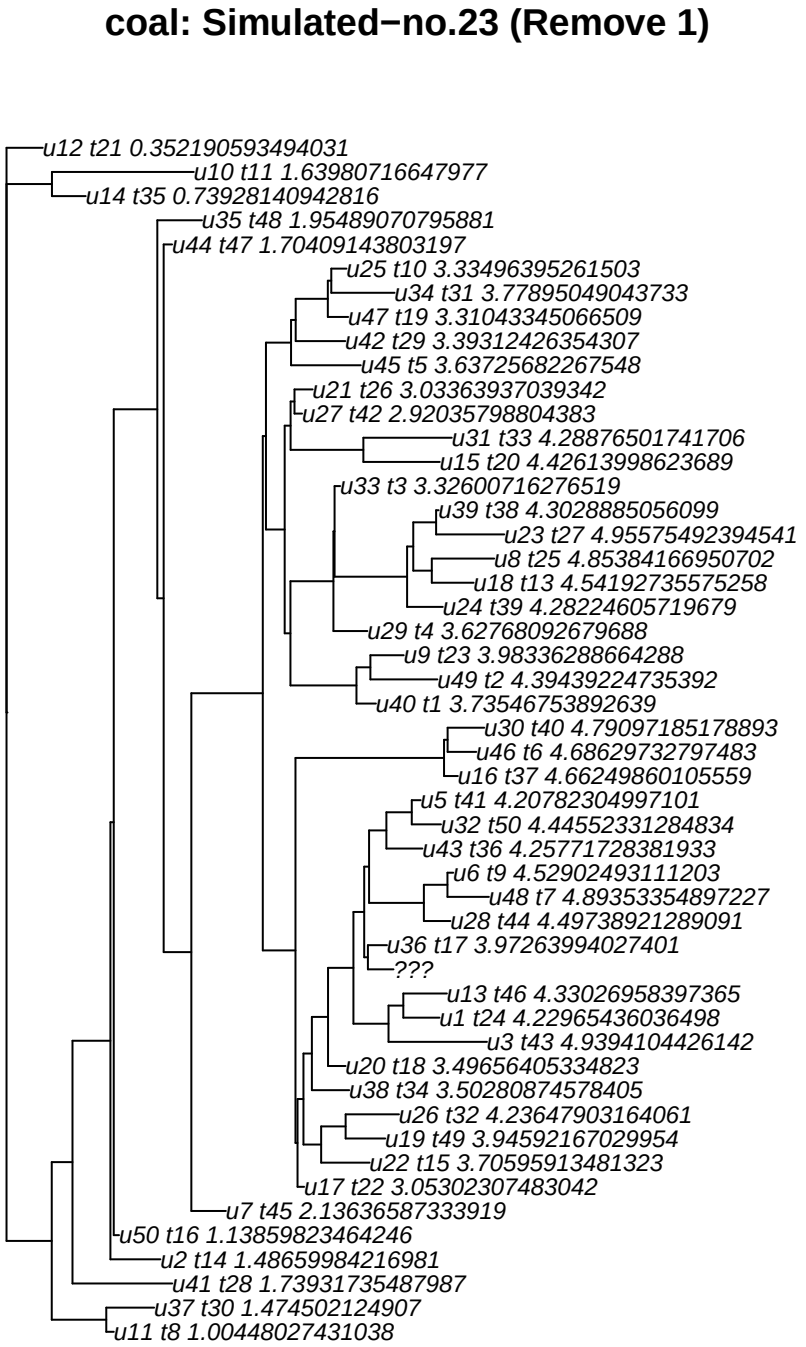

Time vs Distance
Time
Expected Substitutions
(Mean square error: 9.93882e−06)
1
2
3
4
5

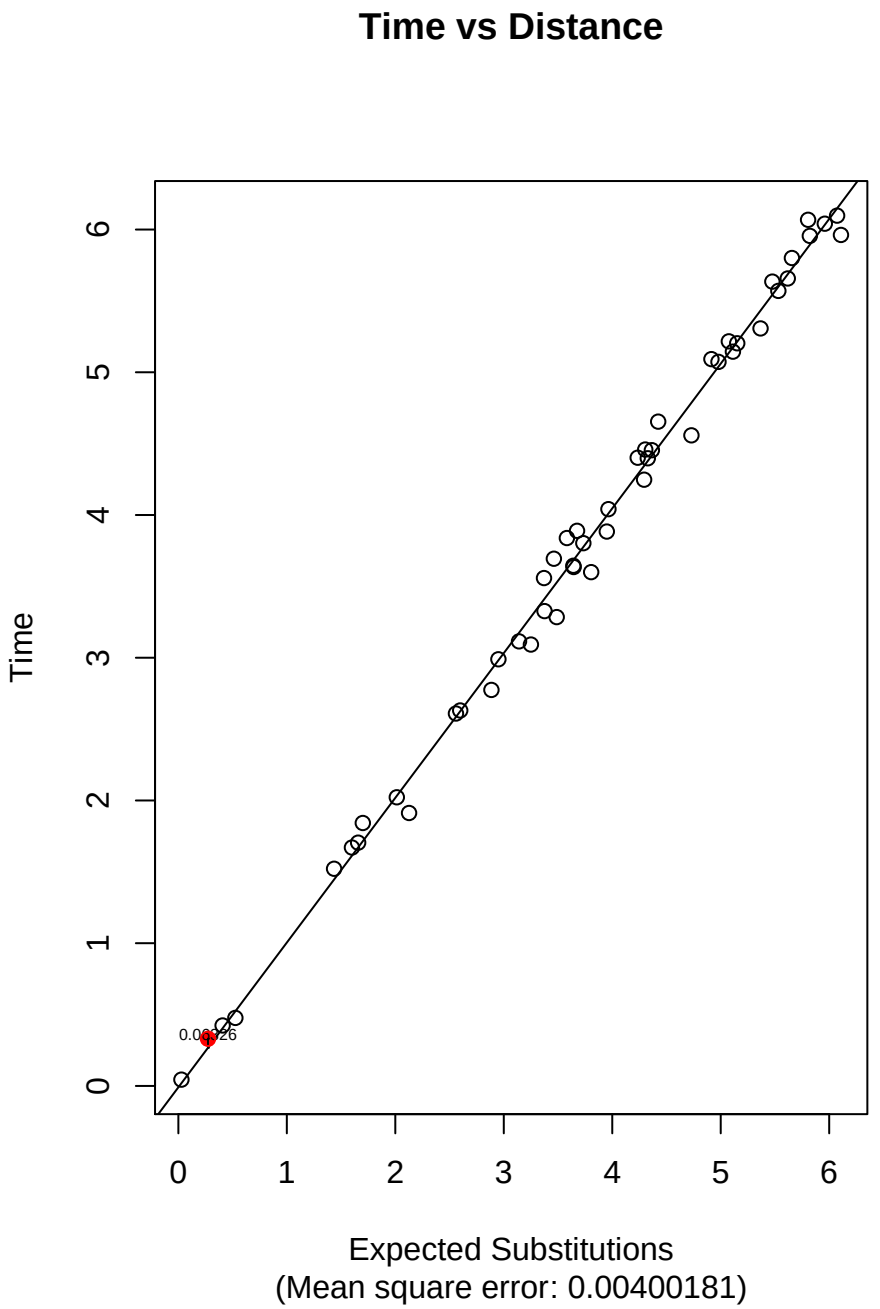

coal: Simulated−no.21 (Remove 1)
u31 t11 1.63980716647977
u29 t35 0.73928140942816
u33 t30 1.474502124907
u32 t8 1.00448027431038
u36 t14 1.48659984216981
u41 t16 1.13859823464246
u1 t48 1.95489070795881
u10 t45 2.13636587333919
u16 t41 4.20782304997101
u30 t50 4.44552331284834
u45 t36 4.25771728381933
u40 t9 4.52902493111203
u12 t7 4.89353354897227
u42 t44 4.49738921289091
u2 t12 4.12596303791262
u15 t17 3.97263994027401
u37 t46 4.33026958397365
u8 t24 4.22965436036498
u34 t43 4.9394104426142
u9 t18 3.49656405334823
u46 t34 3.50280874578405
u18 t49 3.94592167029954
u11 t32 4.23647903164061
u23 t15 3.70595913481323
u6 t22 3.05302307483042
u27 t6 4.68629732797483
u50 t40 4.79097185178893
u7 t37 4.66249860105559
u47 t42 2.92035798804383
u28 t33 4.28876501741706
u38 t20 4.42613998623689
u20 t26 3.03363937039342
u48 t25 4.85384166950702
u19 t13 4.54192735575258
u5 t27 4.95575492394541
u24 t38 4.3028885056099
u13 t39 4.28224605719679
u17 t4 3.62768092679688
u35 t3 3.32600716276519
u21 t23 3.98336288664288
u25 t2 4.39439224735392
u43 t1 3.73546753892639
u14 t10 3.33496395261503
u22 t31 3.77895049043733
u4 t19 3.31043345066509
u49 t5 3.63725682267548
u26 t29 3.39312426354307
???
u39 t28 1.73931735487987
u44 t21 0.352190593494031

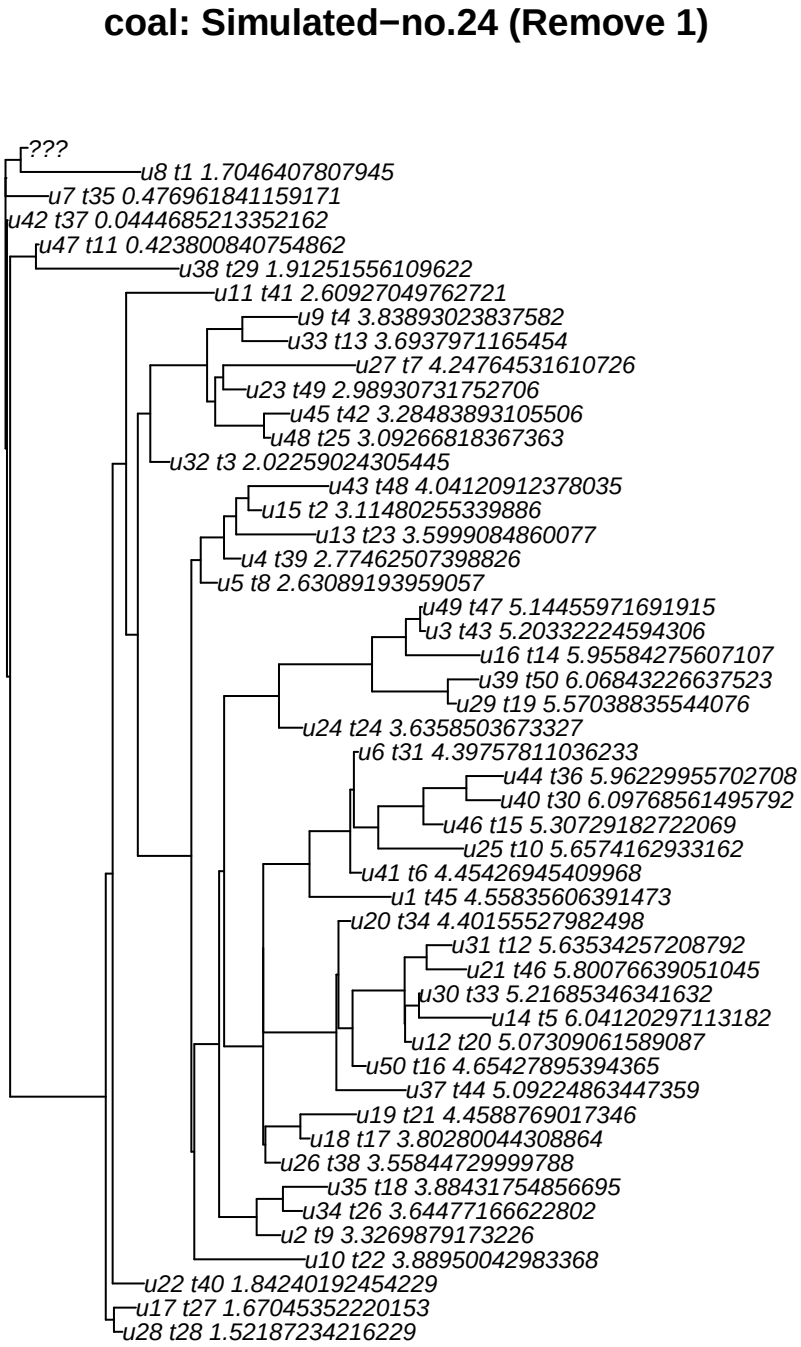

Time vs Distance
Time
1
2
3
4
5
Expected Substitutions
(Mean square error: 0.0478667)

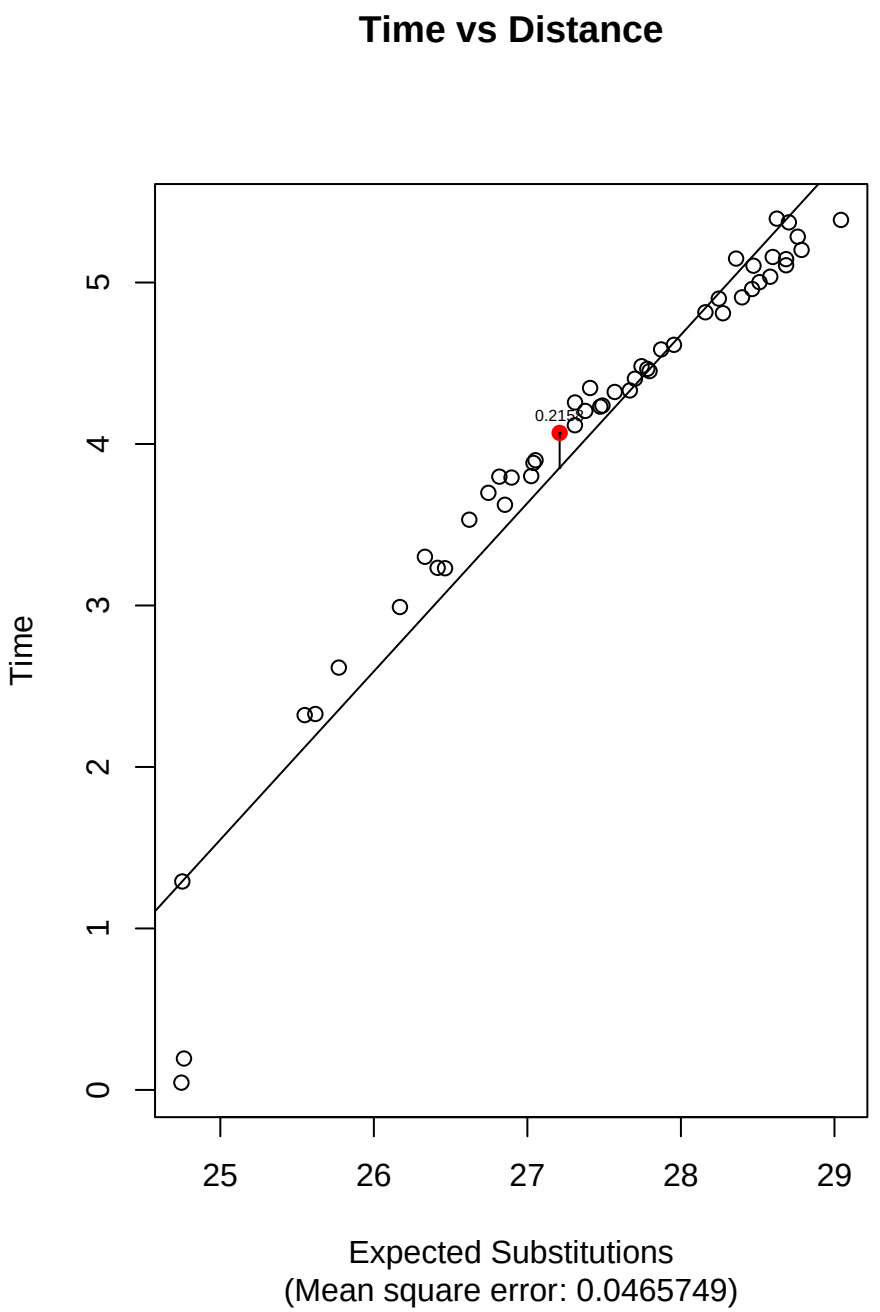

coal: Simulated−no.22 (Remove 1)
u14 t35 0.73928140942816
u47 t11 1.63980716647977
u9 t30 1.474502124907
u39 t8 1.00448027431038
u27 t16 1.13859823464246
u13 t48 1.95489070795881
u20 t45 2.13636587333919
u11 t9 4.52902493111203
u26 t7 4.89353354897227
u48 t44 4.49738921289091
u7 t12 4.12596303791262
u45 t17 3.97263994027401
u31 t41 4.20782304997101
u15 t50 4.44552331284834
u12 t36 4.25771728381933
u21 t46 4.33026958397365
u16 t43 4.9394104426142
u34 t24 4.22965436036498
u19 t18 3.49656405334823
u50 t34 3.50280874578405
u1 t32 4.23647903164061
u25 t49 3.94592167029954
u10 t15 3.70595913481323
u32 t40 4.79097185178893
u33 t37 4.66249860105559
u41 t6 4.68629732797483
u4 t22 3.05302307483042
u22 t29 3.39312426354307
u24 t5 3.63725682267548
u28 t31 3.77895049043733
u43 t10 3.33496395261503
u40 t19 3.31043345066509
u36 t26 3.03363937039342
u29 t42 2.92035798804383
u37 t20 4.42613998623689
u42 t33 4.28876501741706
u23 t2 4.39439224735392
u44 t23 3.98336288664288
u8 t1 3.73546753892639
u30 t13 4.54192735575258
u49 t25 4.85384166950702
u38 t27 4.95575492394541
u2 t38 4.3028885056099
u46 t39 4.28224605719679
u3 t4 3.62768092679688
u6 t3 3.32600716276519
u18 t47 1.70409143803197
u35 t14 1.48659984216981
u5 t28 1.73931735487987
???

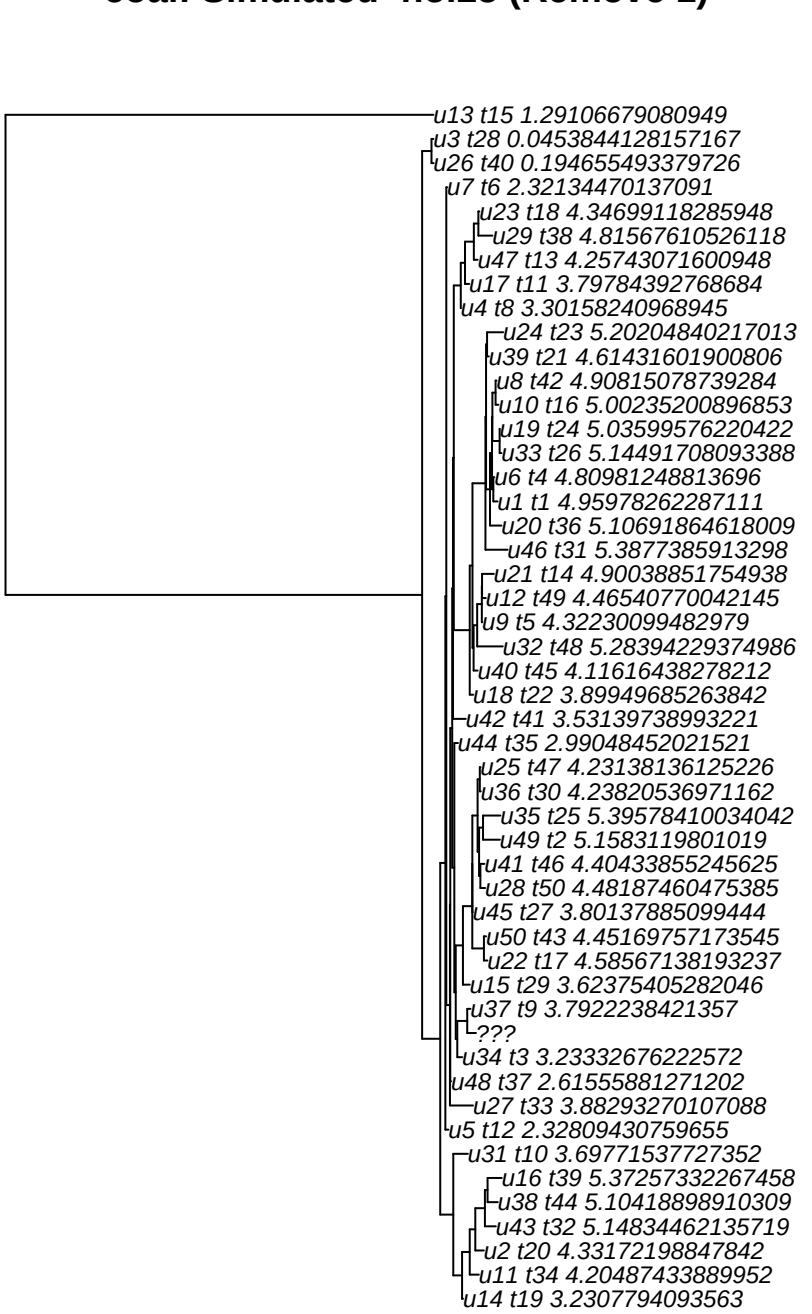

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.0545506)
1
2
3
4
5

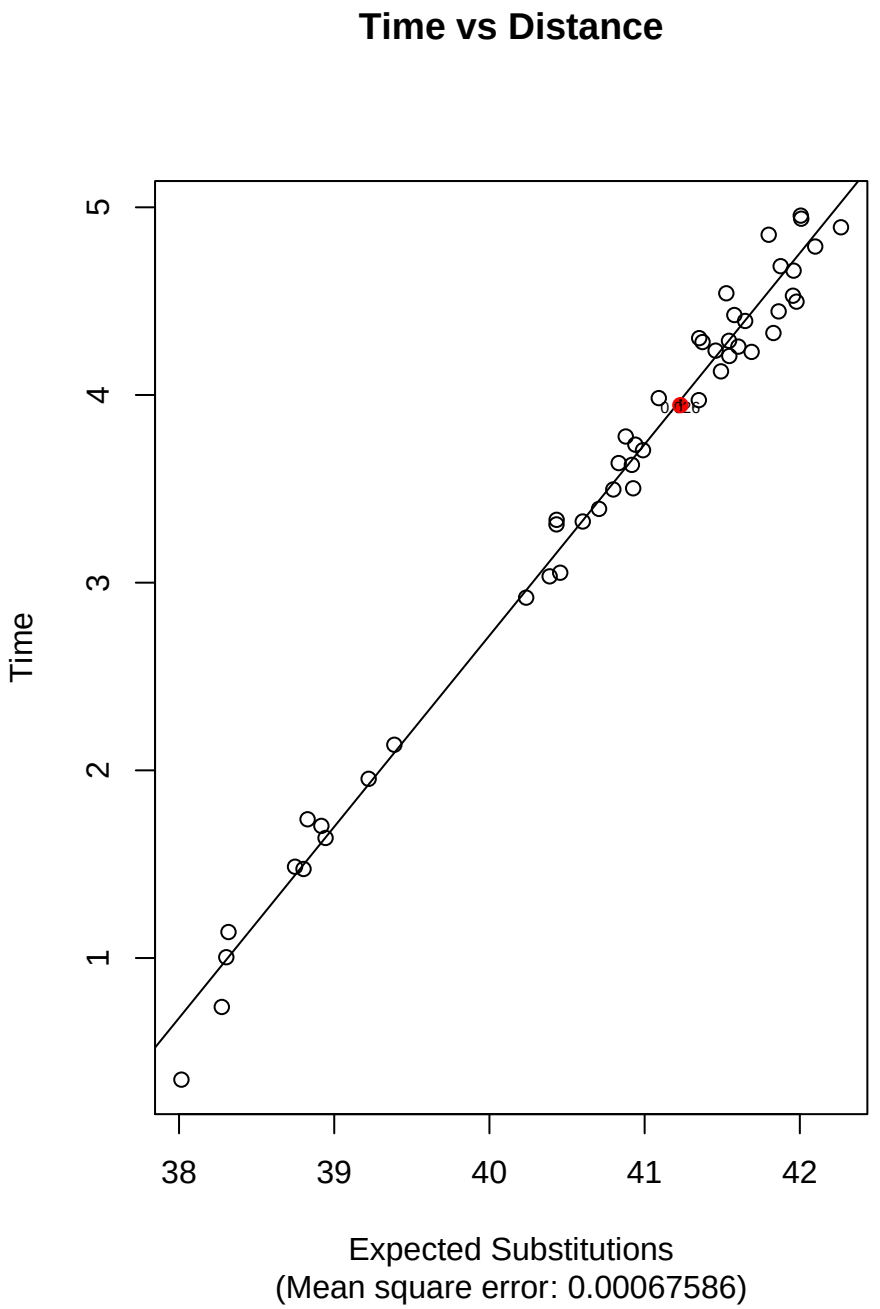

coal: Simulated−no.23 (Remove 1)
u12 t21 0.352190593494031
u10 t11 1.63980716647977
u14 t35 0.73928140942816
u35 t48 1.95489070795881
u44 t47 1.70409143803197
u25 t10 3.33496395261503
u34 t31 3.77895049043733
u47 t19 3.31043345066509
u42 t29 3.39312426354307
u45 t5 3.63725682267548
u21 t26 3.03363937039342
u27 t42 2.92035798804383
u31 t33 4.28876501741706
u15 t20 4.42613998623689
u33 t3 3.32600716276519
u39 t38 4.3028885056099
u23 t27 4.95575492394541
u8 t25 4.85384166950702
u18 t13 4.54192735575258
u24 t39 4.28224605719679
u29 t4 3.62768092679688
u9 t23 3.98336288664288
u49 t2 4.39439224735392
u40 t1 3.73546753892639
u30 t40 4.79097185178893
u46 t6 4.68629732797483
u16 t37 4.66249860105559
u5 t41 4.20782304997101
u32 t50 4.44552331284834
u43 t36 4.25771728381933
u6 t9 4.52902493111203
u48 t7 4.89353354897227
u28 t44 4.49738921289091
u36 t17 3.97263994027401
???
u13 t46 4.33026958397365
u1 t24 4.22965436036498
u3 t43 4.9394104426142
u20 t18 3.49656405334823
u38 t34 3.50280874578405
u26 t32 4.23647903164061
u19 t49 3.94592167029954
u22 t15 3.70595913481323
u17 t22 3.05302307483042
u7 t45 2.13636587333919
u50 t16 1.13859823464246
u2 t14 1.48659984216981
u41 t28 1.73931735487987
u37 t30 1.474502124907
u11 t8 1.00448027431038

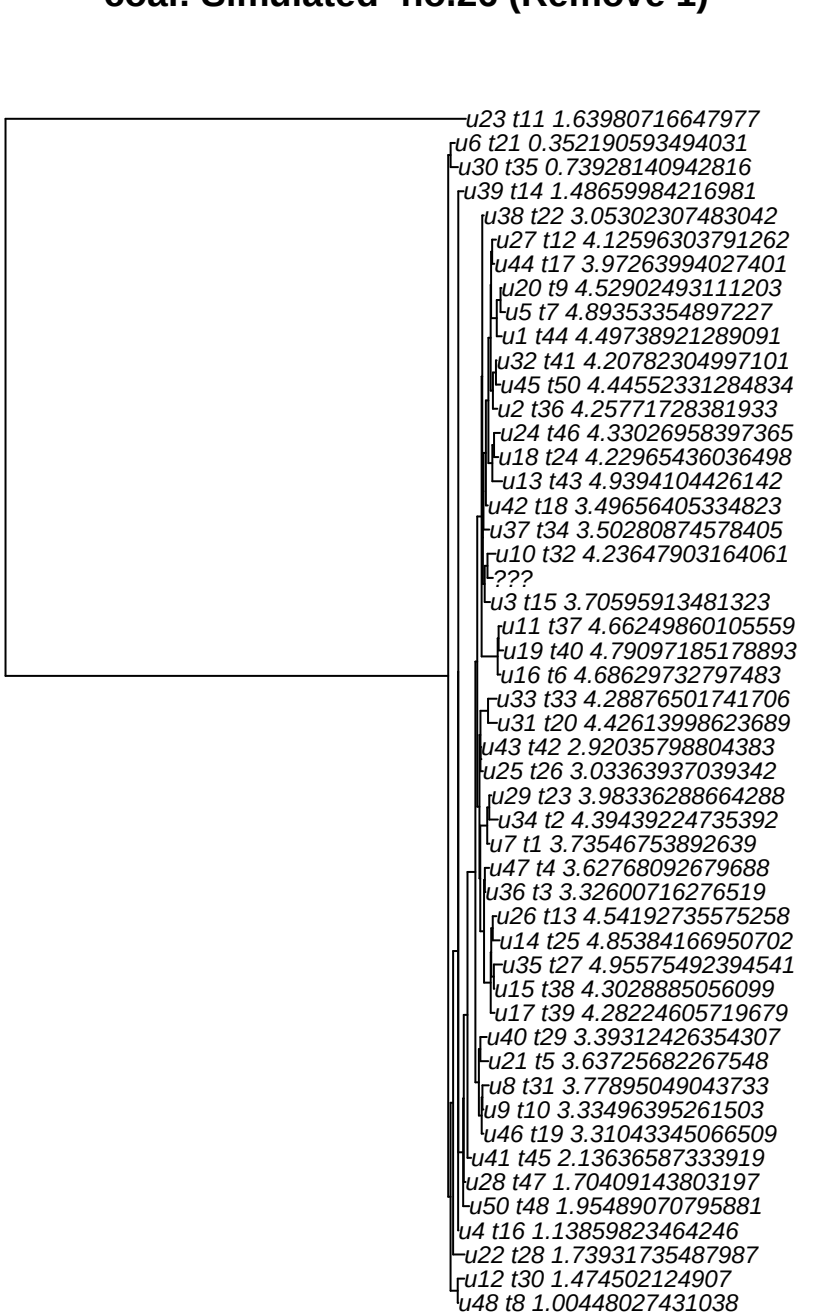

Time vs Distance
Time
0
1
2
3
4
5
6
0.00326
Expected Substitutions
(Mean square error: 0.00400181)

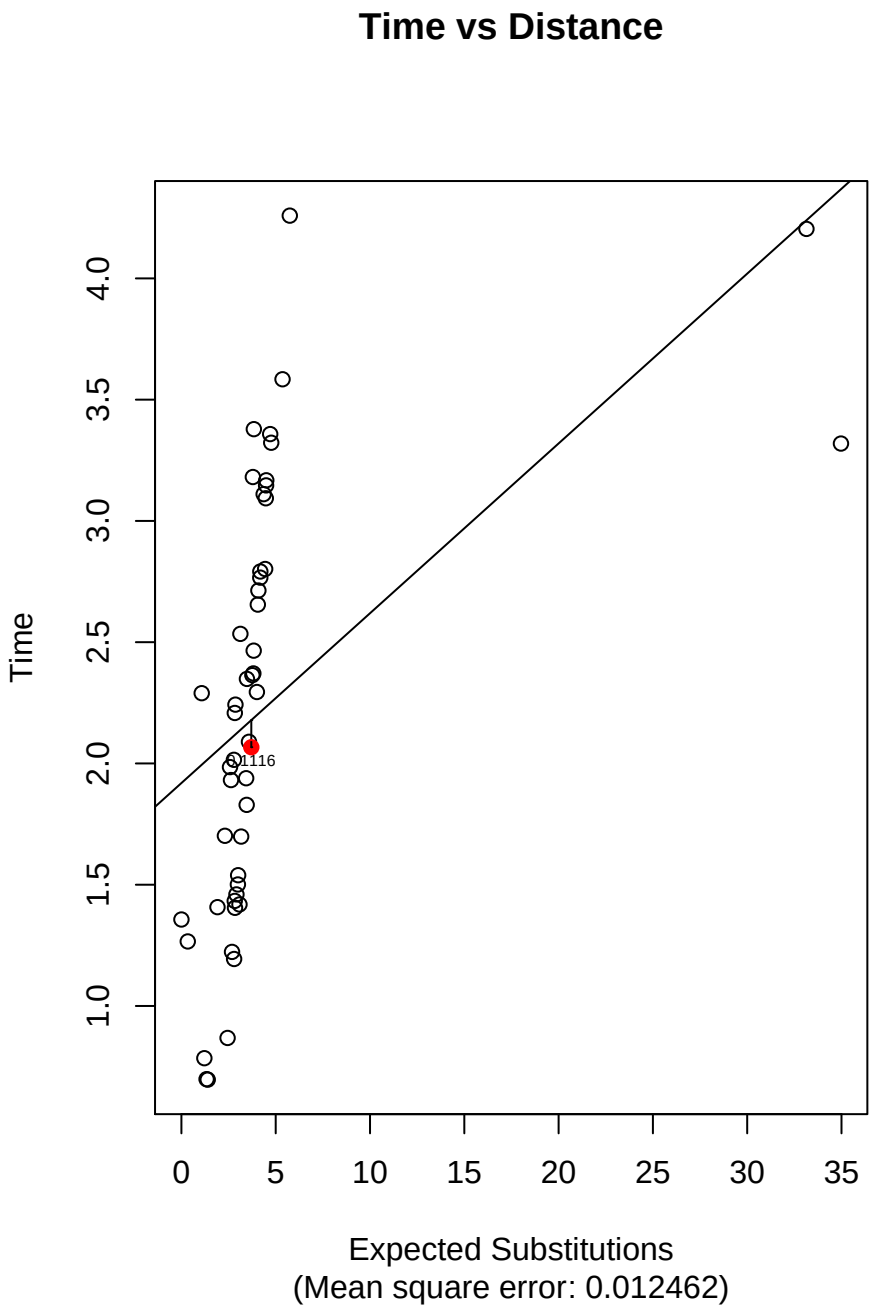

coal: Simulated−no.24 (Remove 1)
???
u8 t1 1.7046407807945
u7 t35 0.476961841159171
u42 t37 0.0444685213352162
u47 t11 0.423800840754862
u38 t29 1.91251556109622
u11 t41 2.60927049762721
u9 t4 3.83893023837582
u33 t13 3.6937971165454
u27 t7 4.24764531610726
u23 t49 2.98930731752706
u45 t42 3.28483893105506
u48 t25 3.09266818367363
u32 t3 2.02259024305445
u43 t48 4.04120912378035
u15 t2 3.11480255339886
u13 t23 3.5999084860077
u4 t39 2.77462507398826
u5 t8 2.63089193959057
u49 t47 5.14455971691915
u3 t43 5.20332224594306
u16 t14 5.95584275607107
u39 t50 6.06843226637523
u29 t19 5.57038835544076
u24 t24 3.6358503673327
u6 t31 4.39757811036233
u44 t36 5.96229955702708
u40 t30 6.09768561495792
u46 t15 5.30729182722069
u25 t10 5.6574162933162
u41 t6 4.45426945409968
u1 t45 4.55835606391473
u20 t34 4.40155527982498
u31 t12 5.63534257208792
u21 t46 5.80076639051045
u30 t33 5.21685346341632
u14 t5 6.04120297113182
u12 t20 5.07309061589087
u50 t16 4.65427895394365
u37 t44 5.09224863447359
u19 t21 4.4588769017346
u18 t17 3.80280044308864
u26 t38 3.55844729999788
u35 t18 3.88431754856695
u34 t26 3.64477166622802
u2 t9 3.3269879173226
u10 t22 3.88950042983368
u22 t40 1.84240192454229
u17 t27 1.67045352220153
u28 t28 1.52187234216229

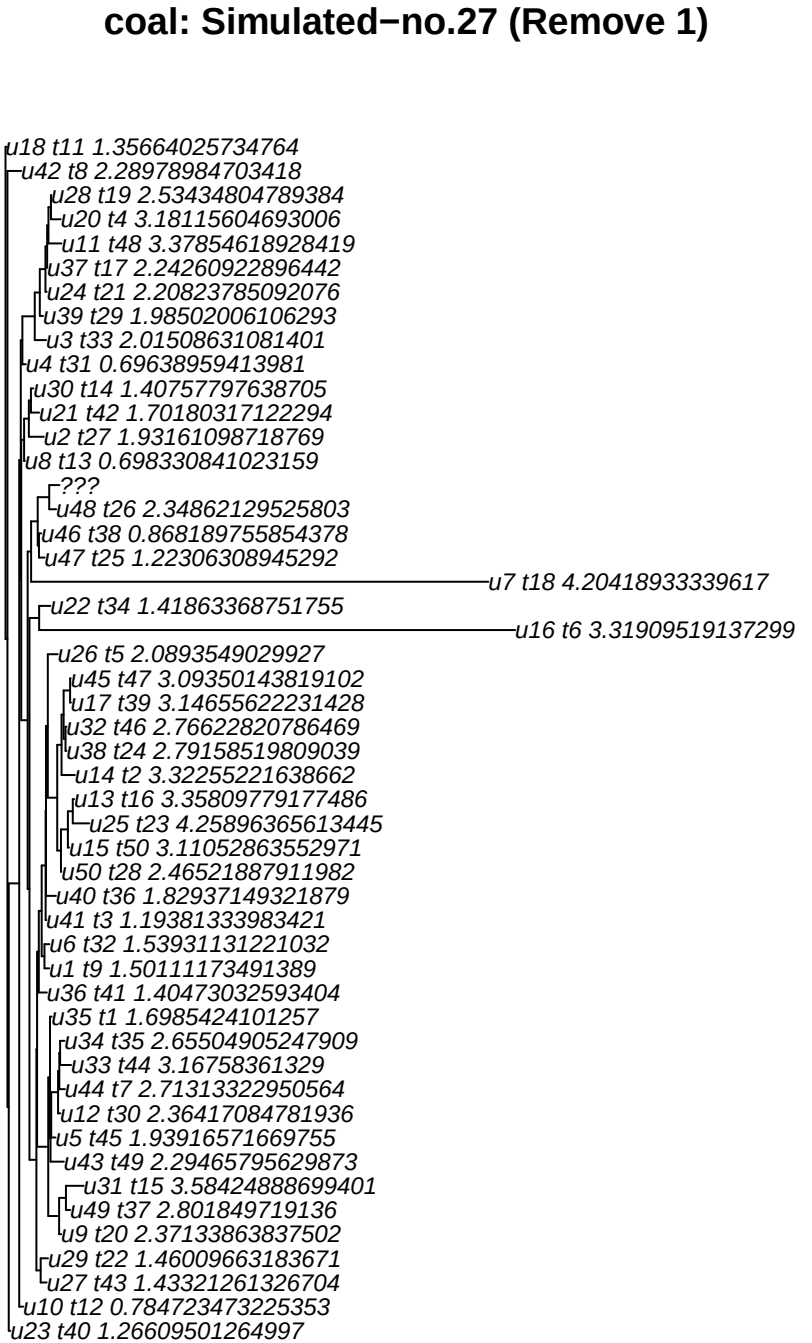

Time vs Distance
Time
0
1
2
3
4
5
25
26
27
28
29
Expected Substitutions
(Mean square error: 0.0465749)

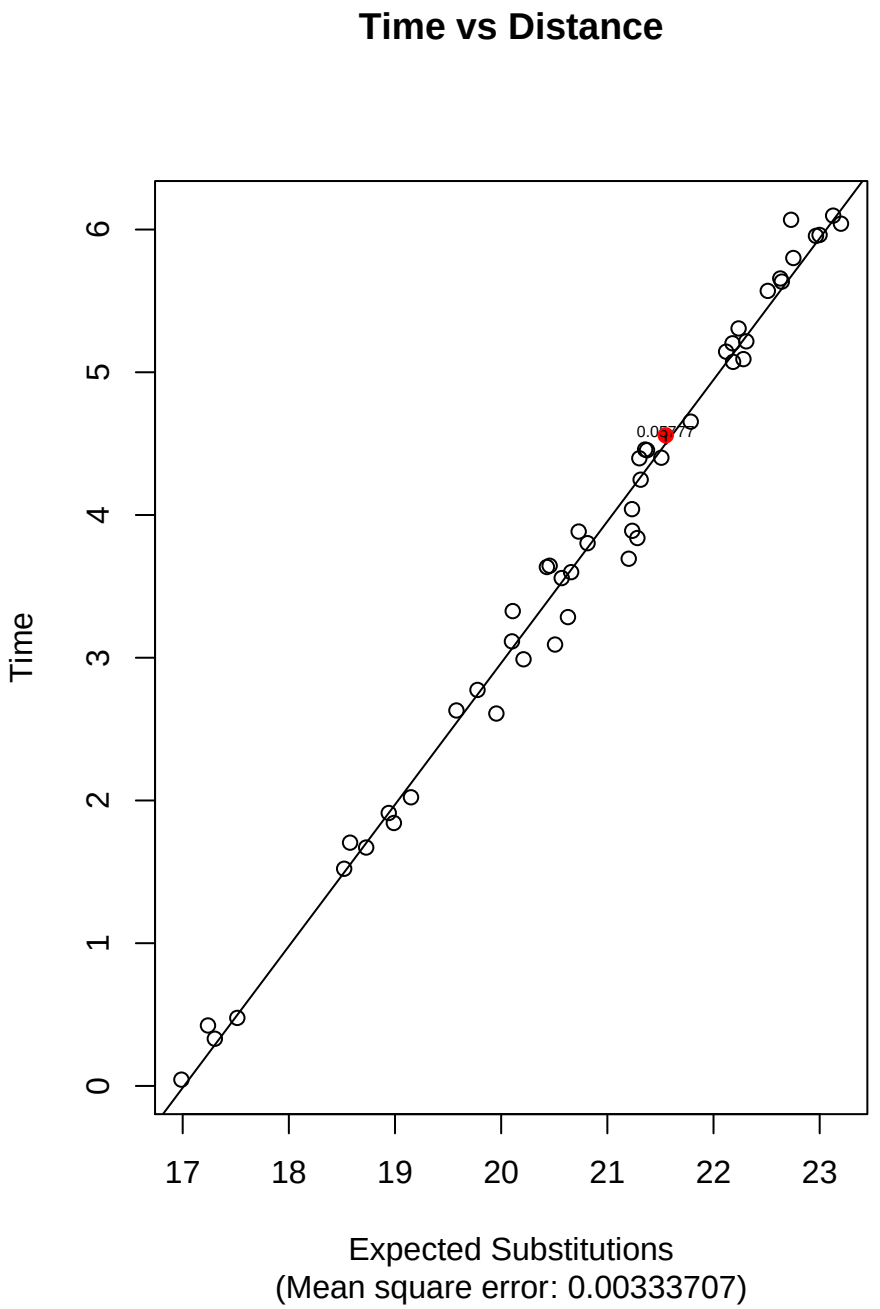

coal: Simulated−no.25 (Remove 1)
u13 t15 1.29106679080949
u3 t28 0.0453844128157167
u26 t40 0.194655493379726
u7 t6 2.32134470137091
u23 t18 4.34699118285948
u29 t38 4.81567610526118
u47 t13 4.25743071600948
u17 t11 3.79784392768684
u4 t8 3.30158240968945
u24 t23 5.20204840217013
u39 t21 4.61431601900806
u8 t42 4.90815078739284
u10 t16 5.00235200896853
u19 t24 5.03599576220422
u33 t26 5.14491708093388
u6 t4 4.80981248813696
u1 t1 4.95978262287111
u20 t36 5.10691864618009
u46 t31 5.3877385913298
u21 t14 4.90038851754938
u12 t49 4.46540770042145
u9 t5 4.32230099482979
u32 t48 5.28394229374986
u40 t45 4.11616438278212
u18 t22 3.89949685263842
u42 t41 3.53139738993221
u44 t35 2.99048452021521
u25 t47 4.23138136125226
u36 t30 4.23820536971162
u35 t25 5.39578410034042
u49 t2 5.1583119801019
u41 t46 4.40433855245625
u28 t50 4.48187460475385
u45 t27 3.80137885099444
u50 t43 4.45169757173545
u22 t17 4.58567138193237
u15 t29 3.62375405282046
u37 t9 3.7922238421357
???
u34 t3 3.23332676222572
u48 t37 2.61555881271202
u27 t33 3.88293270107088
u5 t12 2.32809430759655
u31 t10 3.69771537727352
u16 t39 5.37257332267458
u38 t44 5.10418898910309
u43 t32 5.14834462135719
u2 t20 4.33172198847842
u11 t34 4.20487433889952
u14 t19 3.2307794093563

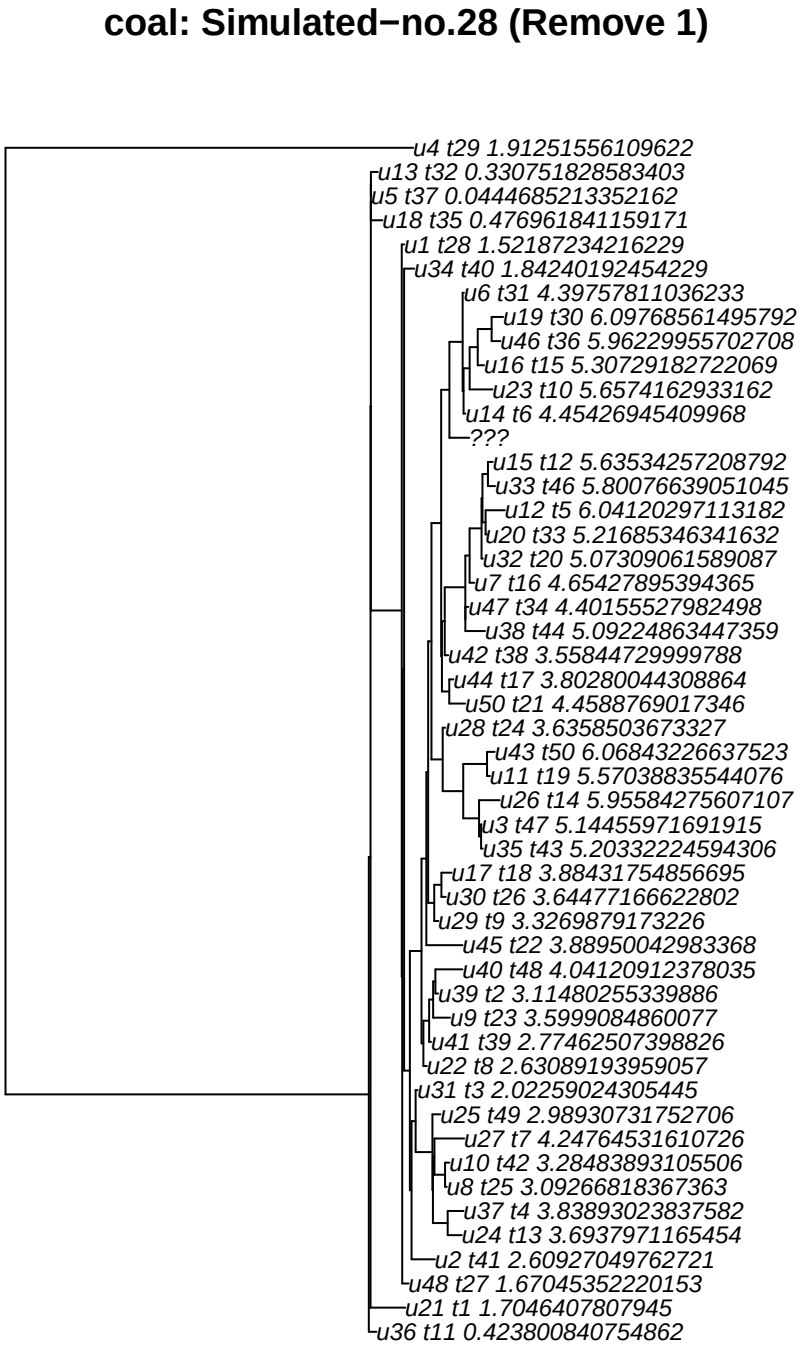

Time vs Distance
Time
1
2
3
4
5
38
39
40
41
42
Expected Substitutions
(Mean square error: 0.00067586)

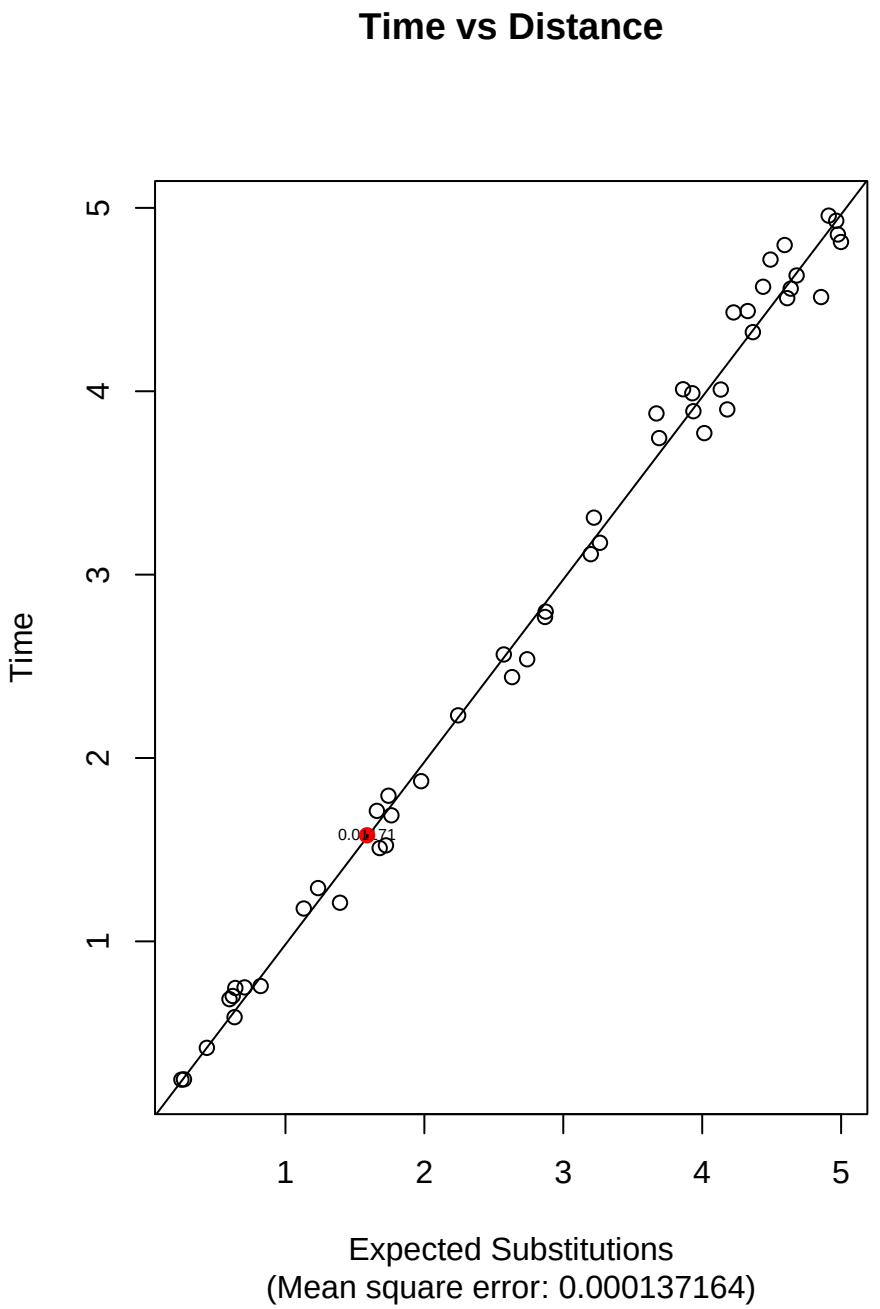

coal: Simulated−no.26 (Remove 1)
u23 t11 1.63980716647977
u6 t21 0.352190593494031
u30 t35 0.73928140942816
u39 t14 1.48659984216981
u38 t22 3.05302307483042
u27 t12 4.12596303791262
u44 t17 3.97263994027401
u20 t9 4.52902493111203
u5 t7 4.89353354897227
u1 t44 4.49738921289091
u32 t41 4.20782304997101
u45 t50 4.44552331284834
u2 t36 4.25771728381933
u24 t46 4.33026958397365
u18 t24 4.22965436036498
u13 t43 4.9394104426142
u42 t18 3.49656405334823
u37 t34 3.50280874578405
u10 t32 4.23647903164061
???
u3 t15 3.70595913481323
u11 t37 4.66249860105559
u19 t40 4.79097185178893
u16 t6 4.68629732797483
u33 t33 4.28876501741706
u31 t20 4.42613998623689
u43 t42 2.92035798804383
u25 t26 3.03363937039342
u29 t23 3.98336288664288
u34 t2 4.39439224735392
u7 t1 3.73546753892639
u47 t4 3.62768092679688
u36 t3 3.32600716276519
u26 t13 4.54192735575258
u14 t25 4.85384166950702
u35 t27 4.95575492394541
u15 t38 4.3028885056099
u17 t39 4.28224605719679
u40 t29 3.39312426354307
u21 t5 3.63725682267548
u8 t31 3.77895049043733
u9 t10 3.33496395261503
u46 t19 3.31043345066509
u41 t45 2.13636587333919
u28 t47 1.70409143803197
u50 t48 1.95489070795881
u4 t16 1.13859823464246
u22 t28 1.73931735487987
u12 t30 1.474502124907
u48 t8 1.00448027431038

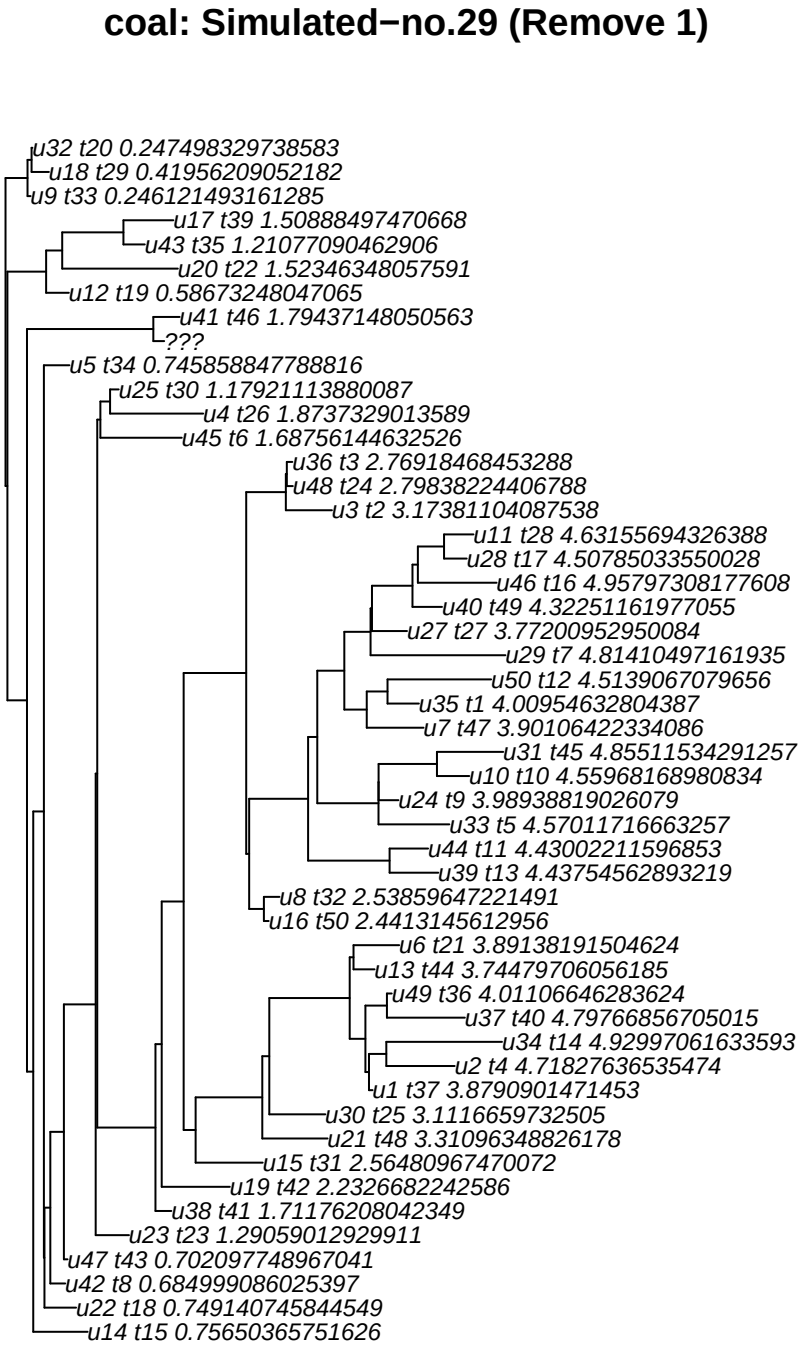

Time vs Distance
Time
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0
5
10
15
20
25
30
35
Expected Substitutions
(Mean square error: 0.012462)

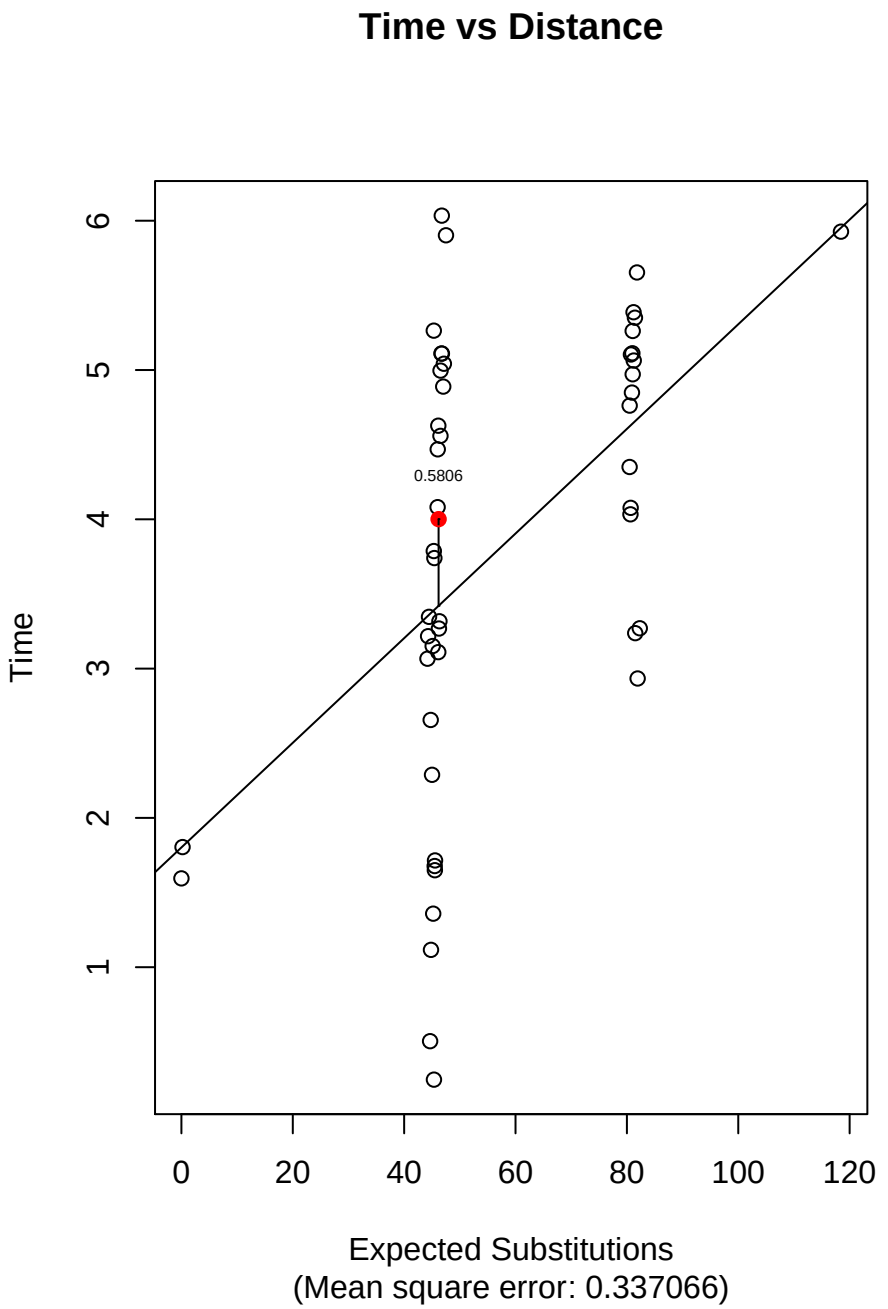

coal: Simulated−no.27 (Remove 1)
u18 t11 1.35664025734764
u42 t8 2.28978984703418
u28 t19 2.53434804789384
u20 t4 3.18115604693006
u11 t48 3.37854618928419
u37 t17 2.24260922896442
u24 t21 2.20823785092076
u39 t29 1.98502006106293
u3 t33 2.01508631081401
u4 t31 0.69638959413981
u30 t14 1.40757797638705
u21 t42 1.70180317122294
u2 t27 1.93161098718769
u8 t13 0.698330841023159
???
u48 t26 2.34862129525803
u46 t38 0.868189755854378
u47 t25 1.22306308945292
u7 t18 4.20418933339617
u22 t34 1.41863368751755
u16 t6 3.31909519137299
u26 t5 2.0893549029927
u45 t47 3.09350143819102
u17 t39 3.14655622231428
u32 t46 2.76622820786469
u38 t24 2.79158519809039
u14 t2 3.32255221638662
u13 t16 3.35809779177486
u25 t23 4.25896365613445
u15 t50 3.11052863552971
u50 t28 2.46521887911982
u40 t36 1.82937149321879
u41 t3 1.19381333983421
u6 t32 1.53931131221032
u1 t9 1.50111173491389
u36 t41 1.40473032593404
u35 t1 1.6985424101257
u34 t35 2.65504905247909
u33 t44 3.16758361329
u44 t7 2.71313322950564
u12 t30 2.36417084781936
u5 t45 1.93916571669755
u43 t49 2.29465795629873
u31 t15 3.58424888699401
u49 t37 2.801849719136
u9 t20 2.37133863837502
u29 t22 1.46009663183671
u27 t43 1.43321261326704
u10 t12 0.784723473225353
u23 t40 1.26609501264997

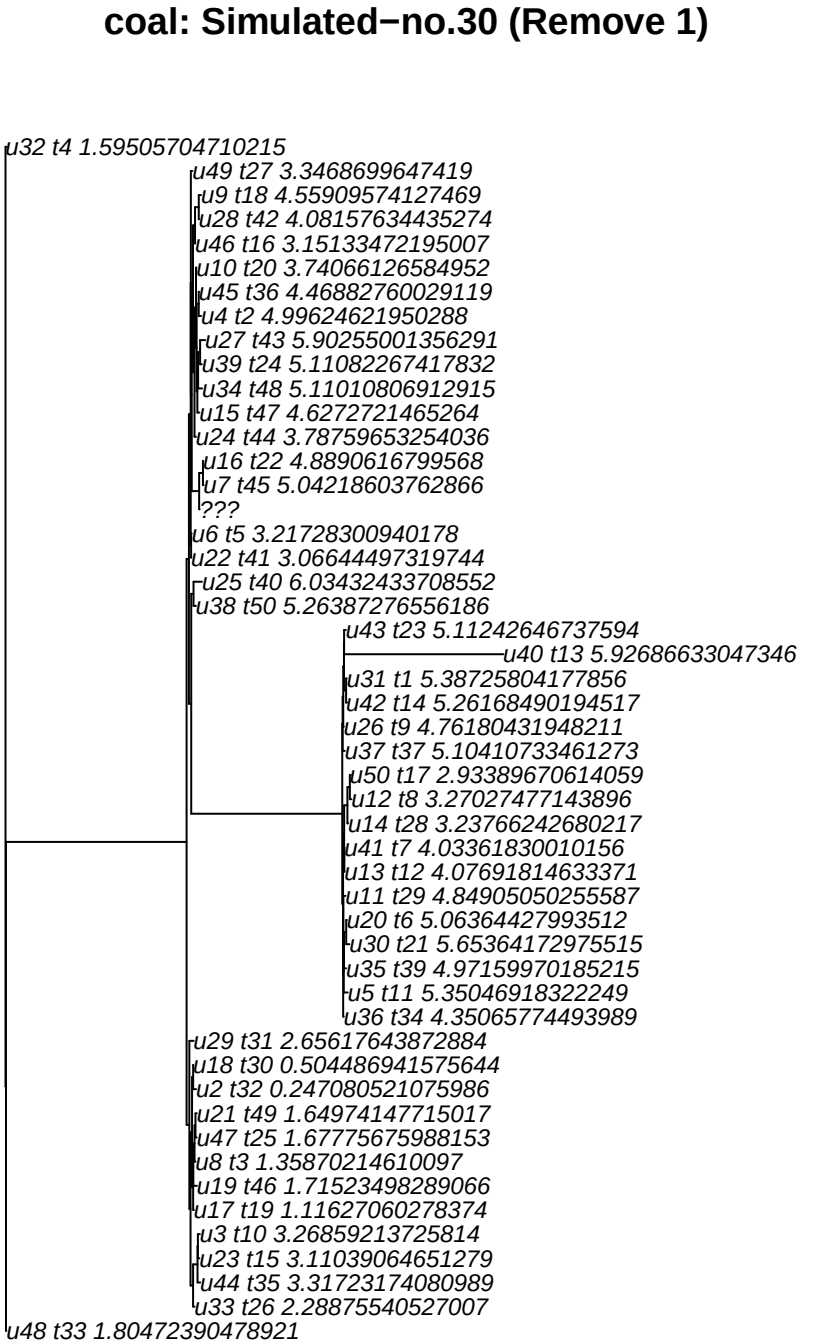

Time vs Distance
Time
0
1
2
3
4
5
6
17
18
19
20
21
22
23
Expected Substitutions
(Mean square error: 0.00333707)

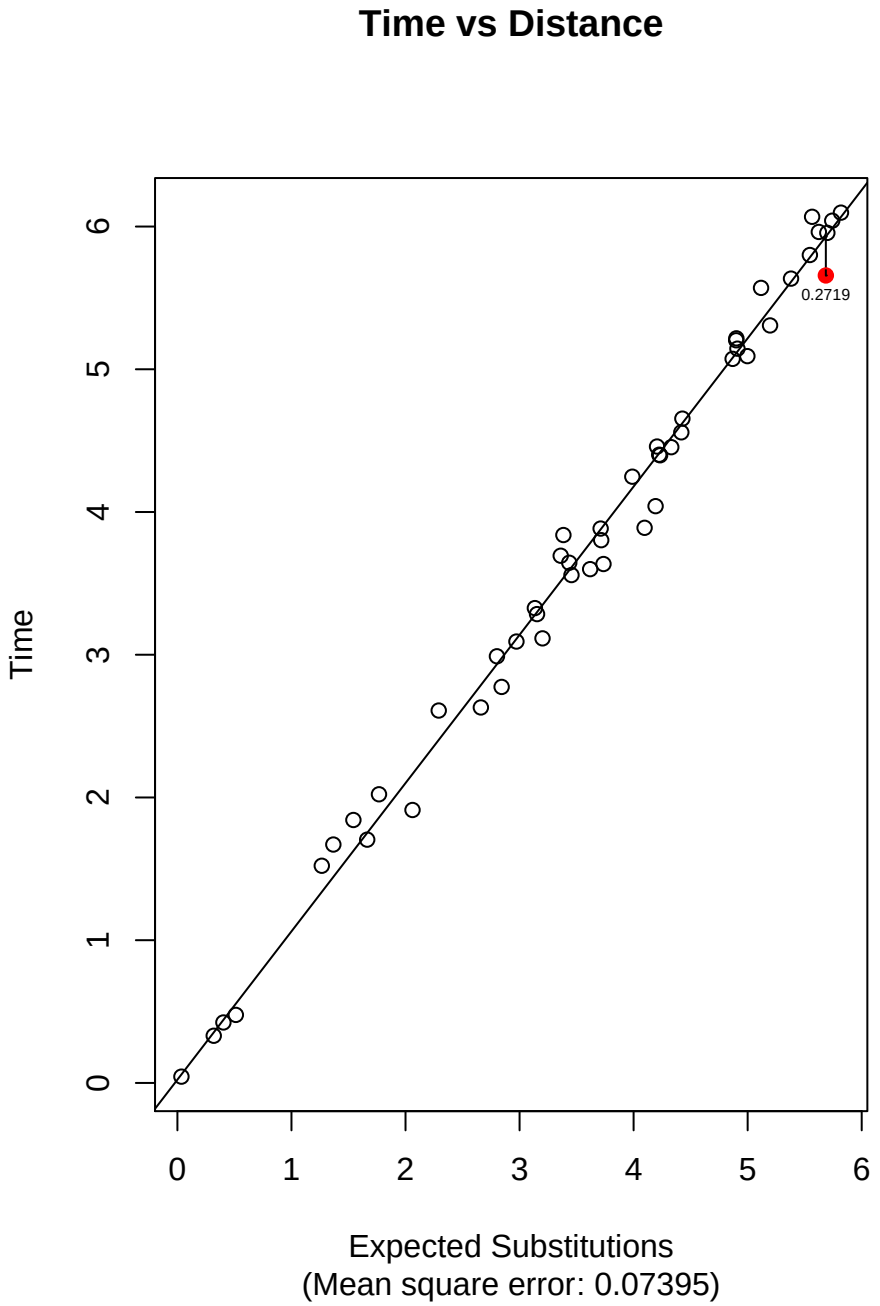

coal: Simulated−no.28 (Remove 1)
u4 t29 1.91251556109622
u13 t32 0.330751828583403
u5 t37 0.0444685213352162
u18 t35 0.476961841159171
u1 t28 1.52187234216229
u34 t40 1.84240192454229
u6 t31 4.39757811036233
u19 t30 6.09768561495792
u46 t36 5.96229955702708
u16 t15 5.30729182722069
u23 t10 5.6574162933162
u14 t6 4.45426945409968
???
u15 t12 5.63534257208792
u33 t46 5.80076639051045
u12 t5 6.04120297113182
u20 t33 5.21685346341632
u32 t20 5.07309061589087
u7 t16 4.65427895394365
u47 t34 4.40155527982498
u38 t44 5.09224863447359
u42 t38 3.55844729999788
u44 t17 3.80280044308864
u50 t21 4.4588769017346
u28 t24 3.6358503673327
u43 t50 6.06843226637523
u11 t19 5.57038835544076
u26 t14 5.95584275607107
u3 t47 5.14455971691915
u35 t43 5.20332224594306
u17 t18 3.88431754856695
u30 t26 3.64477166622802
u29 t9 3.3269879173226
u45 t22 3.88950042983368
u40 t48 4.04120912378035
u39 t2 3.11480255339886
u9 t23 3.5999084860077
u41 t39 2.77462507398826
u22 t8 2.63089193959057
u31 t3 2.02259024305445
u25 t49 2.98930731752706
u27 t7 4.24764531610726
u10 t42 3.28483893105506
u8 t25 3.09266818367363
u37 t4 3.83893023837582
u24 t13 3.6937971165454
u2 t41 2.60927049762721
u48 t27 1.67045352220153
u21 t1 1.7046407807945
u36 t11 0.423800840754862

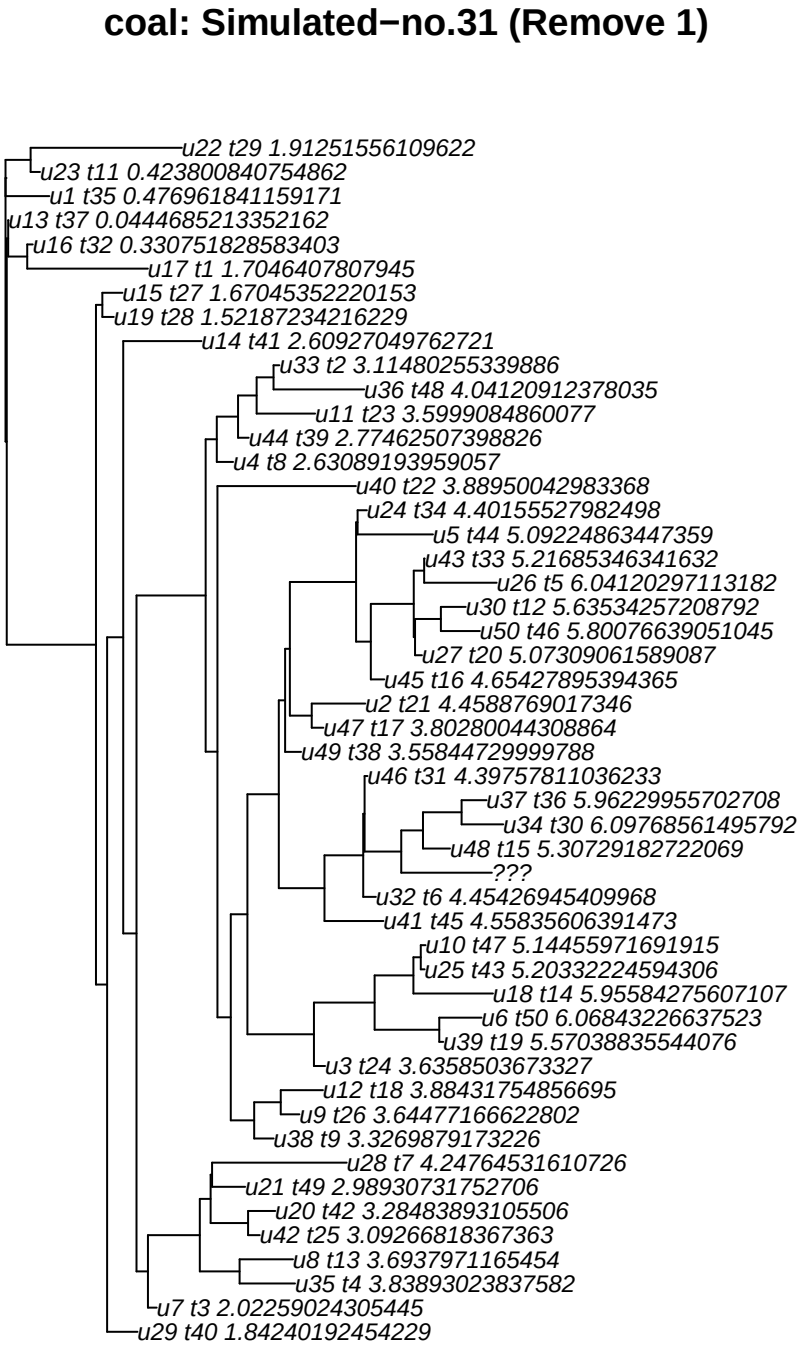

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.000137164)
1
2
3
4
5

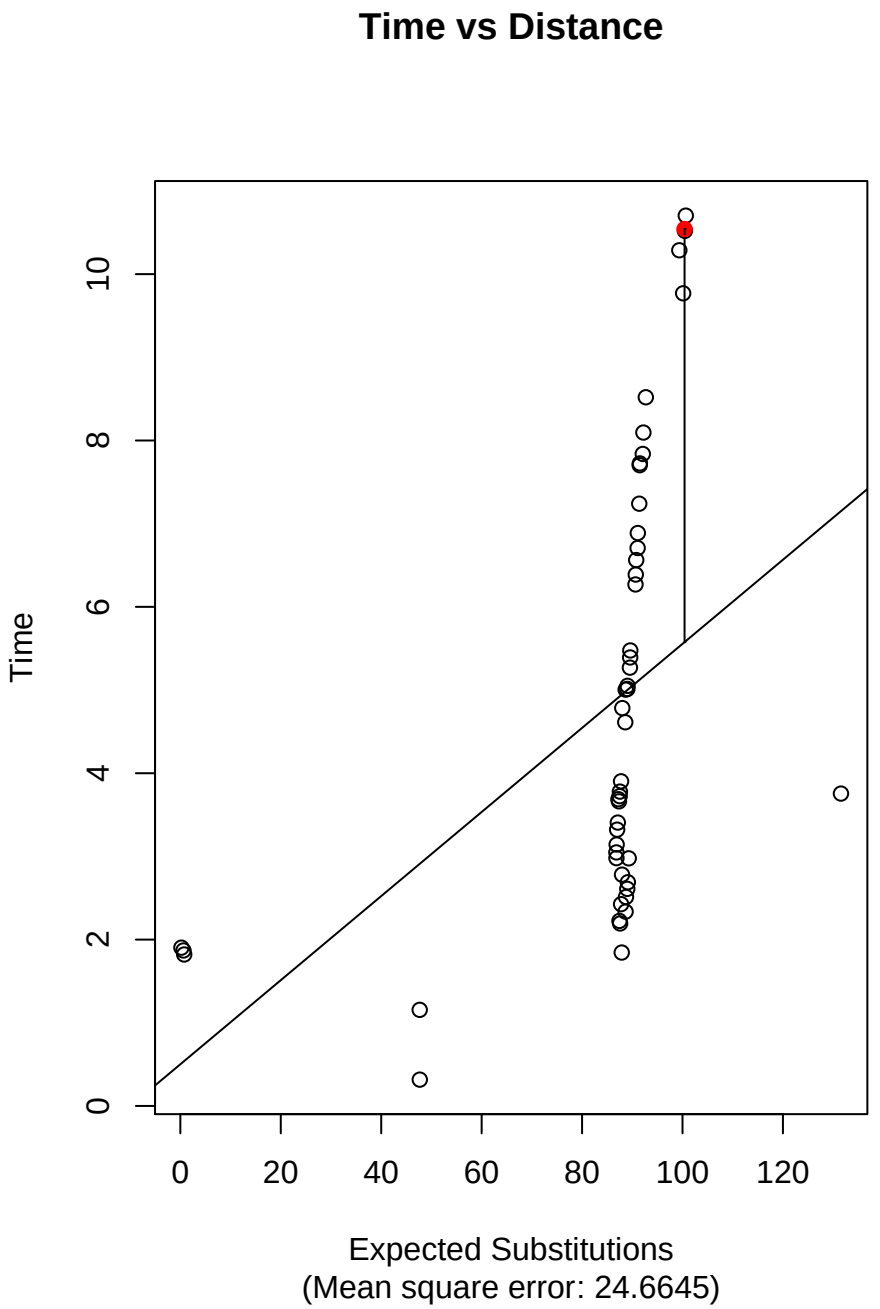

coal: Simulated−no.29 (Remove 1)
u32 t20 0.247498329738583
u18 t29 0.41956209052182
u9 t33 0.246121493161285
u17 t39 1.50888497470668
u43 t35 1.21077090462906
u20 t22 1.52346348057591
u12 t19 0.58673248047065
u41 t46 1.79437148050563
???
u5 t34 0.745858847788816
u25 t30 1.17921113880087
u4 t26 1.8737329013589
u45 t6 1.68756144632526
u36 t3 2.76918468453288
u48 t24 2.79838224406788
u3 t2 3.17381104087538
u11 t28 4.63155694326388
u28 t17 4.50785033550028
u46 t16 4.95797308177608
u40 t49 4.32251161977055
u27 t27 3.77200952950084
u29 t7 4.81410497161935
u50 t12 4.5139067079656
u35 t1 4.00954632804387
u7 t47 3.90106422334086
u31 t45 4.85511534291257
u10 t10 4.55968168980834
u24 t9 3.98938819026079
u33 t5 4.57011716663257
u44 t11 4.43002211596853
u39 t13 4.43754562893219
u8 t32 2.53859647221491
u16 t50 2.4413145612956
u6 t21 3.89138191504624
u13 t44 3.74479706056185
u49 t36 4.01106646283624
u37 t40 4.79766856705015
u34 t14 4.92997061633593
u2 t4 4.71827636535474
u1 t37 3.8790901471453
u30 t25 3.1116659732505
u21 t48 3.31096348826178
u15 t31 2.56480967470072
u19 t42 2.2326682242586
u38 t41 1.71176208042349
u23 t23 1.29059012929911
u47 t43 0.702097748967041
u42 t8 0.684999086025397
u22 t18 0.749140745844549
u14 t15 0.75650365751626

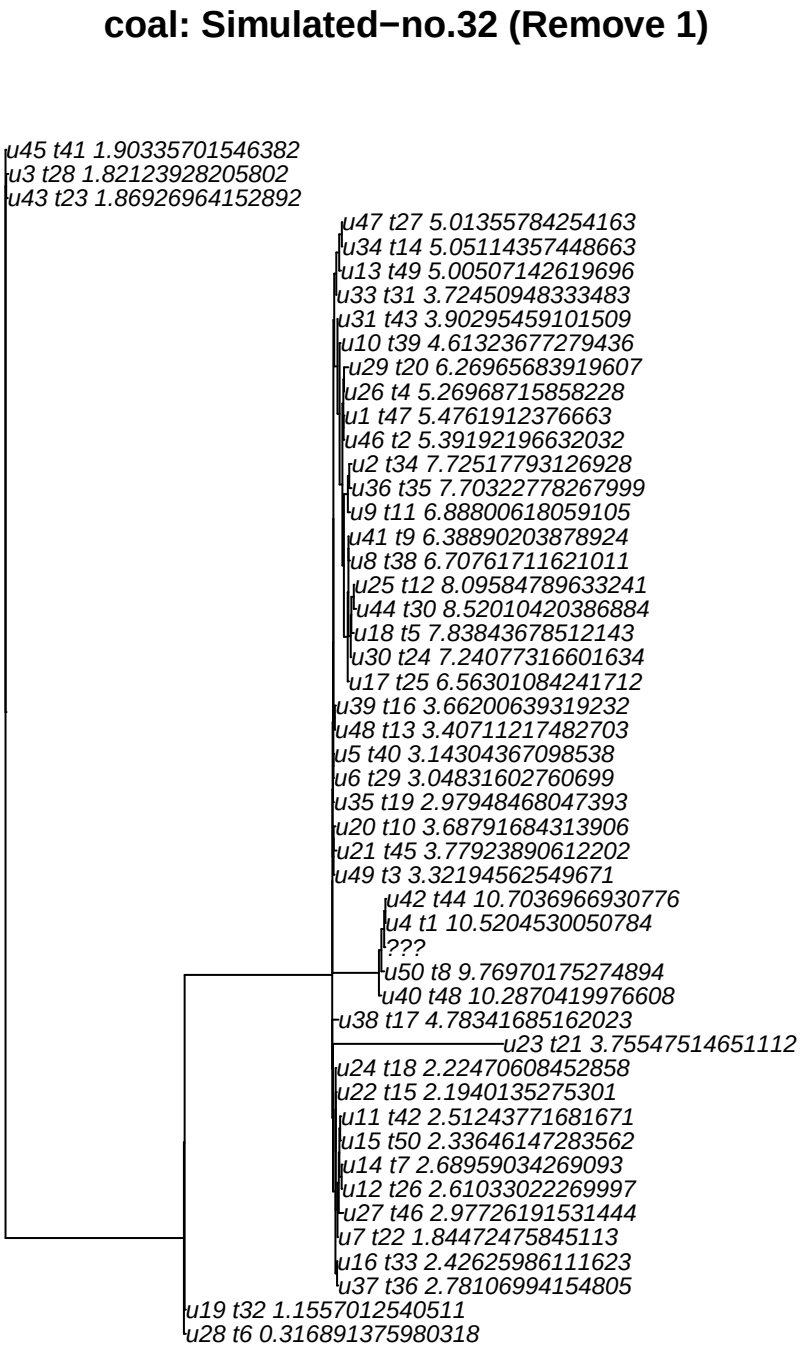

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.337066)
0.5806
0
20
40
60
80
100
120
1
2
3
4
5
6

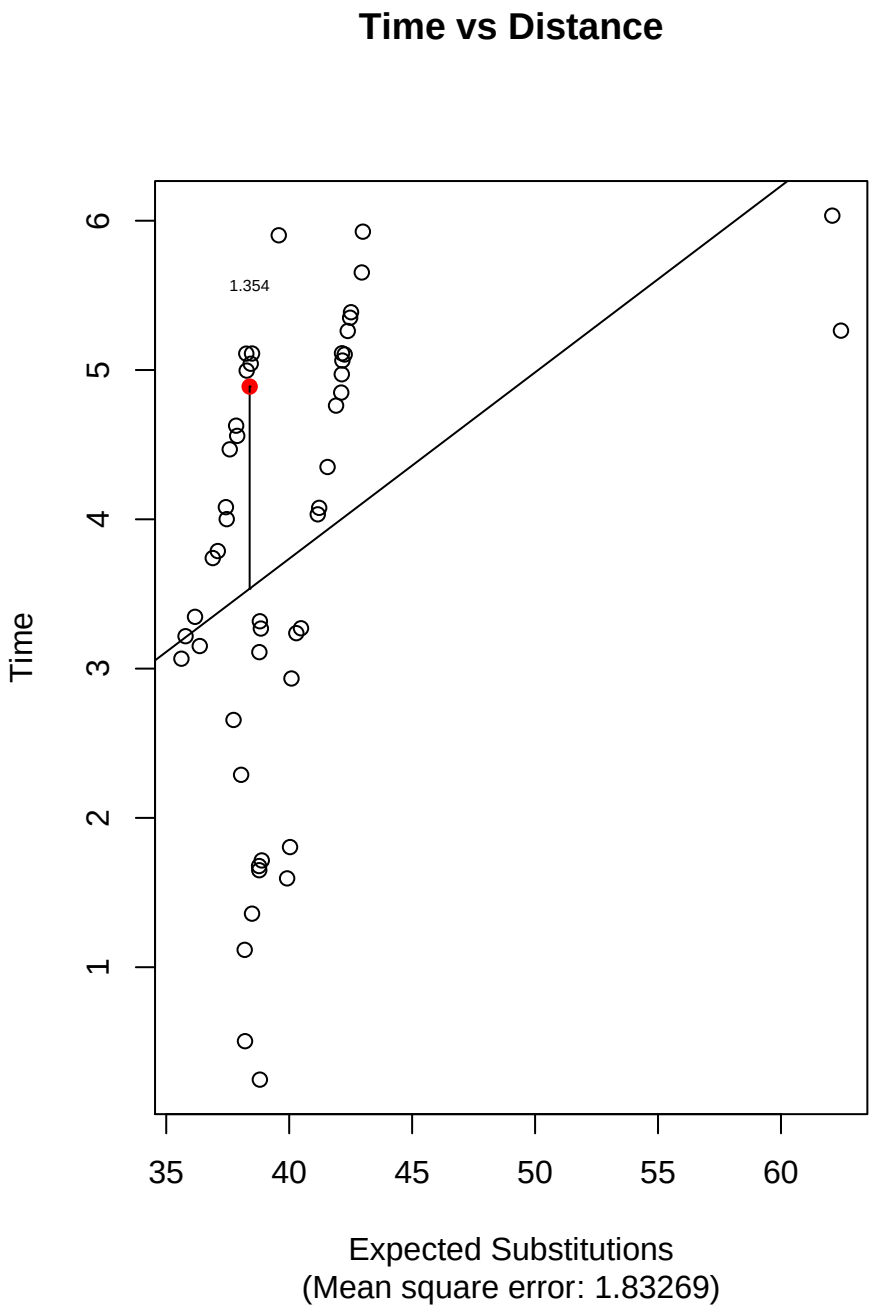

coal: Simulated−no.30 (Remove 1)
u32 t4 1.59505704710215
u49 t27 3.3468699647419
u9 t18 4.55909574127469
u28 t42 4.08157634435274
u46 t16 3.15133472195007
u10 t20 3.74066126584952
u45 t36 4.46882760029119
u4 t2 4.99624621950288
u27 t43 5.90255001356291
u39 t24 5.11082267417832
u34 t48 5.11010806912915
u15 t47 4.6272721465264
u24 t44 3.78759653254036
u16 t22 4.8890616799568
u7 t45 5.04218603762866
???
u6 t5 3.21728300940178
u22 t41 3.06644497319744
u25 t40 6.03432433708552
u38 t50 5.26387276556186
u43 t23 5.11242646737594
u40 t13 5.92686633047346
u31 t1 5.38725804177856
u42 t14 5.26168490194517
u26 t9 4.76180431948211
u37 t37 5.10410733461273
u50 t17 2.93389670614059
u12 t8 3.27027477143896
u14 t28 3.23766242680217
u41 t7 4.03361830010156
u13 t12 4.07691814633371
u11 t29 4.84905050255587
u20 t6 5.06364427993512
u30 t21 5.65364172975515
u35 t39 4.97159970185215
u5 t11 5.35046918322249
u36 t34 4.35065774493989
u29 t31 2.65617643872884
u18 t30 0.504486941575644
u2 t32 0.247080521075986
u21 t49 1.64974147715017
u47 t25 1.67775675988153
u8 t3 1.35870214610097
u19 t46 1.71523498289066
u17 t19 1.11627060278374
u3 t10 3.26859213725814
u23 t15 3.11039064651279
u44 t35 3.31723174080989
u33 t26 2.28875540527007
u48 t33 1.80472390478921

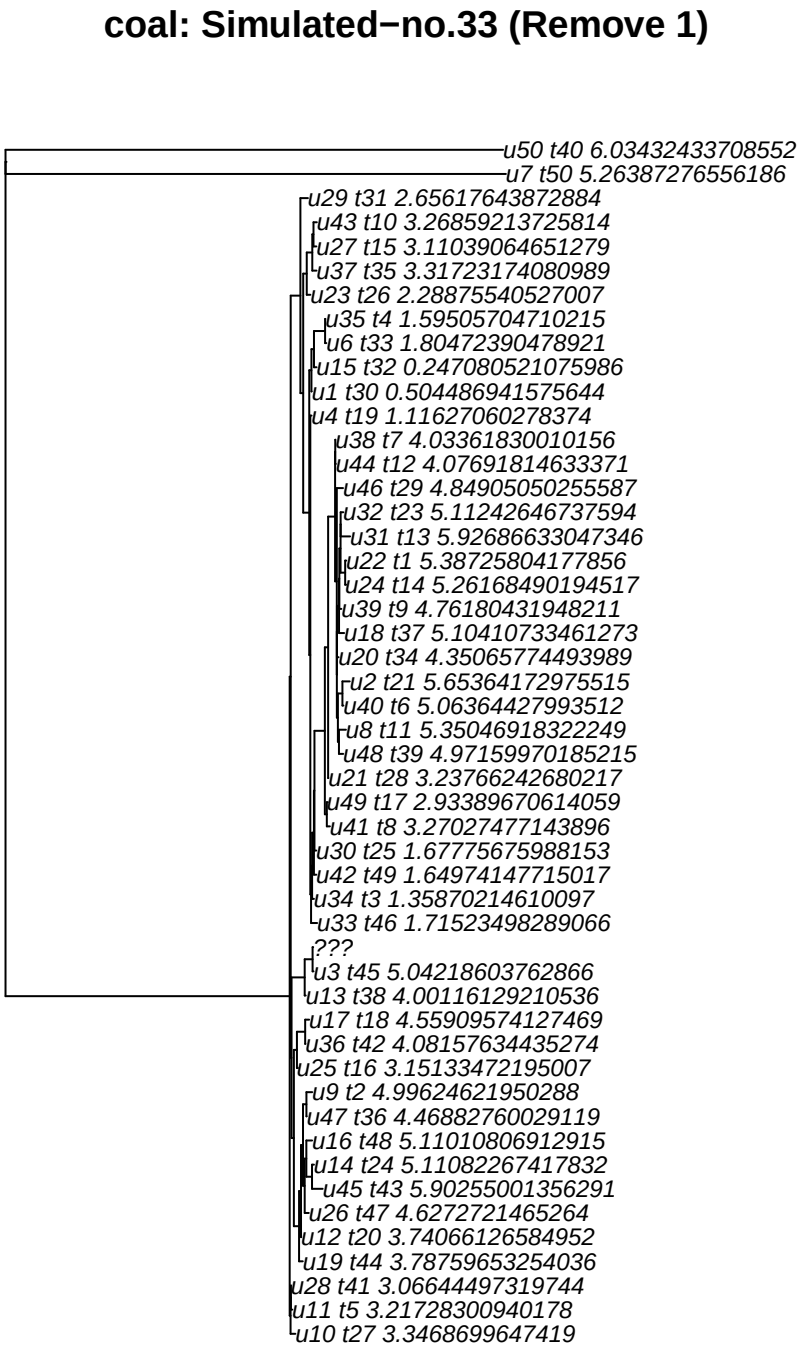

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.07395)
0.2719
0
1
2
3
4
5
6

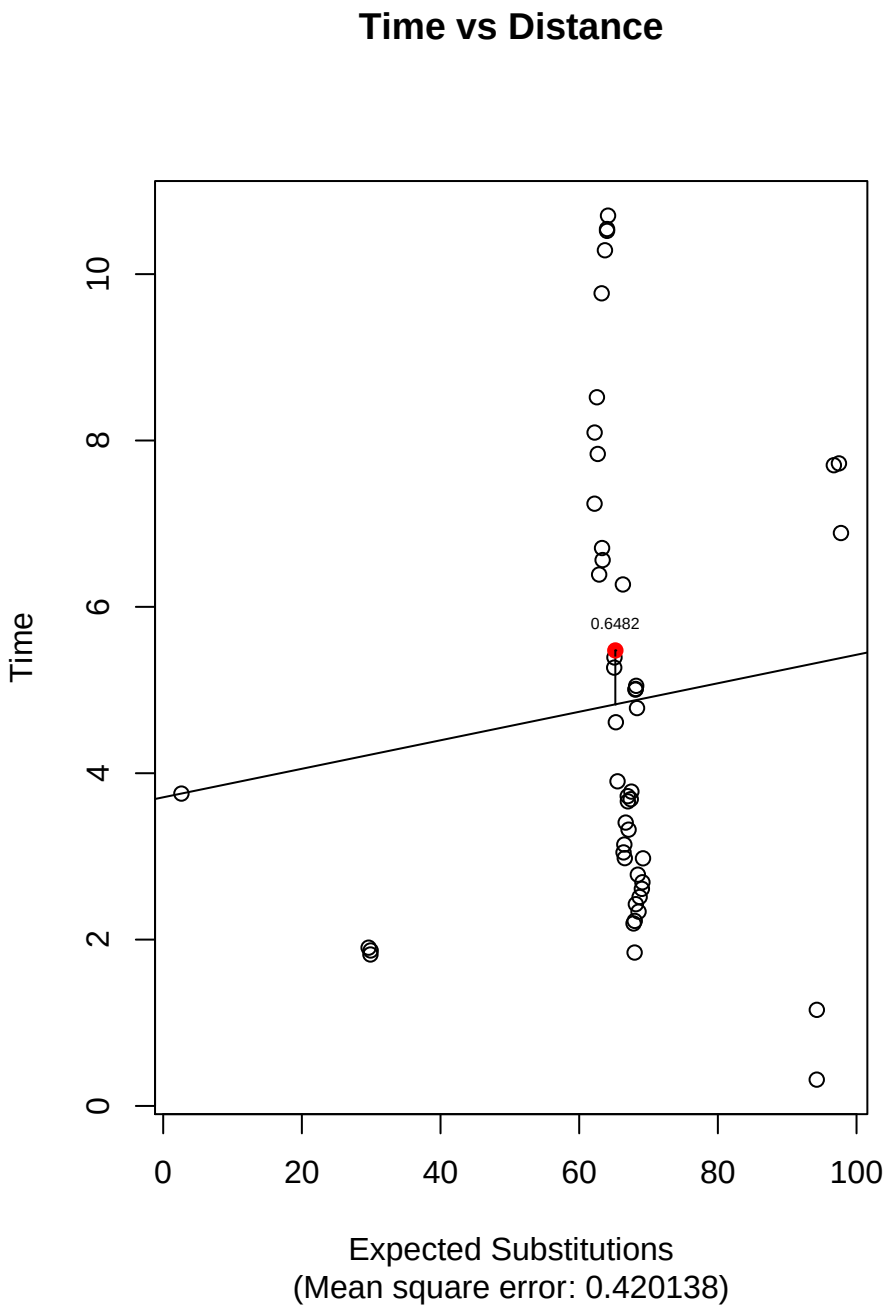

coal: Simulated−no.31 (Remove 1)
u22 t29 1.91251556109622
u23 t11 0.423800840754862
u1 t35 0.476961841159171
u13 t37 0.0444685213352162
u16 t32 0.330751828583403
u17 t1 1.7046407807945
u15 t27 1.67045352220153
u19 t28 1.52187234216229
u14 t41 2.60927049762721
u33 t2 3.11480255339886
u36 t48 4.04120912378035
u11 t23 3.5999084860077
u44 t39 2.77462507398826
u4 t8 2.63089193959057
u40 t22 3.88950042983368
u24 t34 4.40155527982498
u5 t44 5.09224863447359
u43 t33 5.21685346341632
u26 t5 6.04120297113182
u30 t12 5.63534257208792
u50 t46 5.80076639051045
u27 t20 5.07309061589087
u45 t16 4.65427895394365
u2 t21 4.4588769017346
u47 t17 3.80280044308864
u49 t38 3.55844729999788
u46 t31 4.39757811036233
u37 t36 5.96229955702708
u34 t30 6.09768561495792
u48 t15 5.30729182722069
???
u32 t6 4.45426945409968
u41 t45 4.55835606391473
u10 t47 5.14455971691915
u25 t43 5.20332224594306
u18 t14 5.95584275607107
u6 t50 6.06843226637523
u39 t19 5.57038835544076
u3 t24 3.6358503673327
u12 t18 3.88431754856695
u9 t26 3.64477166622802
u38 t9 3.3269879173226
u28 t7 4.24764531610726
u21 t49 2.98930731752706
u20 t42 3.28483893105506
u42 t25 3.09266818367363
u8 t13 3.6937971165454
u35 t4 3.83893023837582
u7 t3 2.02259024305445
u29 t40 1.84240192454229

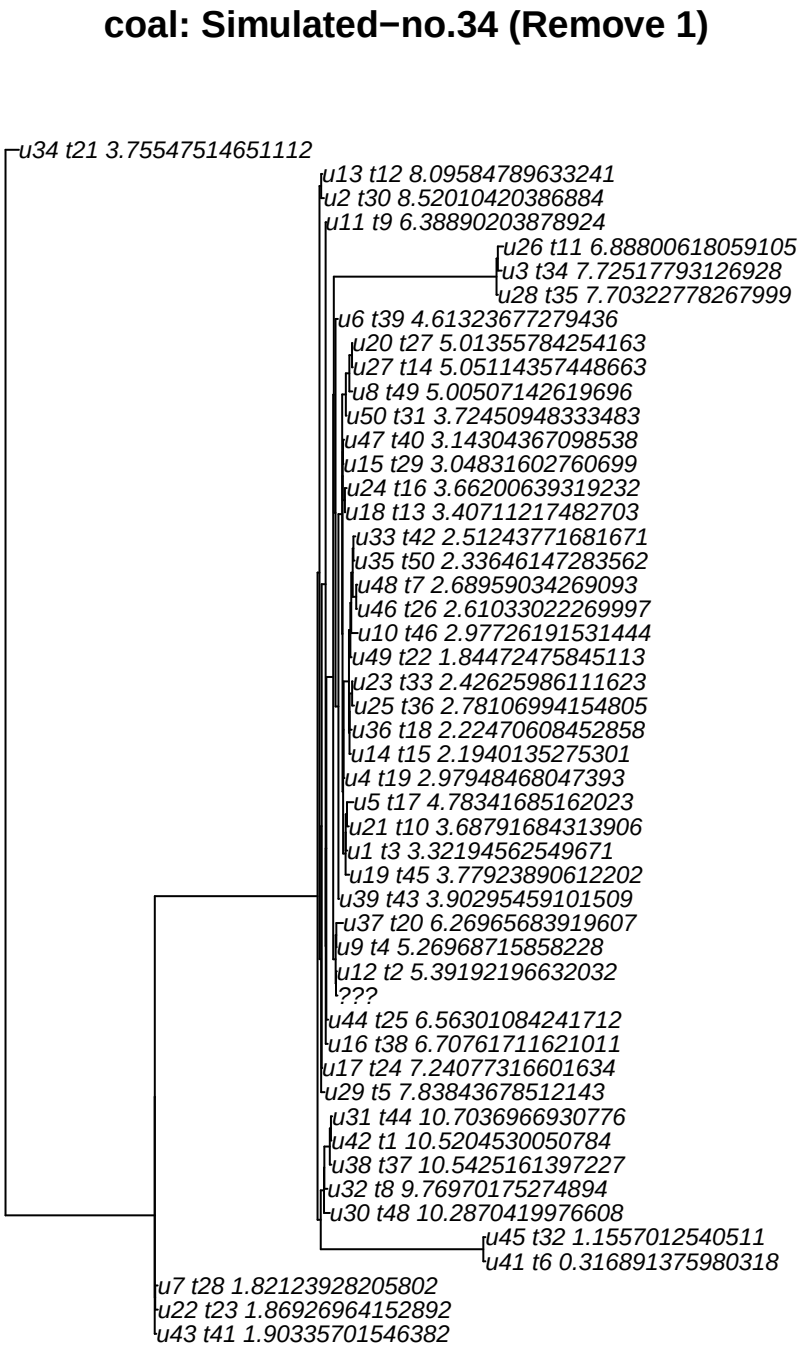

Time vs Distance
Time
0
2
4
6
8
10
0
20
40
60
80
100
120
Expected Substitutions
(Mean square error: 24.6645)

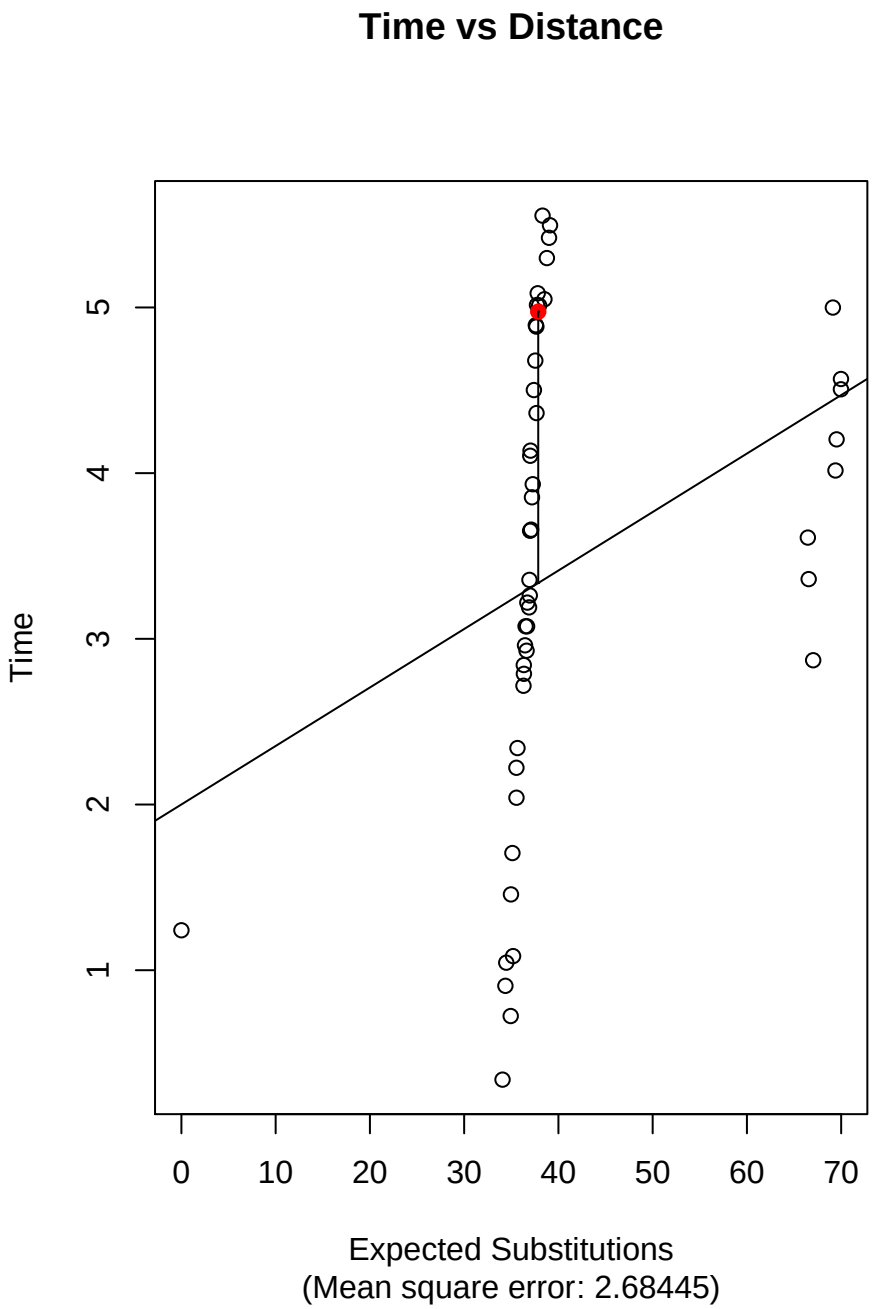

coal: Simulated−no.32 (Remove 1)
u45 t41 1.90335701546382
u3 t28 1.82123928205802
u43 t23 1.86926964152892
u47 t27 5.01355784254163
u34 t14 5.05114357448663
u13 t49 5.00507142619696
u33 t31 3.72450948333483
u31 t43 3.90295459101509
u10 t39 4.61323677279436
u29 t20 6.26965683919607
u26 t4 5.26968715858228
u1 t47 5.4761912376663
u46 t2 5.39192196632032
u2 t34 7.72517793126928
u36 t35 7.70322778267999
u9 t11 6.88800618059105
u41 t9 6.38890203878924
u8 t38 6.70761711621011
u25 t12 8.09584789633241
u44 t30 8.52010420386884
u18 t5 7.83843678512143
u30 t24 7.24077316601634
u17 t25 6.56301084241712
u39 t16 3.66200639319232
u48 t13 3.40711217482703
u5 t40 3.14304367098538
u6 t29 3.04831602760699
u35 t19 2.97948468047393
u20 t10 3.68791684313906
u21 t45 3.77923890612202
u49 t3 3.32194562549671
u42 t44 10.7036966930776
u4 t1 10.5204530050784
???
u50 t8 9.76970175274894
u40 t48 10.2870419976608
u38 t17 4.78341685162023
u23 t21 3.75547514651112
u24 t18 2.22470608452858
u22 t15 2.1940135275301
u11 t42 2.51243771681671
u15 t50 2.33646147283562
u14 t7 2.68959034269093
u12 t26 2.61033022269997
u27 t46 2.97726191531444
u7 t22 1.84472475845113
u16 t33 2.42625986111623
u37 t36 2.78106994154805
u19 t32 1.1557012540511
u28 t6 0.316891375980318

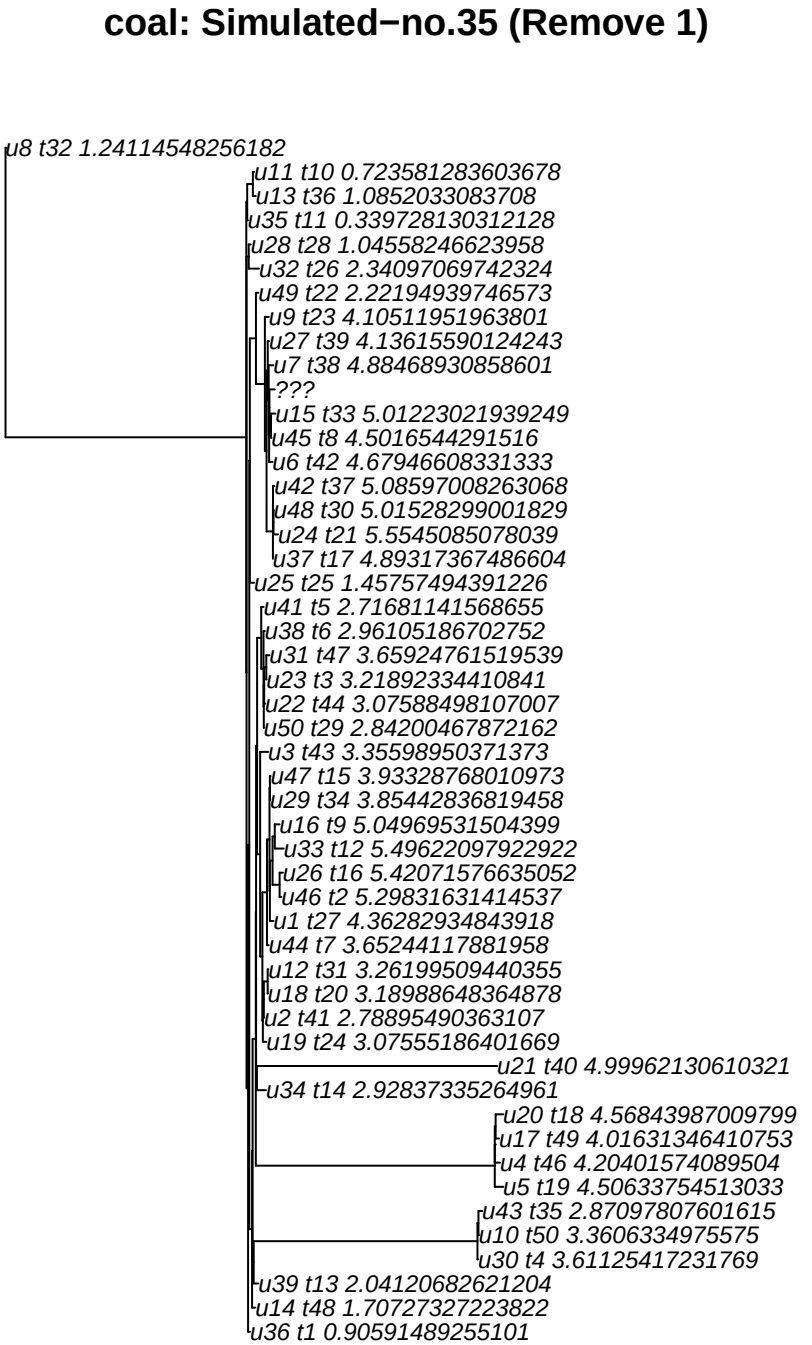

Time vs Distance
1.354
Time
1
2
3
4
5
6
35
40
45
50
55
60
Expected Substitutions
(Mean square error: 1.83269)

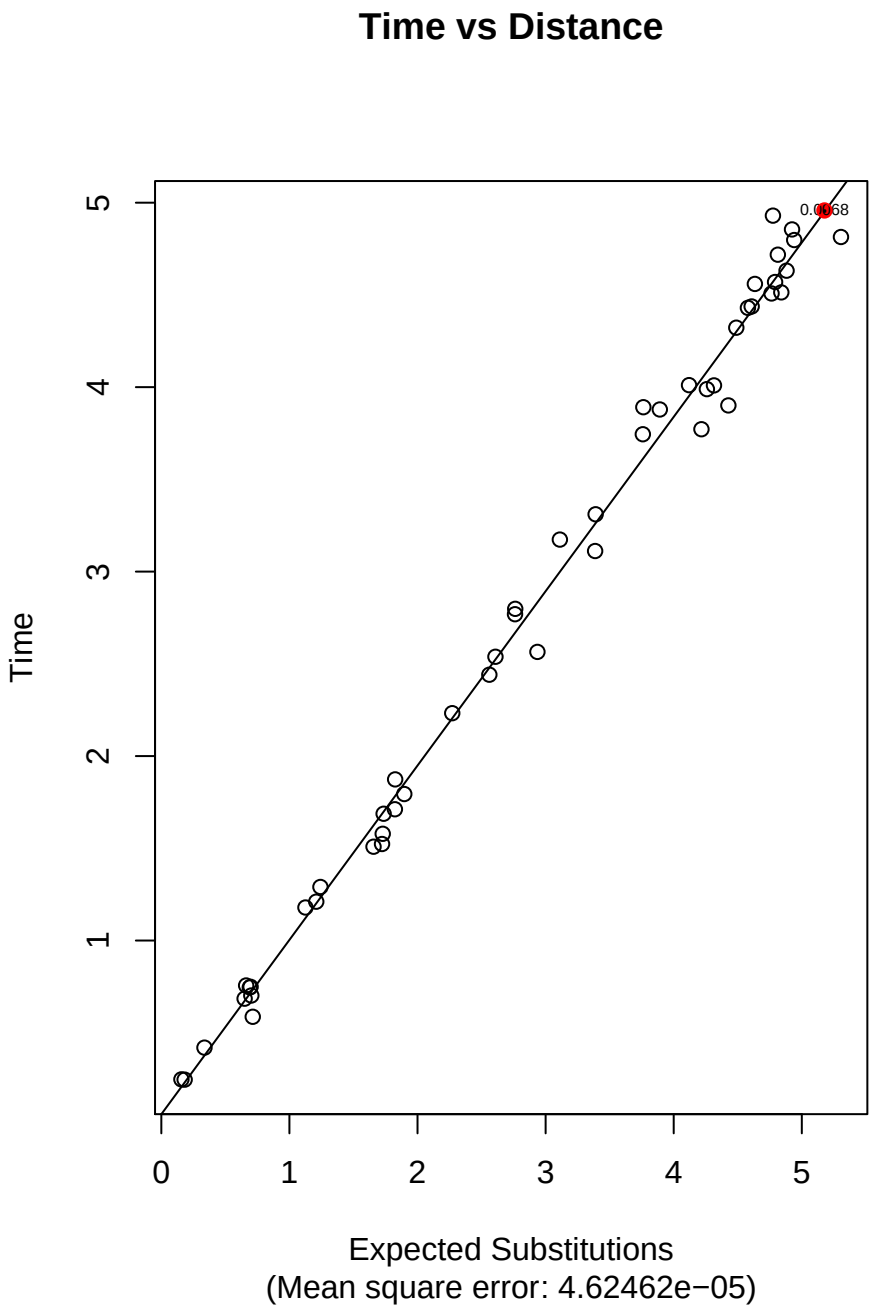

coal: Simulated−no.33 (Remove 1)
u50 t40 6.03432433708552
u7 t50 5.26387276556186
u29 t31 2.65617643872884
u43 t10 3.26859213725814
u27 t15 3.11039064651279
u37 t35 3.31723174080989
u23 t26 2.28875540527007
u35 t4 1.59505704710215
u6 t33 1.80472390478921
u15 t32 0.247080521075986
u1 t30 0.504486941575644
u4 t19 1.11627060278374
u38 t7 4.03361830010156
u44 t12 4.07691814633371
u46 t29 4.84905050255587
u32 t23 5.11242646737594
u31 t13 5.92686633047346
u22 t1 5.38725804177856
u24 t14 5.26168490194517
u39 t9 4.76180431948211
u18 t37 5.10410733461273
u20 t34 4.35065774493989
u2 t21 5.65364172975515
u40 t6 5.06364427993512
u8 t11 5.35046918322249
u48 t39 4.97159970185215
u21 t28 3.23766242680217
u49 t17 2.93389670614059
u41 t8 3.27027477143896
u30 t25 1.67775675988153
u42 t49 1.64974147715017
u34 t3 1.35870214610097
u33 t46 1.71523498289066
???
u3 t45 5.04218603762866
u13 t38 4.00116129210536
u17 t18 4.55909574127469
u36 t42 4.08157634435274
u25 t16 3.15133472195007
u9 t2 4.99624621950288
u47 t36 4.46882760029119
u16 t48 5.11010806912915
u14 t24 5.11082267417832
u45 t43 5.90255001356291
u26 t47 4.6272721465264
u12 t20 3.74066126584952
u19 t44 3.78759653254036
u28 t41 3.06644497319744
u11 t5 3.21728300940178
u10 t27 3.3468699647419

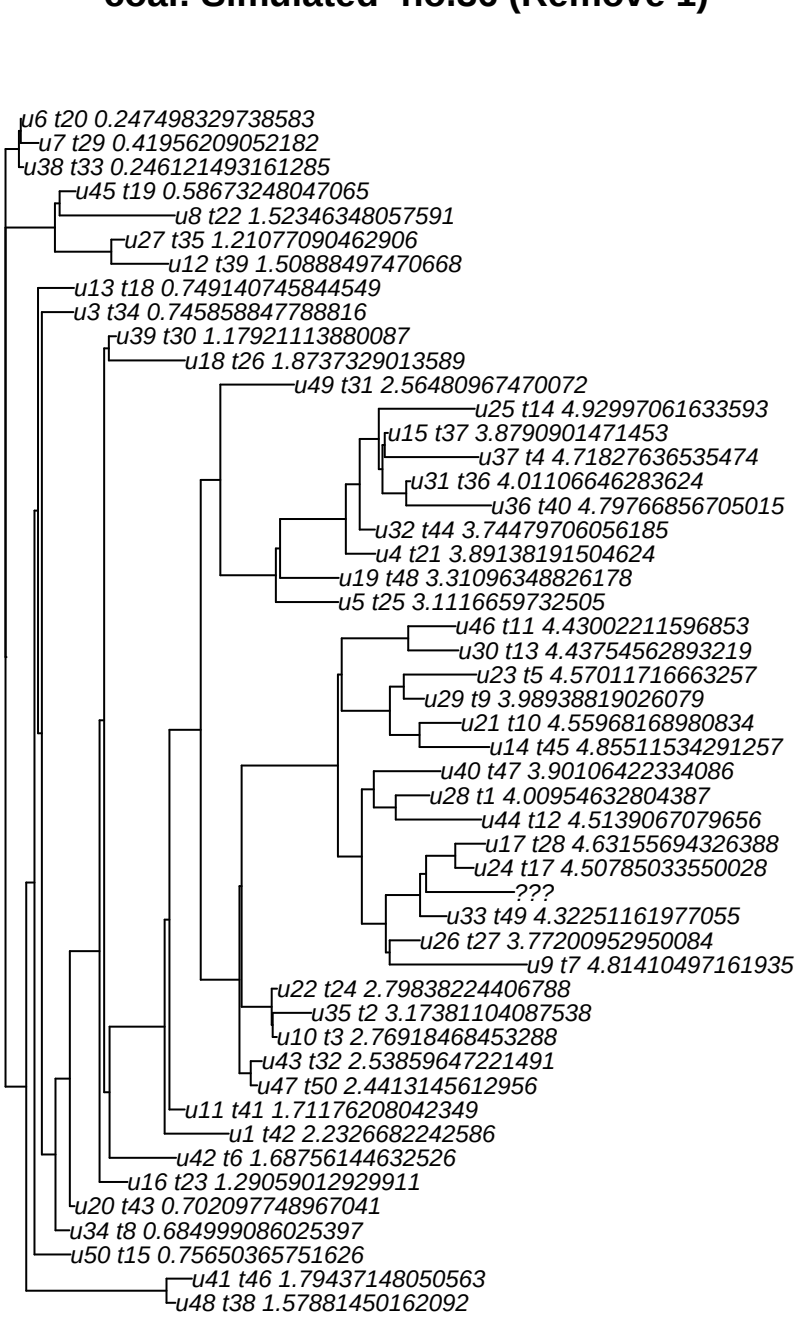

Time vs Distance
Time
0
2
4
6
8
10
0.6482
0
20
40
60
80
100
Expected Substitutions
(Mean square error: 0.420138)

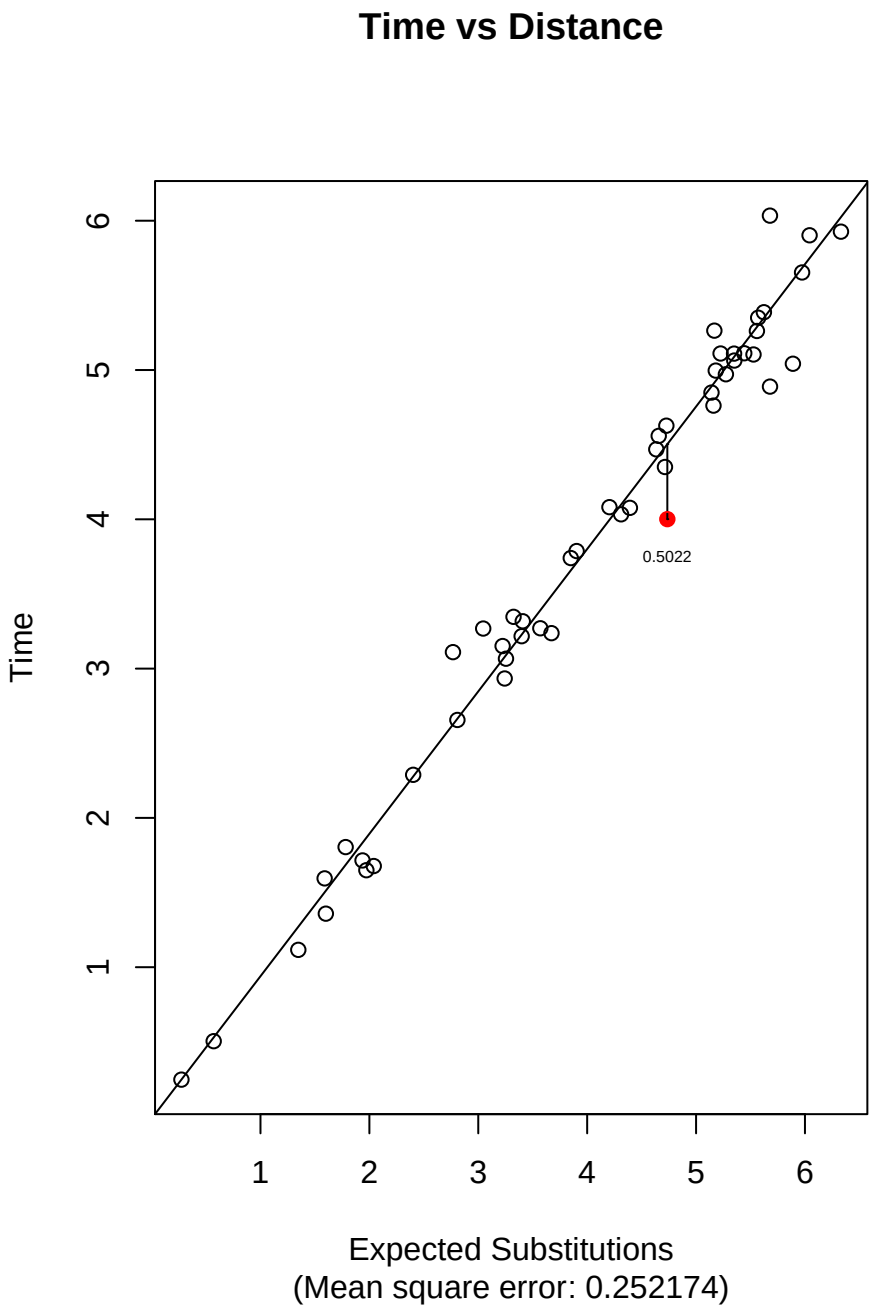

coal: Simulated−no.34 (Remove 1)
u34 t21 3.75547514651112
u13 t12 8.09584789633241
u2 t30 8.52010420386884
u11 t9 6.38890203878924
u26 t11 6.88800618059105
u3 t34 7.72517793126928
u28 t35 7.70322778267999
u6 t39 4.61323677279436
u20 t27 5.01355784254163
u27 t14 5.05114357448663
u8 t49 5.00507142619696
u50 t31 3.72450948333483
u47 t40 3.14304367098538
u15 t29 3.04831602760699
u24 t16 3.66200639319232
u18 t13 3.40711217482703
u33 t42 2.51243771681671
u35 t50 2.33646147283562
u48 t7 2.68959034269093
u46 t26 2.61033022269997
u10 t46 2.97726191531444
u49 t22 1.84472475845113
u23 t33 2.42625986111623
u25 t36 2.78106994154805
u36 t18 2.22470608452858
u14 t15 2.1940135275301
u4 t19 2.97948468047393
u5 t17 4.78341685162023
u21 t10 3.68791684313906
u1 t3 3.32194562549671
u19 t45 3.77923890612202
u39 t43 3.90295459101509
u37 t20 6.26965683919607
u9 t4 5.26968715858228
u12 t2 5.39192196632032
???
u44 t25 6.56301084241712
u16 t38 6.70761711621011
u17 t24 7.24077316601634
u29 t5 7.83843678512143
u31 t44 10.7036966930776
u42 t1 10.5204530050784
u38 t37 10.5425161397227
u32 t8 9.76970175274894
u30 t48 10.2870419976608
u45 t32 1.1557012540511
u41 t6 0.316891375980318
u7 t28 1.82123928205802
u22 t23 1.86926964152892
u43 t41 1.90335701546382

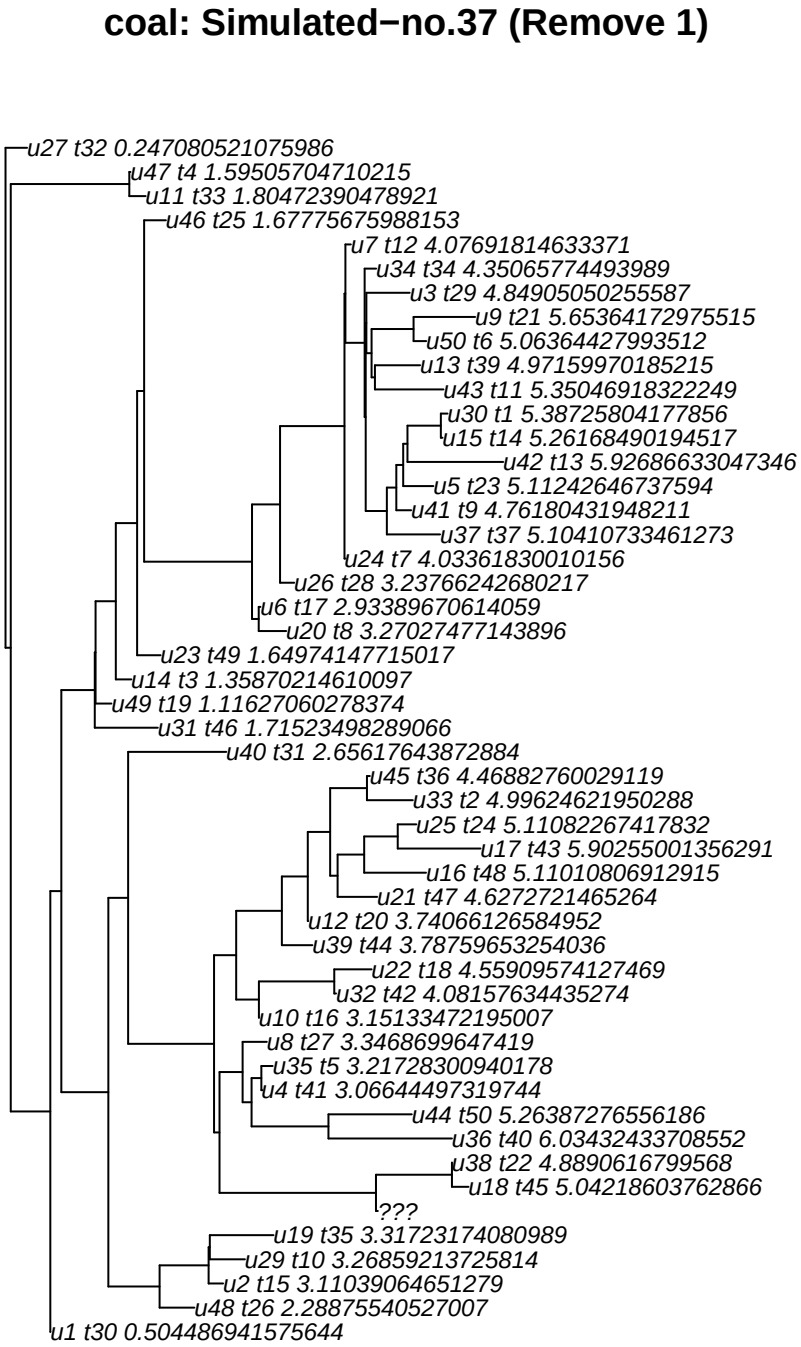

Time vs Distance
Time
1
2
3
4
5
0
10
20
30
40
50
60
70
Expected Substitutions
(Mean square error: 2.68445)

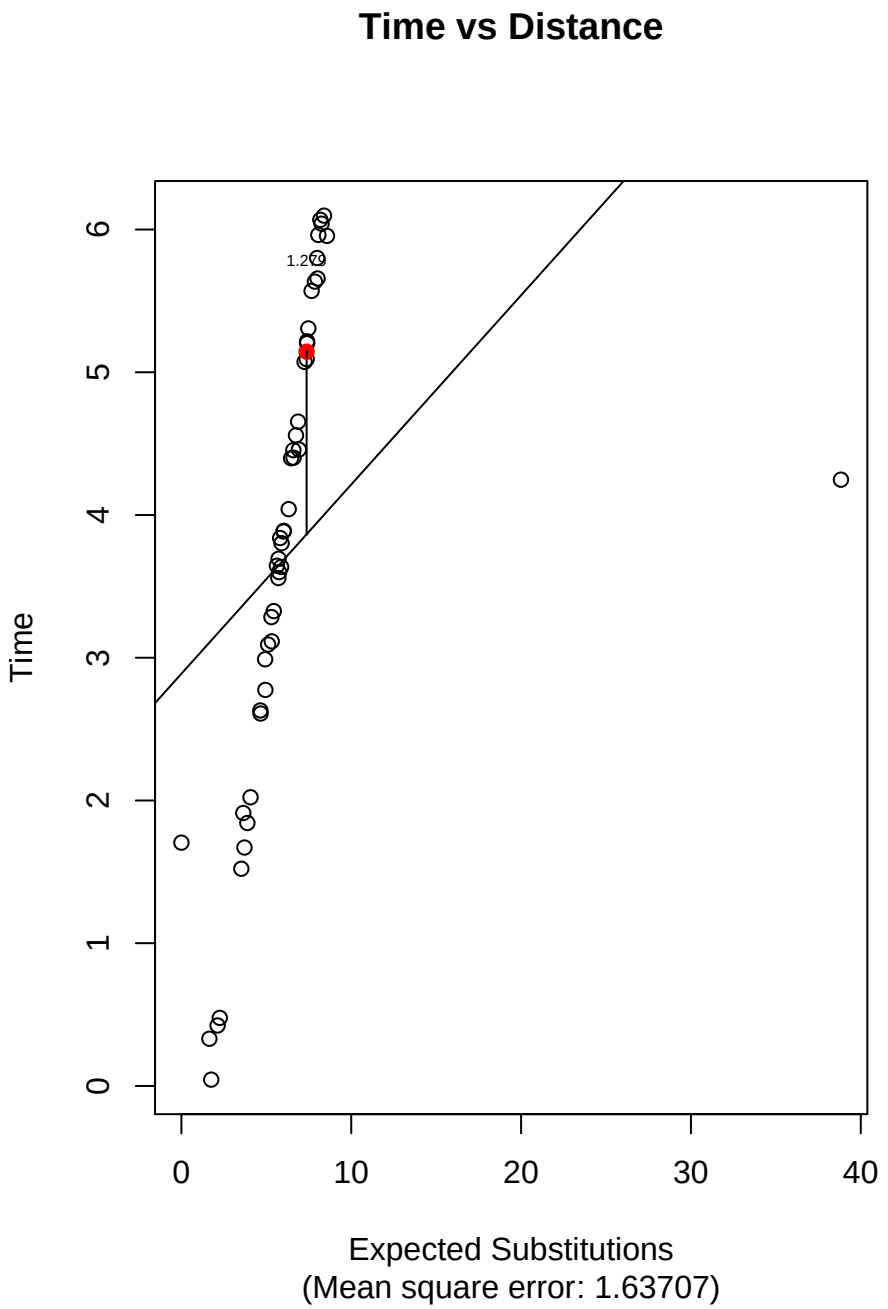

coal: Simulated−no.35 (Remove 1)
u8 t32 1.24114548256182
u11 t10 0.723581283603678
u13 t36 1.0852033083708
u35 t11 0.339728130312128
u28 t28 1.04558246623958
u32 t26 2.34097069742324
u49 t22 2.22194939746573
u9 t23 4.10511951963801
u27 t39 4.13615590124243
u7 t38 4.88468930858601
???
u15 t33 5.01223021939249
u45 t8 4.5016544291516
u6 t42 4.67946608331333
u42 t37 5.08597008263068
u48 t30 5.01528299001829
u24 t21 5.5545085078039
u37 t17 4.89317367486604
u25 t25 1.45757494391226
u41 t5 2.71681141568655
u38 t6 2.96105186702752
u31 t47 3.65924761519539
u23 t3 3.21892334410841
u22 t44 3.07588498107007
u50 t29 2.84200467872162
u3 t43 3.35598950371373
u47 t15 3.93328768010973
u29 t34 3.85442836819458
u16 t9 5.04969531504399
u33 t12 5.49622097922922
u26 t16 5.42071576635052
u46 t2 5.29831631414537
u1 t27 4.36282934843918
u44 t7 3.65244117881958
u12 t31 3.26199509440355
u18 t20 3.18988648364878
u2 t41 2.78895490363107
u19 t24 3.07555186401669
u21 t40 4.99962130610321
u34 t14 2.92837335264961
u20 t18 4.56843987009799
u17 t49 4.01631346410753
u4 t46 4.20401574089504
u5 t19 4.50633754513033
u43 t35 2.87097807601615
u10 t50 3.3606334975575
u30 t4 3.61125417231769
u39 t13 2.04120682621204
u14 t48 1.70727327223822
u36 t1 0.90591489255101

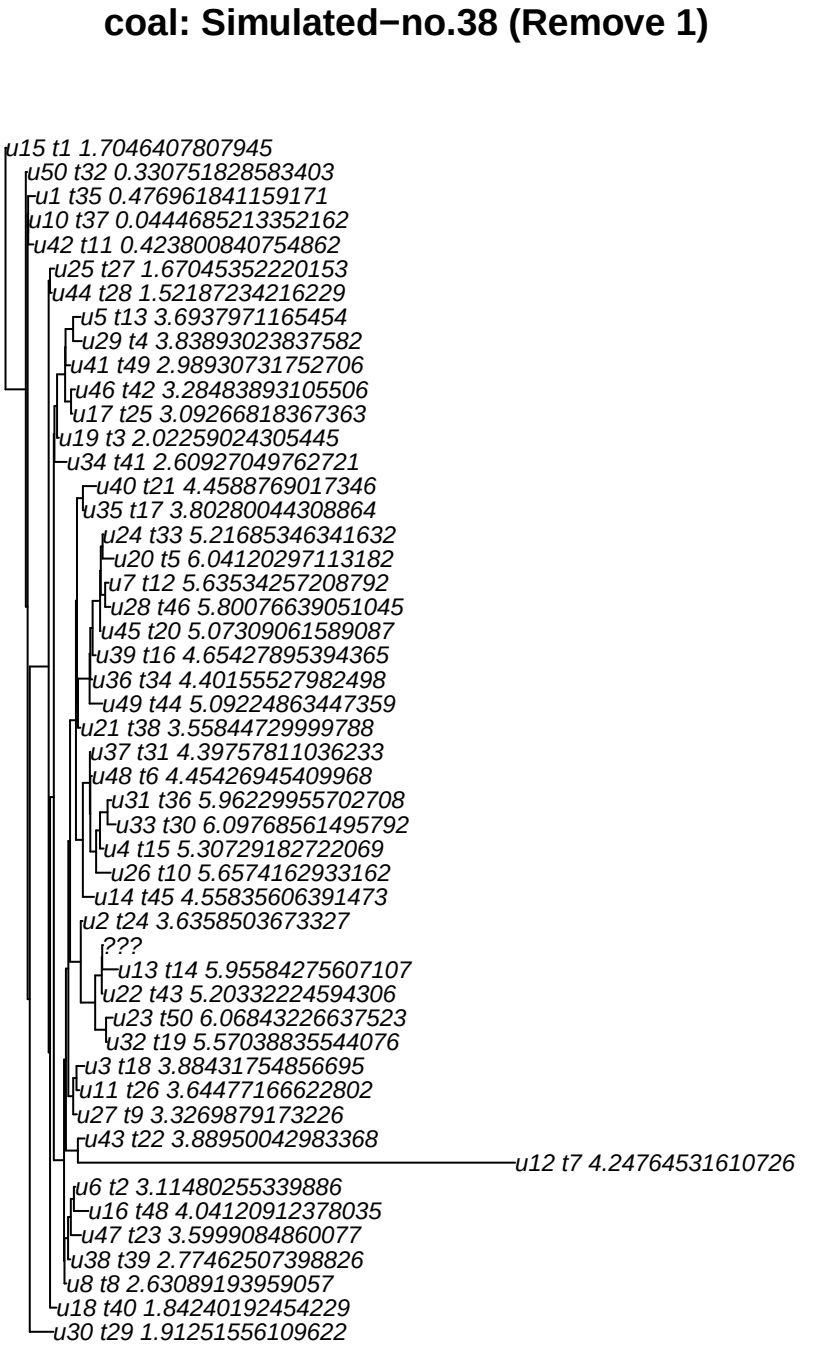

Time vs Distance
Time
Expected Substitutions
(Mean square error: 4.62462e−05)
0
1
2
3
4
5

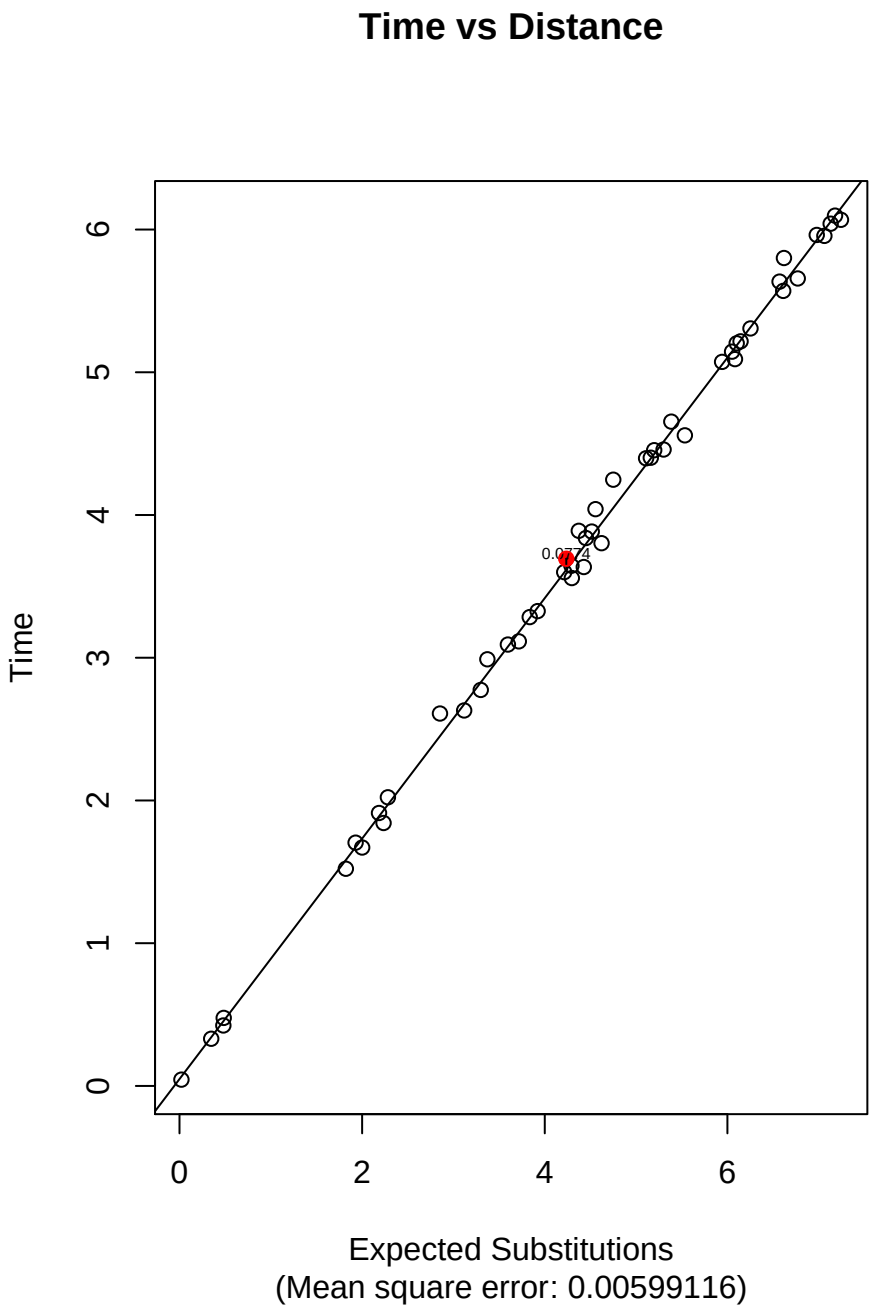

coal: Simulated−no.36 (Remove 1)
u6 t20 0.247498329738583
u7 t29 0.41956209052182
u38 t33 0.246121493161285
u45 t19 0.58673248047065
u8 t22 1.52346348057591
u27 t35 1.21077090462906
u12 t39 1.50888497470668
u13 t18 0.749140745844549
u3 t34 0.745858847788816
u39 t30 1.17921113880087
u18 t26 1.8737329013589
u49 t31 2.56480967470072
u25 t14 4.92997061633593
u15 t37 3.8790901471453
u37 t4 4.71827636535474
u31 t36 4.01106646283624
u36 t40 4.79766856705015
u32 t44 3.74479706056185
u4 t21 3.89138191504624
u19 t48 3.31096348826178
u5 t25 3.1116659732505
u46 t11 4.43002211596853
u30 t13 4.43754562893219
u23 t5 4.57011716663257
u29 t9 3.98938819026079
u21 t10 4.55968168980834
u14 t45 4.85511534291257
u40 t47 3.90106422334086
u28 t1 4.00954632804387
u44 t12 4.5139067079656
u17 t28 4.63155694326388
u24 t17 4.50785033550028
???
u33 t49 4.32251161977055
u26 t27 3.77200952950084
u9 t7 4.81410497161935
u22 t24 2.79838224406788
u35 t2 3.17381104087538
u10 t3 2.76918468453288
u43 t32 2.53859647221491
u47 t50 2.4413145612956
u11 t41 1.71176208042349
u1 t42 2.2326682242586
u42 t6 1.68756144632526
u16 t23 1.29059012929911
u20 t43 0.702097748967041
u34 t8 0.684999086025397
u50 t15 0.75650365751626
u41 t46 1.79437148050563
u48 t38 1.57881450162092

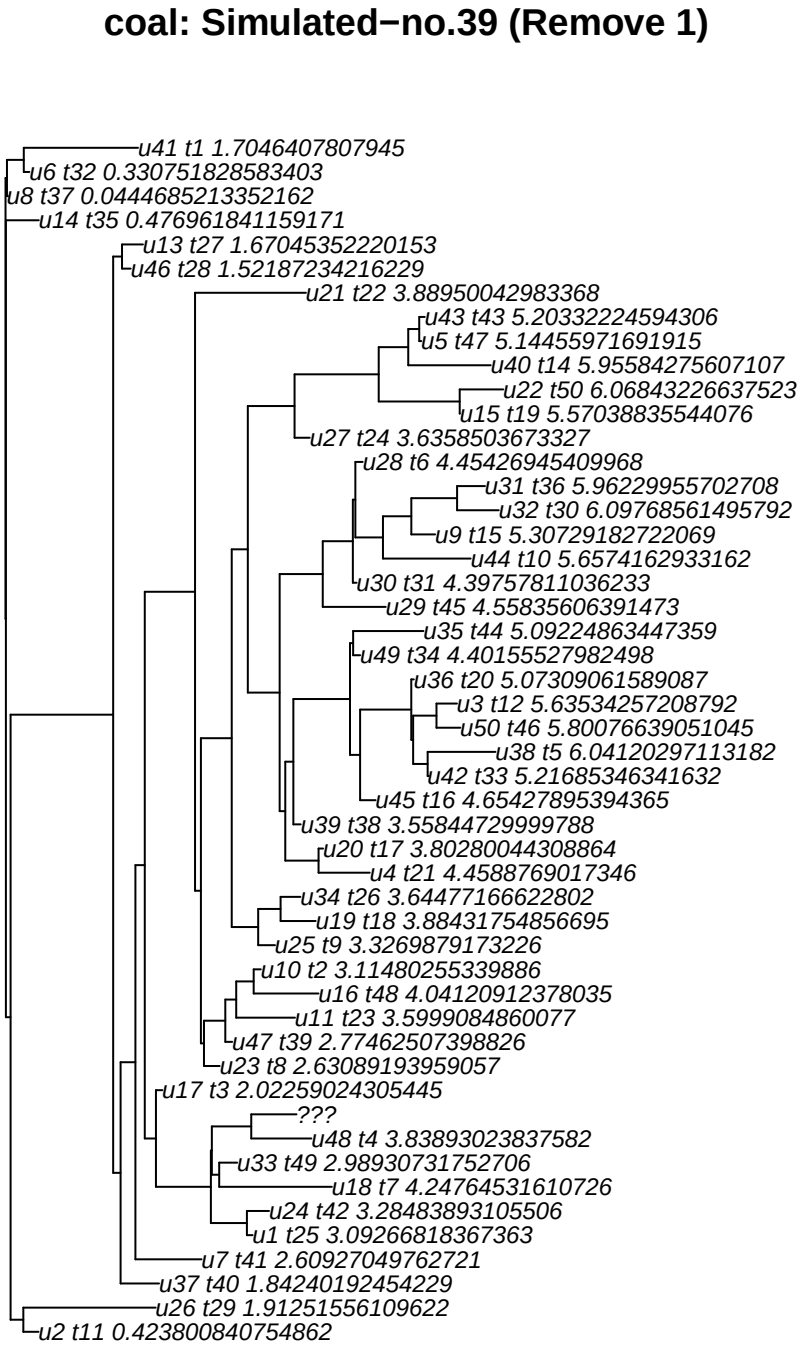

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.252174)
0.5022
1
2
3
4
5
6

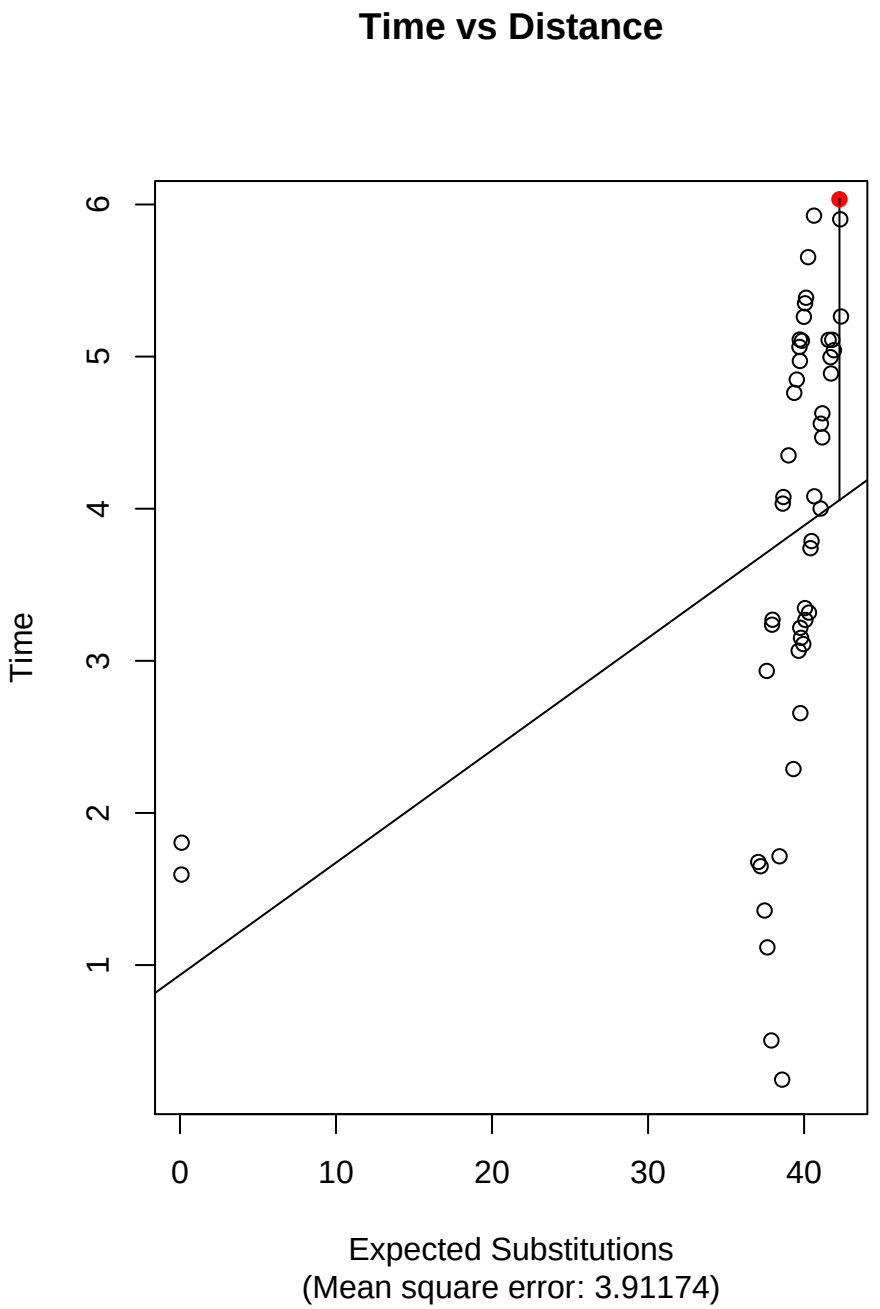

coal: Simulated−no.37 (Remove 1)
u27 t32 0.247080521075986
u47 t4 1.59505704710215
u11 t33 1.80472390478921
u46 t25 1.67775675988153
u7 t12 4.07691814633371
u34 t34 4.35065774493989
u3 t29 4.84905050255587
u9 t21 5.65364172975515
u50 t6 5.06364427993512
u13 t39 4.97159970185215
u43 t11 5.35046918322249
u30 t1 5.38725804177856
u15 t14 5.26168490194517
u42 t13 5.92686633047346
u5 t23 5.11242646737594
u41 t9 4.76180431948211
u37 t37 5.10410733461273
u24 t7 4.03361830010156
u26 t28 3.23766242680217
u6 t17 2.93389670614059
u20 t8 3.27027477143896
u23 t49 1.64974147715017
u14 t3 1.35870214610097
u49 t19 1.11627060278374
u31 t46 1.71523498289066
u40 t31 2.65617643872884
u45 t36 4.46882760029119
u33 t2 4.99624621950288
u25 t24 5.11082267417832
u17 t43 5.90255001356291
u16 t48 5.11010806912915
u21 t47 4.6272721465264
u12 t20 3.74066126584952
u39 t44 3.78759653254036
u22 t18 4.55909574127469
u32 t42 4.08157634435274
u10 t16 3.15133472195007
u8 t27 3.3468699647419
u35 t5 3.21728300940178
u4 t41 3.06644497319744
u44 t50 5.26387276556186
u36 t40 6.03432433708552
u38 t22 4.8890616799568
u18 t45 5.04218603762866
???
u19 t35 3.31723174080989
u29 t10 3.26859213725814
u2 t15 3.11039064651279
u48 t26 2.28875540527007
u1 t30 0.504486941575644

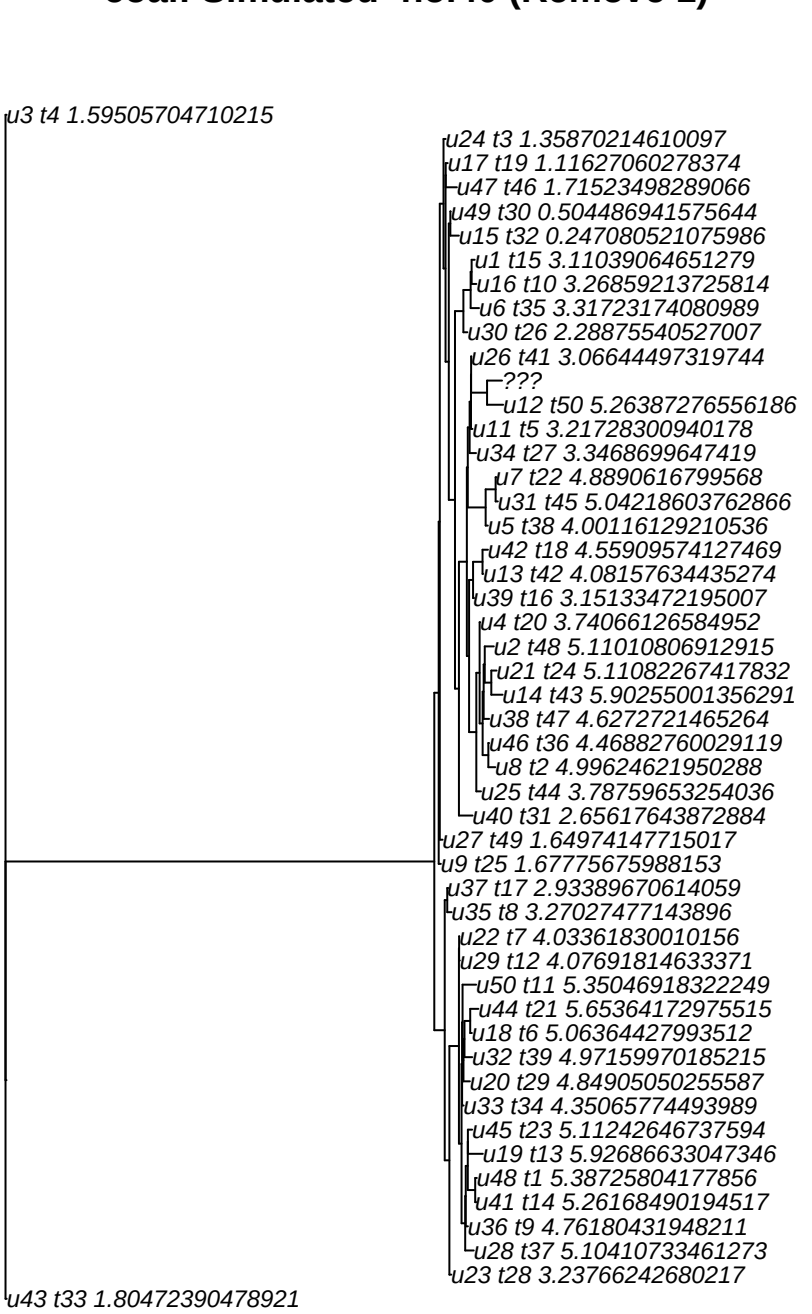

Time vs Distance
Time
0
1
2
3
4
5
6
0
10
20
30
40
Expected Substitutions
(Mean square error: 1.63707)

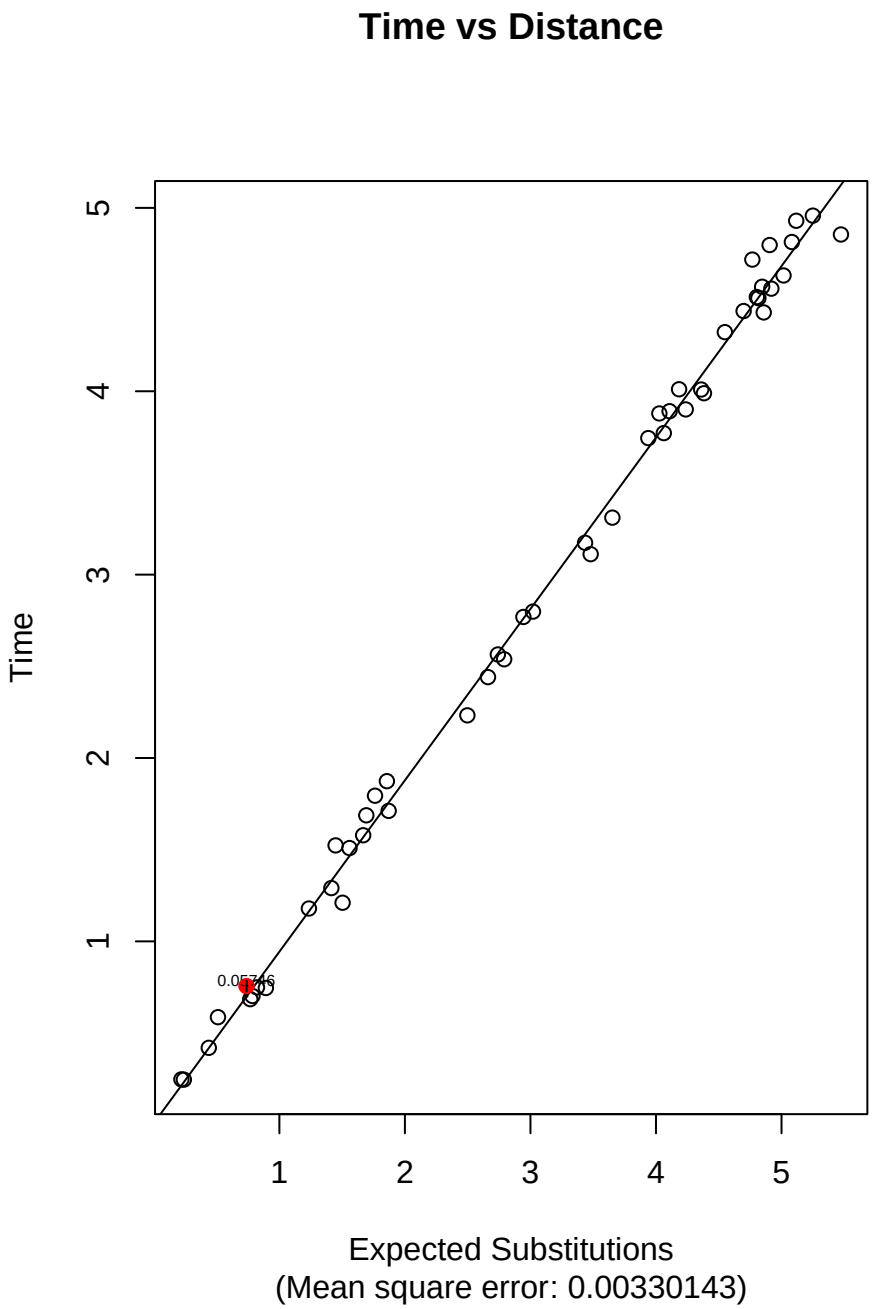

coal: Simulated−no.38 (Remove 1)
u15 t1 1.7046407807945
u50 t32 0.330751828583403
u1 t35 0.476961841159171
u10 t37 0.0444685213352162
u42 t11 0.423800840754862
u25 t27 1.67045352220153
u44 t28 1.52187234216229
u5 t13 3.6937971165454
u29 t4 3.83893023837582
u41 t49 2.98930731752706
u46 t42 3.28483893105506
u17 t25 3.09266818367363
u19 t3 2.02259024305445
u34 t41 2.60927049762721
u40 t21 4.4588769017346
u35 t17 3.80280044308864
u24 t33 5.21685346341632
u20 t5 6.04120297113182
u7 t12 5.63534257208792
u28 t46 5.80076639051045
u45 t20 5.07309061589087
u39 t16 4.65427895394365
u36 t34 4.40155527982498
u49 t44 5.09224863447359
u21 t38 3.55844729999788
u37 t31 4.39757811036233
u48 t6 4.45426945409968
u31 t36 5.96229955702708
u33 t30 6.09768561495792
u4 t15 5.30729182722069
u26 t10 5.6574162933162
u14 t45 4.55835606391473
u2 t24 3.6358503673327
???
u13 t14 5.95584275607107
u22 t43 5.20332224594306
u23 t50 6.06843226637523
u32 t19 5.57038835544076
u3 t18 3.88431754856695
u11 t26 3.64477166622802
u27 t9 3.3269879173226
u43 t22 3.88950042983368
u12 t7 4.24764531610726
u6 t2 3.11480255339886
u16 t48 4.04120912378035
u47 t23 3.5999084860077
u38 t39 2.77462507398826
u8 t8 2.63089193959057
u18 t40 1.84240192454229
u30 t29 1.91251556109622

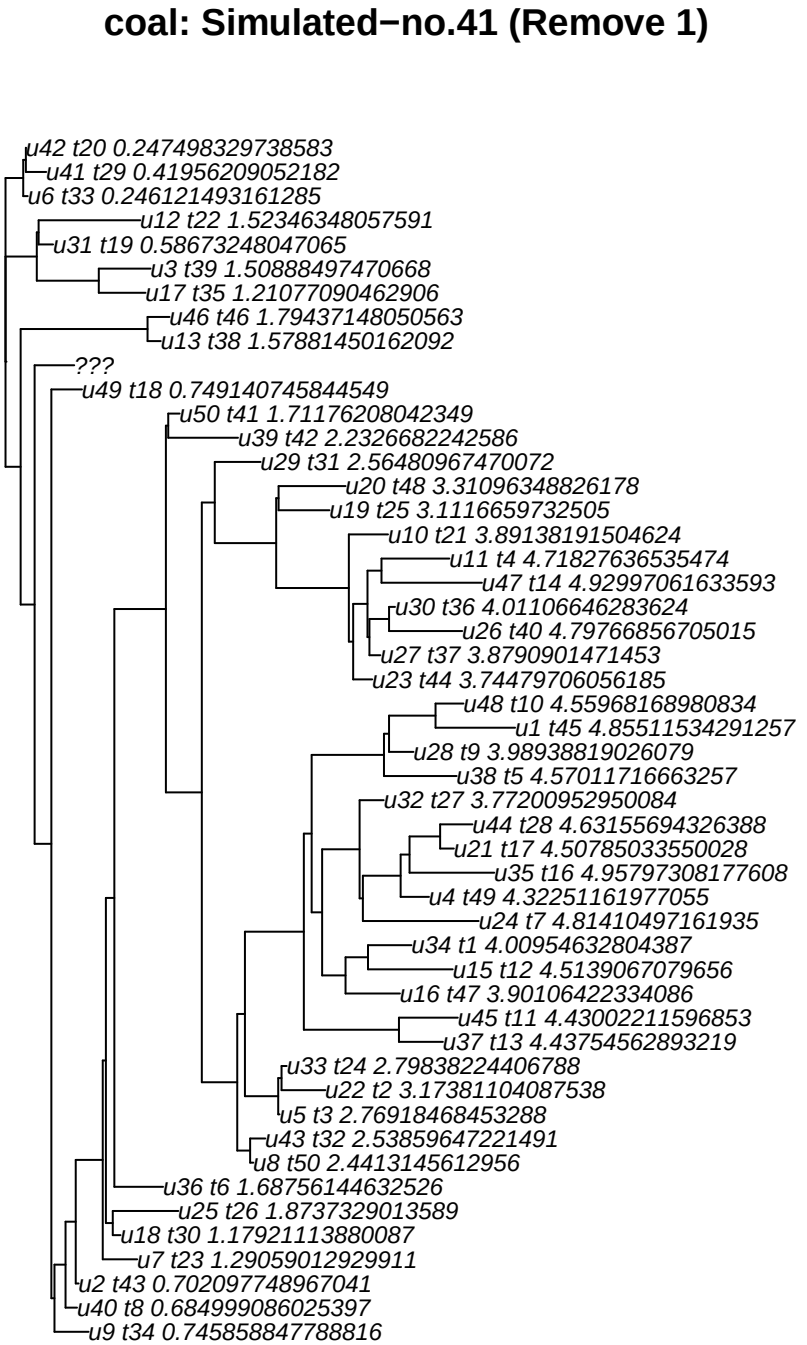

Time vs Distance
Time
0
1
2
3
4
5
6
0
2
4
6
Expected Substitutions
(Mean square error: 0.00599116)

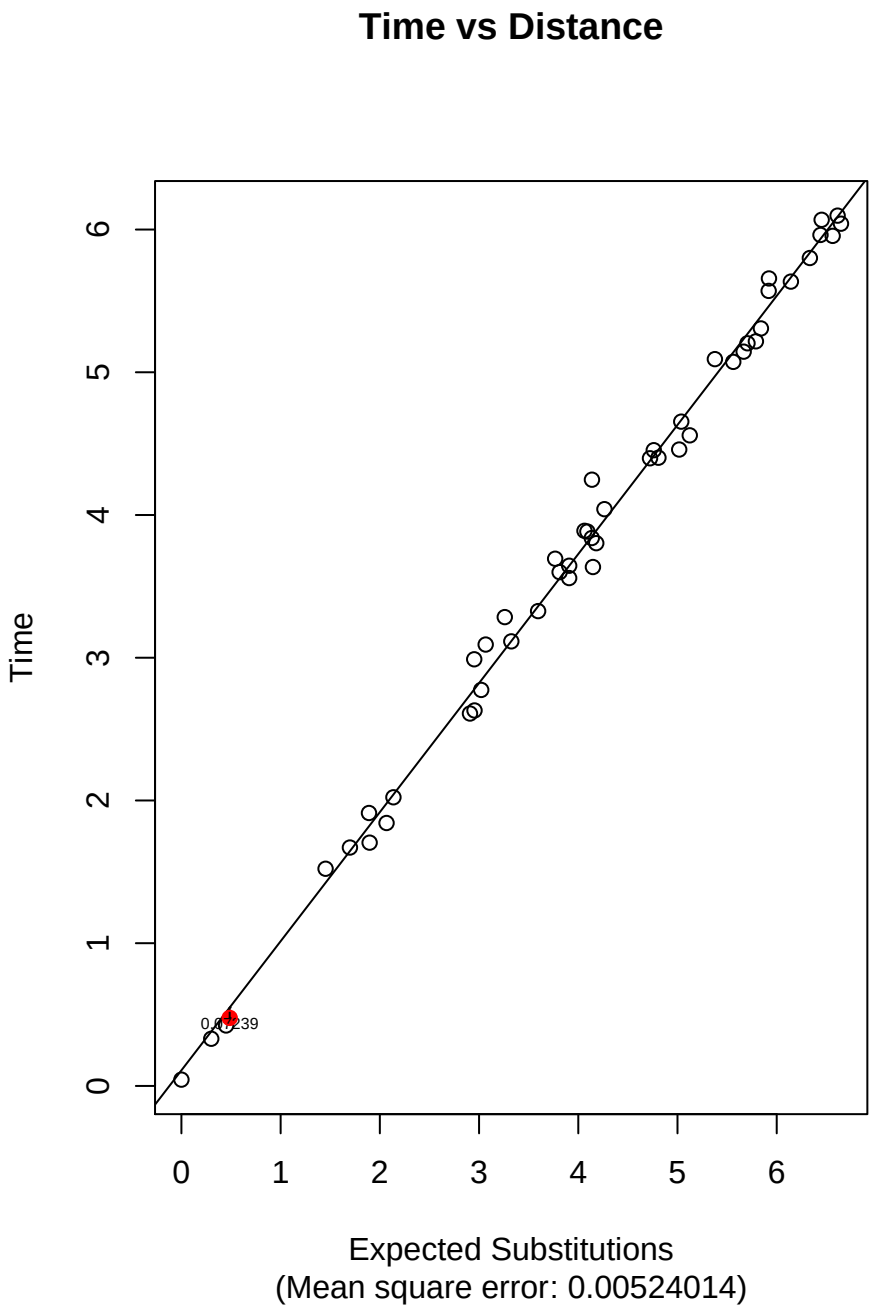

coal: Simulated−no.39 (Remove 1)
u41 t1 1.7046407807945
u6 t32 0.330751828583403
u8 t37 0.0444685213352162
u14 t35 0.476961841159171
u13 t27 1.67045352220153
u46 t28 1.52187234216229
u21 t22 3.88950042983368
u43 t43 5.20332224594306
u5 t47 5.14455971691915
u40 t14 5.95584275607107
u22 t50 6.06843226637523
u15 t19 5.57038835544076
u27 t24 3.6358503673327
u28 t6 4.45426945409968
u31 t36 5.96229955702708
u32 t30 6.09768561495792
u9 t15 5.30729182722069
u44 t10 5.6574162933162
u30 t31 4.39757811036233
u29 t45 4.55835606391473
u35 t44 5.09224863447359
u49 t34 4.40155527982498
u36 t20 5.07309061589087
u3 t12 5.63534257208792
u50 t46 5.80076639051045
u38 t5 6.04120297113182
u42 t33 5.21685346341632
u45 t16 4.65427895394365
u39 t38 3.55844729999788
u20 t17 3.80280044308864
u4 t21 4.4588769017346
u34 t26 3.64477166622802
u19 t18 3.88431754856695
u25 t9 3.3269879173226
u10 t2 3.11480255339886
u16 t48 4.04120912378035
u11 t23 3.5999084860077
u47 t39 2.77462507398826
u23 t8 2.63089193959057
u17 t3 2.02259024305445
???
u48 t4 3.83893023837582
u33 t49 2.98930731752706
u18 t7 4.24764531610726
u24 t42 3.28483893105506
u1 t25 3.09266818367363
u7 t41 2.60927049762721
u37 t40 1.84240192454229
u26 t29 1.91251556109622
u2 t11 0.423800840754862

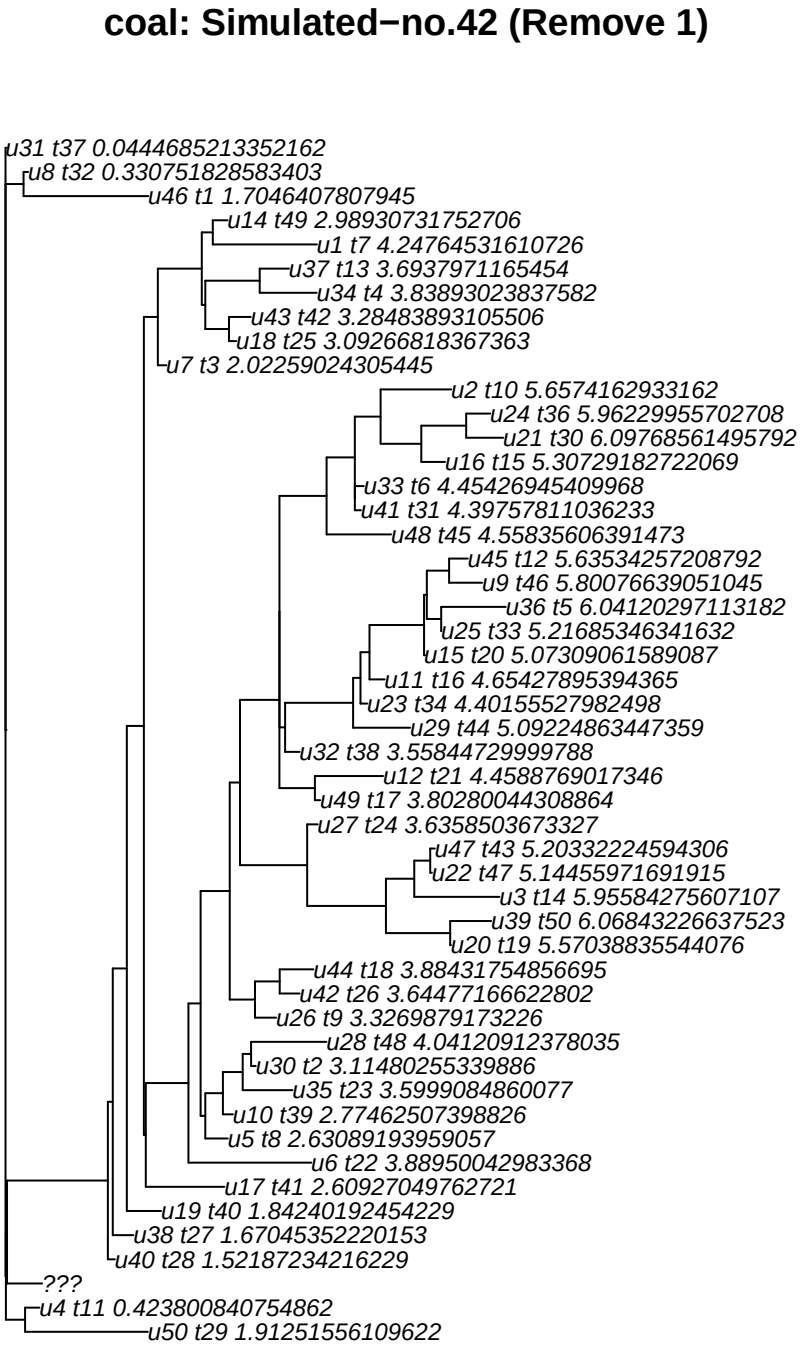

Time vs Distance
Time
1
2
3
4
5
6
0
10
20
30
40
Expected Substitutions
(Mean square error: 3.91174)

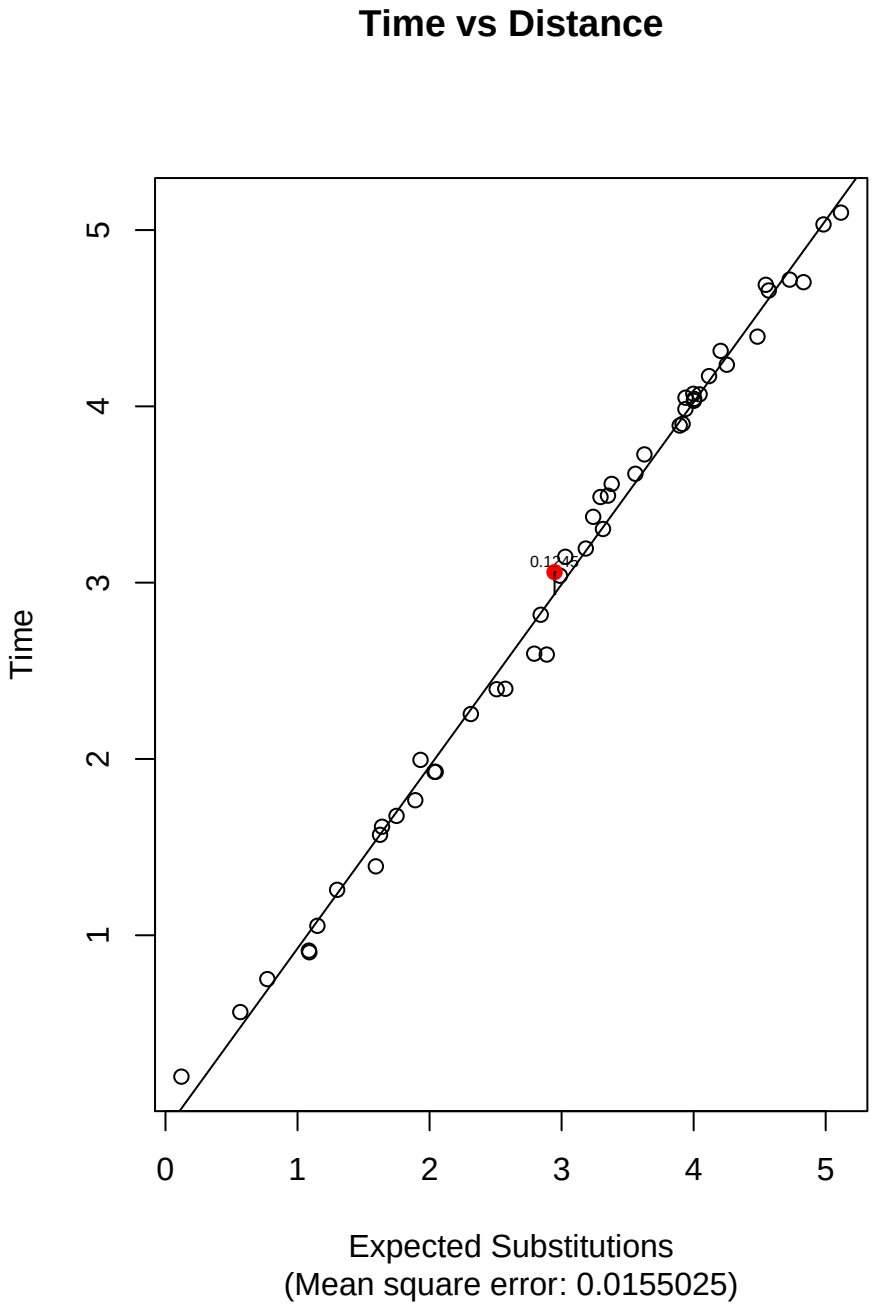

coal: Simulated−no.40 (Remove 1)
u3 t4 1.59505704710215
u24 t3 1.35870214610097
u17 t19 1.11627060278374
u47 t46 1.71523498289066
u49 t30 0.504486941575644
u15 t32 0.247080521075986
u1 t15 3.11039064651279
u16 t10 3.26859213725814
u6 t35 3.31723174080989
u30 t26 2.28875540527007
u26 t41 3.06644497319744
???
u12 t50 5.26387276556186
u11 t5 3.21728300940178
u34 t27 3.3468699647419
u7 t22 4.8890616799568
u31 t45 5.04218603762866
u5 t38 4.00116129210536
u42 t18 4.55909574127469
u13 t42 4.08157634435274
u39 t16 3.15133472195007
u4 t20 3.74066126584952
u2 t48 5.11010806912915
u21 t24 5.11082267417832
u14 t43 5.90255001356291
u38 t47 4.6272721465264
u46 t36 4.46882760029119
u8 t2 4.99624621950288
u25 t44 3.78759653254036
u40 t31 2.65617643872884
u27 t49 1.64974147715017
u9 t25 1.67775675988153
u37 t17 2.93389670614059
u35 t8 3.27027477143896
u22 t7 4.03361830010156
u29 t12 4.07691814633371
u50 t11 5.35046918322249
u44 t21 5.65364172975515
u18 t6 5.06364427993512
u32 t39 4.97159970185215
u20 t29 4.84905050255587
u33 t34 4.35065774493989
u45 t23 5.11242646737594
u19 t13 5.92686633047346
u48 t1 5.38725804177856
u41 t14 5.26168490194517
u36 t9 4.76180431948211
u28 t37 5.10410733461273
u23 t28 3.23766242680217
u43 t33 1.80472390478921

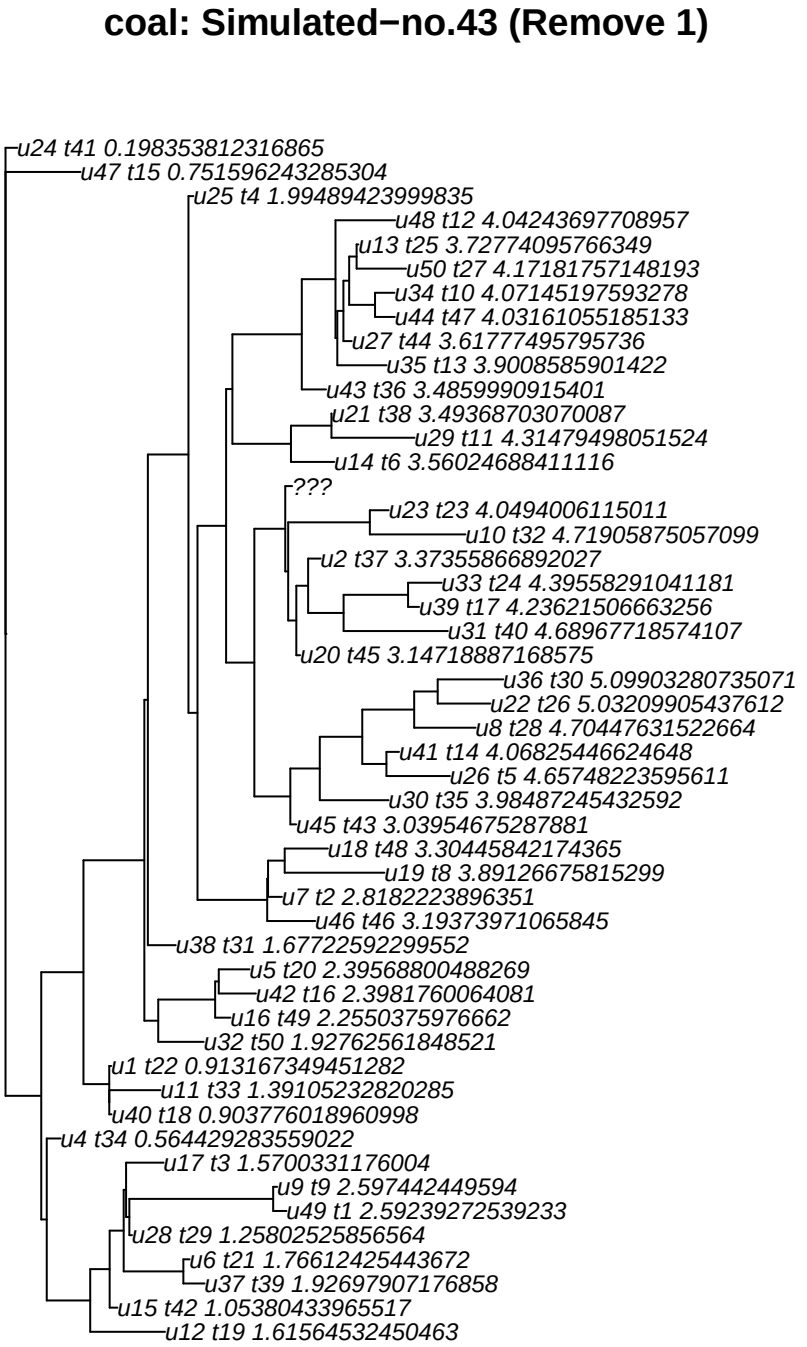

Time vs Distance
Time
Expected Substitutions
(Mean square error: 0.00330143)
1
2
3
4
5

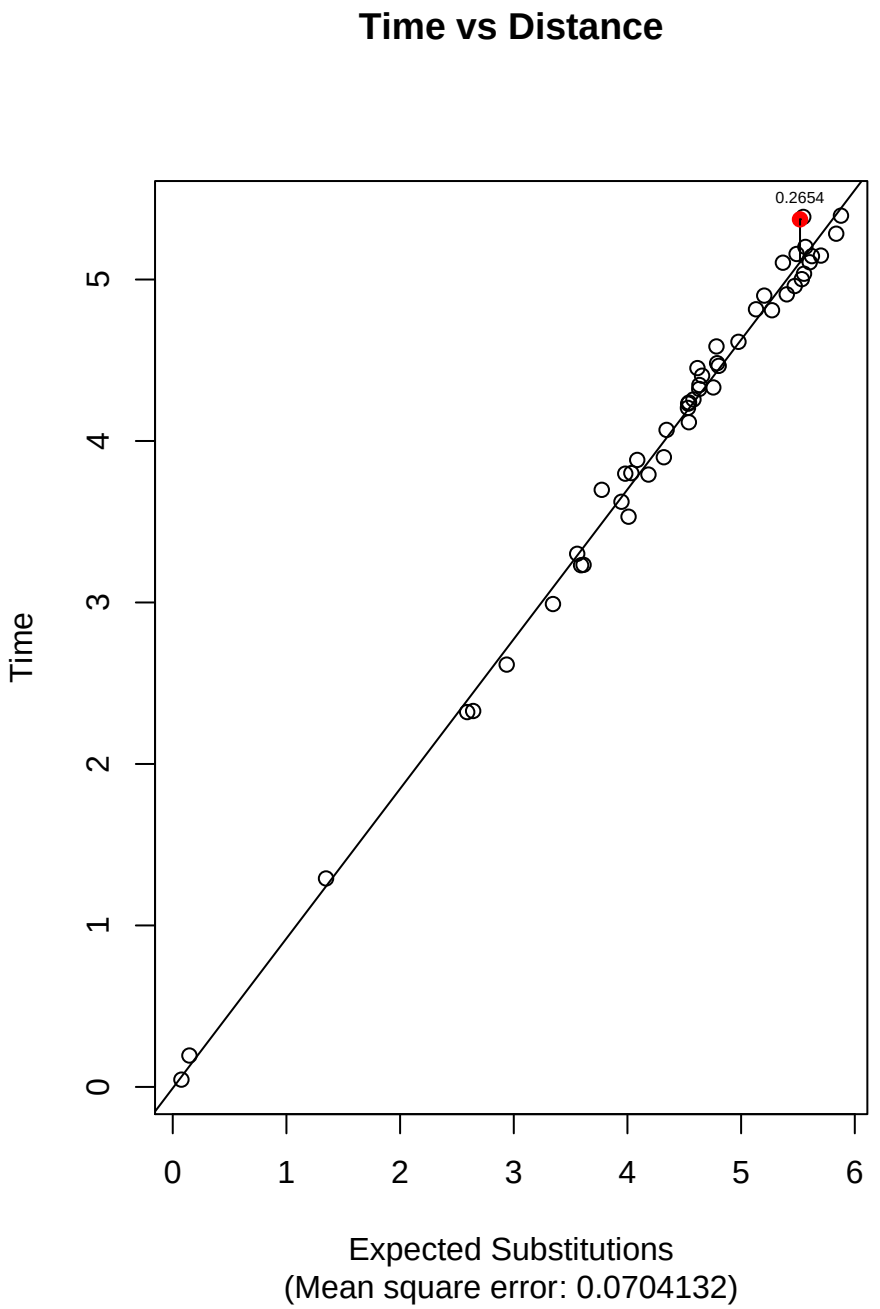

coal: Simulated−no.41 (Remove 1)
u42 t20 0.247498329738583
u41 t29 0.41956209052182
u6 t33 0.246121493161285
u12 t22 1.52346348057591
u31 t19 0.58673248047065
u3 t39 1.50888497470668
u17 t35 1.21077090462906
u46 t46 1.79437148050563
u13 t38 1.57881450162092
???
u49 t18 0.749140745844549
u50 t41 1.71176208042349
u39 t42 2.2326682242586
u29 t31 2.56480967470072
u20 t48 3.31096348826178
u19 t25 3.1116659732505
u10 t21 3.89138191504624
u11 t4 4.71827636535474
u47 t14 4.92997061633593
u30 t36 4.01106646283624
u26 t40 4.79766856705015
u27 t37 3.8790901471453
u23 t44 3.74479706056185
u48 t10 4.55968168980834
u1 t45 4.85511534291257
u28 t9 3.98938819026079
u38 t5 4.57011716663257
u32 t27 3.77200952950084
u44 t28 4.63155694326388
u21 t17 4.50785033550028
u35 t16 4.95797308177608
u4 t49 4.32251161977055
u24 t7 4.81410497161935
u34 t1 4.00954632804387
u15 t12 4.5139067079656
u16 t47 3.90106422334086
u45 t11 4.43002211596853
u37 t13 4.43754562893219
u33 t24 2.79838224406788
u22 t2 3.17381104087538
u5 t3 2.76918468453288
u43 t32 2.53859647221491
u8 t50 2.4413145612956
u36 t6 1.68756144632526
u25 t26 1.8737329013589
u18 t30 1.17921113880087
u7 t23 1.29059012929911
u2 t43 0.702097748967041
u40 t8 0.684999086025397
u9 t34 0.745858847788816

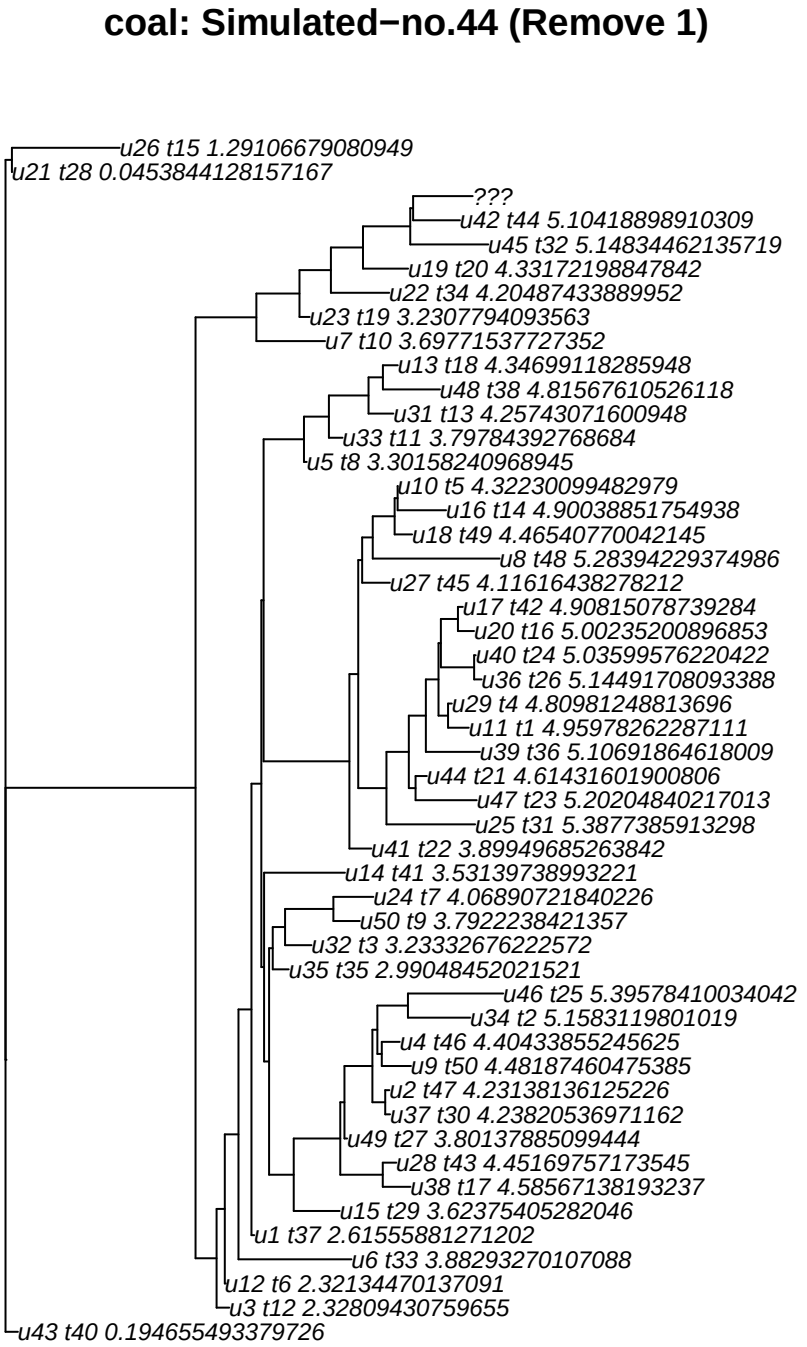

Time vs Distance
Time
0
1
2
3
4
5
6
Expected Substitutions
(Mean square error: 0.00524014)

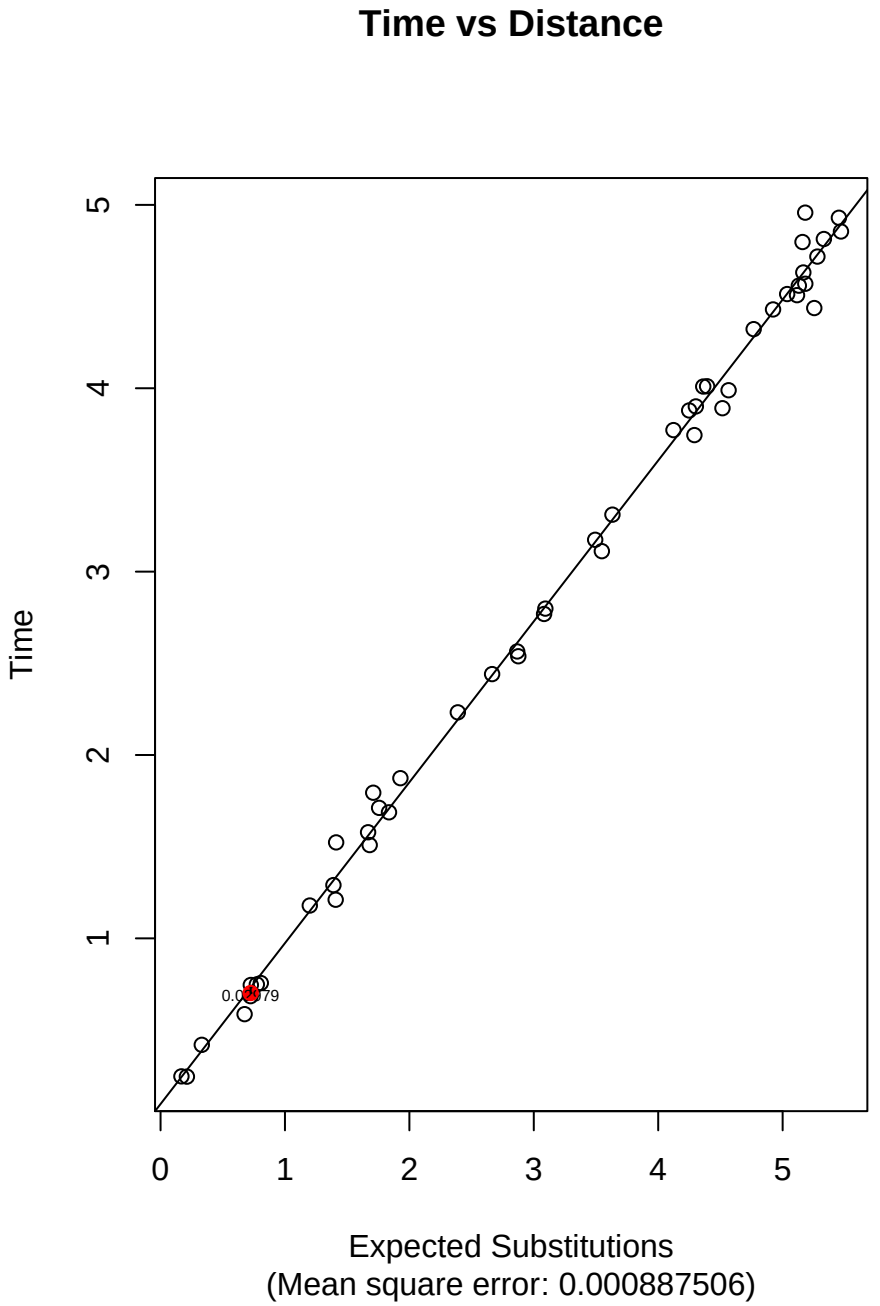

coal: Simulated−no.42 (Remove 1)
u31 t37 0.0444685213352162
u8 t32 0.330751828583403
u46 t1 1.7046407807945
u14 t49 2.98930731752706
u1 t7 4.24764531610726
u37 t13 3.6937971165454
u34 t4 3.83893023837582
u43 t42 3.28483893105506
u18 t25 3.09266818367363
u7 t3 2.02259024305445
u2 t10 5.6574162933162
u24 t36 5.96229955702708
u21 t30 6.09768561495792
u16 t15 5.30729182722069
u33 t6 4.45426945409968
u41 t31 4.39757811036233
u48 t45 4.55835606391473
u45 t12 5.63534257208792
u9 t46 5.80076639051045
u36 t5 6.04120297113182
u25 t33 5.21685346341632
u15 t20 5.07309061589087
u11 t16 4.65427895394365
u23 t34 4.40155527982498
u29 t44 5.09224863447359
u32 t38 3.55844729999788
u12 t21 4.4588769017346
u49 t17 3.80280044308864
u27 t24 3.6358503673327
u47 t43 5.20332224594306
u22 t47 5.14455971691915
u3 t14 5.95584275607107
u39 t50 6.06843226637523
u20 t19 5.57038835544076
u44 t18 3.88431754856695
u42 t26 3.64477166622802
u26 t9 3.3269879173226
u28 t48 4.04120912378035
u30 t2 3.11480255339886
u35 t23 3.5999084860077
u10 t39 2.77462507398826
u5 t8 2.63089193959057
u6 t22 3.88950042983368
u17 t41 2.60927049762721
u19 t40 1.84240192454229
u38 t27 1.67045352220153
u40 t28 1.52187234216229
???
u4 t11 0.423800840754862
u50 t29 1.91251556109622

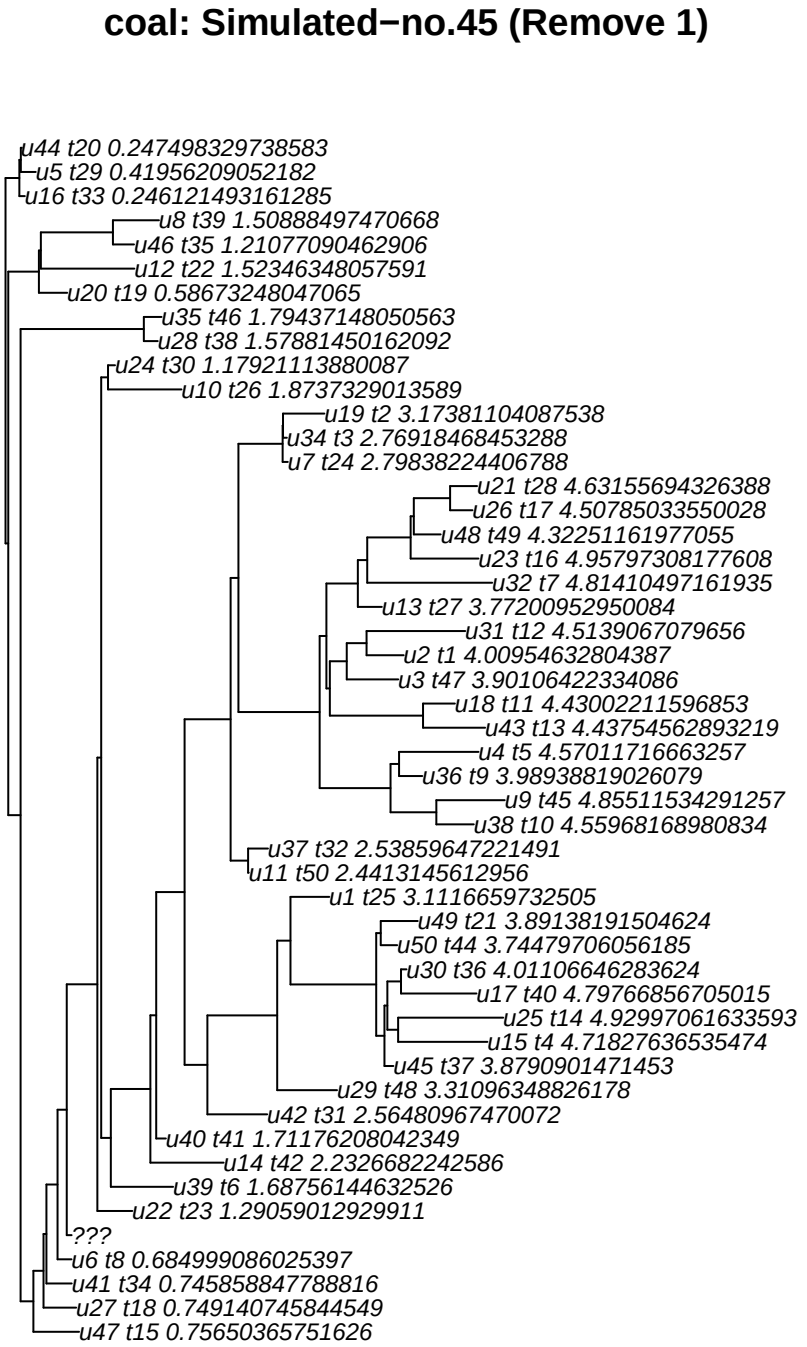

Time vs Distance
Time
0
1
2
3
4
5
Expected Substitutions
(Mean square error: 0.0155025)

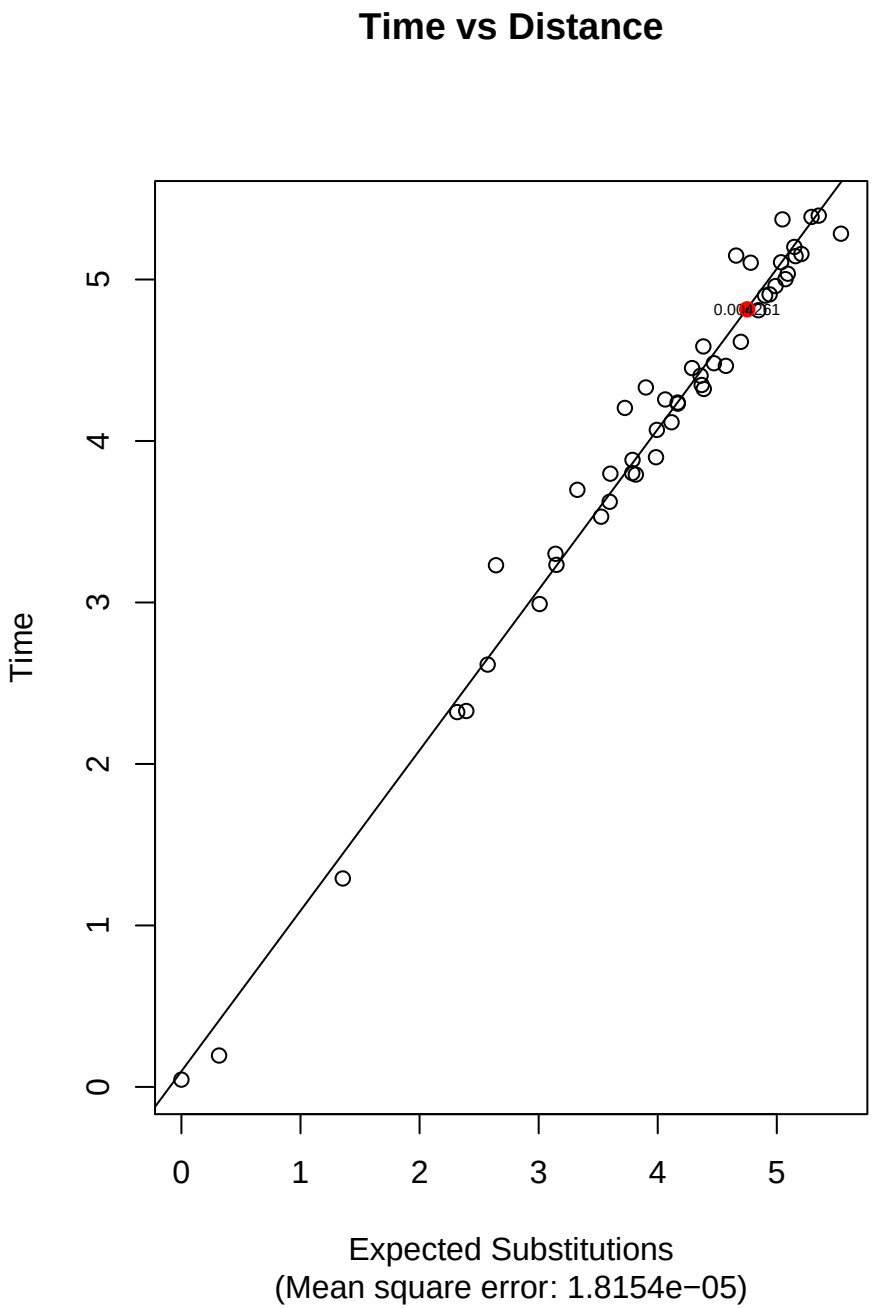

coal: Simulated−no.43 (Remove 1)
u24 t41 0.198353812316865
u47 t15 0.751596243285304
u25 t4 1.99489423999835
u48 t12 4.04243697708957
u13 t25 3.72774095766349
u50 t27 4.17181757148193
u34 t10 4.07145197593278
u44 t47 4.03161055185133
u27 t44 3.61777495795736
u35 t13 3.9008585901422
u43 t36 3.4859990915401
u21 t38 3.49368703070087
u29 t11 4.31479498051524
u14 t6 3.56024688411116
???
u23 t23 4.0494006115011
u10 t32 4.71905875057099
u2 t37 3.37355866892027
u33 t24 4.39558291041181
u39 t17 4.23621506663256
u31 t40 4.68967718574107
u20 t45 3.14718887168575
u36 t30 5.09903280735071
u22 t26 5.03209905437612
u8 t28 4.70447631522664
u41 t14 4.06825446624648
u26 t5 4.65748223595611
u30 t35 3.98487245432592
u45 t43 3.03954675287881
u18 t48 3.30445842174365
u19 t8 3.89126675815299
u7 t2 2.8182223896351
u46 t46 3.19373971065845
u38 t31 1.67722592299552
u5 t20 2.39568800488269
u42 t16 2.3981760064081
u16 t49 2.2550375976662
u32 t50 1.92762561848521
u1 t22 0.913167349451282
u11 t33 1.39105232820285
u40 t18 0.903776018960998
u4 t34 0.564429283559022
u17 t3 1.5700331176004
u9 t9 2.597442449594
u49 t1 2.59239272539233
u28 t29 1.25802525856564
u6 t21 1.76612425443672
u37 t39 1.92697907176858
u15 t42 1.05380433965517
u12 t19 1.61564532450463

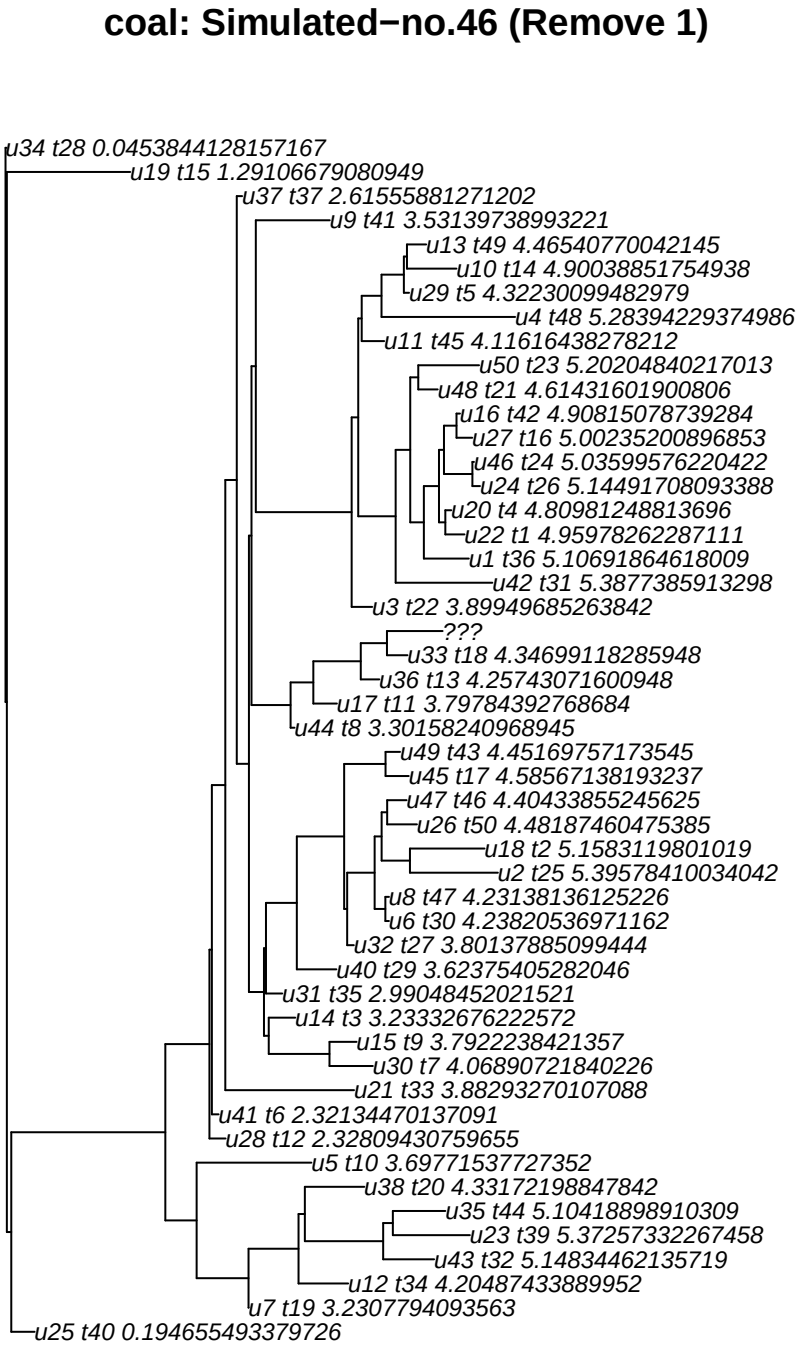

Time vs Distance
0.2654
Time
0
1
2
3
4
5
0
1
2
3
4
5
6
Expected Substitutions
(Mean square error: 0.0704132)

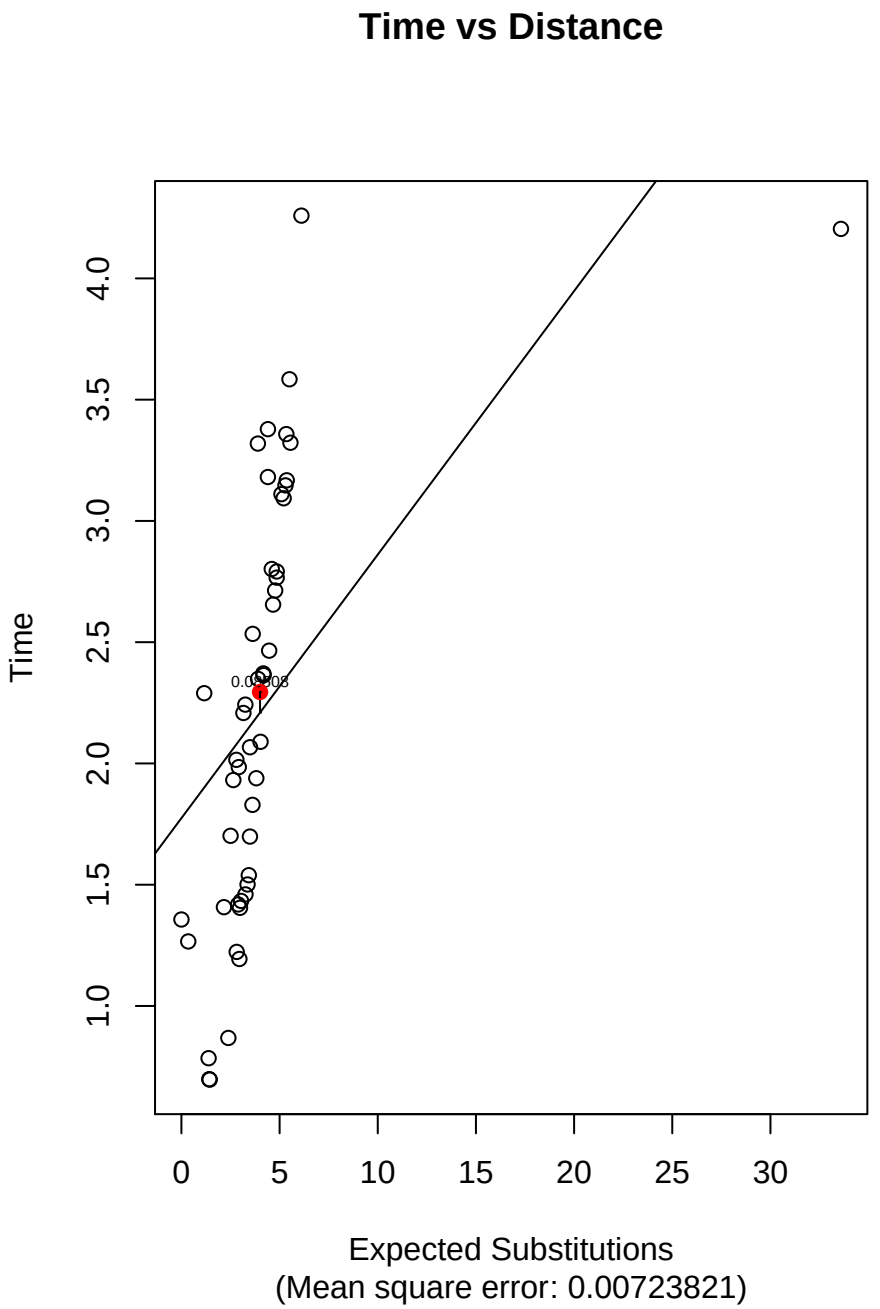

coal: Simulated−no.44 (Remove 1)
u26 t15 1.29106679080949
u21 t28 0.0453844128157167
???
u42 t44 5.10418898910309
u45 t32 5.14834462135719
u19 t20 4.33172198847842
u22 t34 4.20487433889952
u23 t19 3.2307794093563
u7 t10 3.69771537727352
u13 t18 4.34699118285948
u48 t38 4.81567610526118
u31 t13 4.25743071600948
u33 t11 3.79784392768684
u5 t8 3.30158240968945
u10 t5 4.32230099482979
u16 t14 4.90038851754938
u18 t49 4.46540770042145
u8 t48 5.28394229374986
u27 t45 4.11616438278212
u17 t42 4.90815078739284
u20 t16 5.00235200896853
u40 t24 5.03599576220422
u36 t26 5.14491708093388
u29 t4 4.80981248813696
u11 t1 4.95978262287111
u39 t36 5.10691864618009
u44 t21 4.61431601900806
u47 t23 5.20204840217013
u25 t31 5.3877385913298
u41 t22 3.89949685263842
u14 t41 3.53139738993221
u24 t7 4.06890721840226
u50 t9 3.7922238421357
u32 t3 3.23332676222572
u35 t35 2.99048452021521
u46 t25 5.39578410034042
u34 t2 5.1583119801019
u4 t46 4.40433855245625
u9 t50 4.48187460475385
u2 t47 4.23138136125226
u37 t30 4.23820536971162
u49 t27 3.80137885099444
u28 t43 4.45169757173545
u38 t17 4.58567138193237
u15 t29 3.62375405282046
u1 t37 2.61555881271202
u6 t33 3.88293270107088
u12 t6 2.32134470137091
u3 t12 2.32809430759655
u43 t40 0.194655493379726

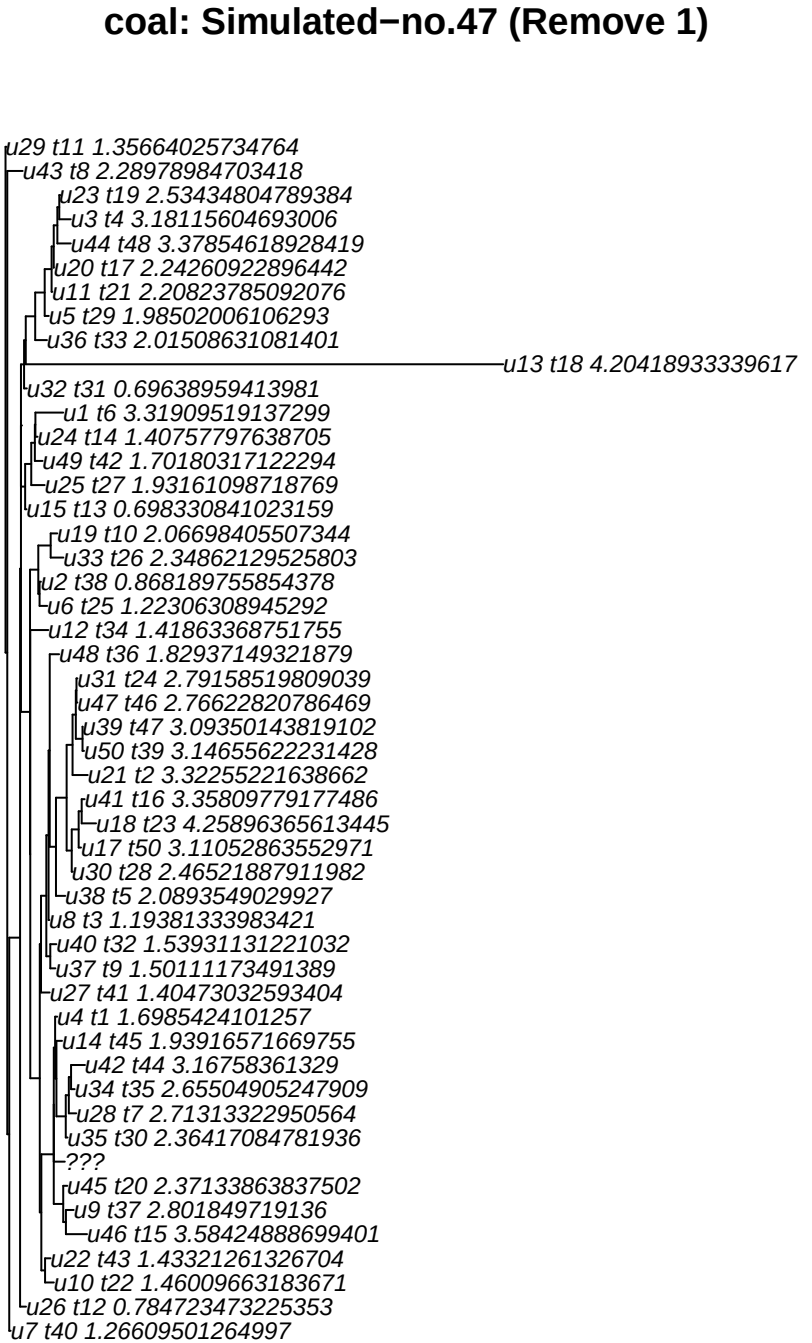

Time vs Distance
Time
0
1
2
3
4
5
Expected Substitutions
(Mean square error: 0.000887506)

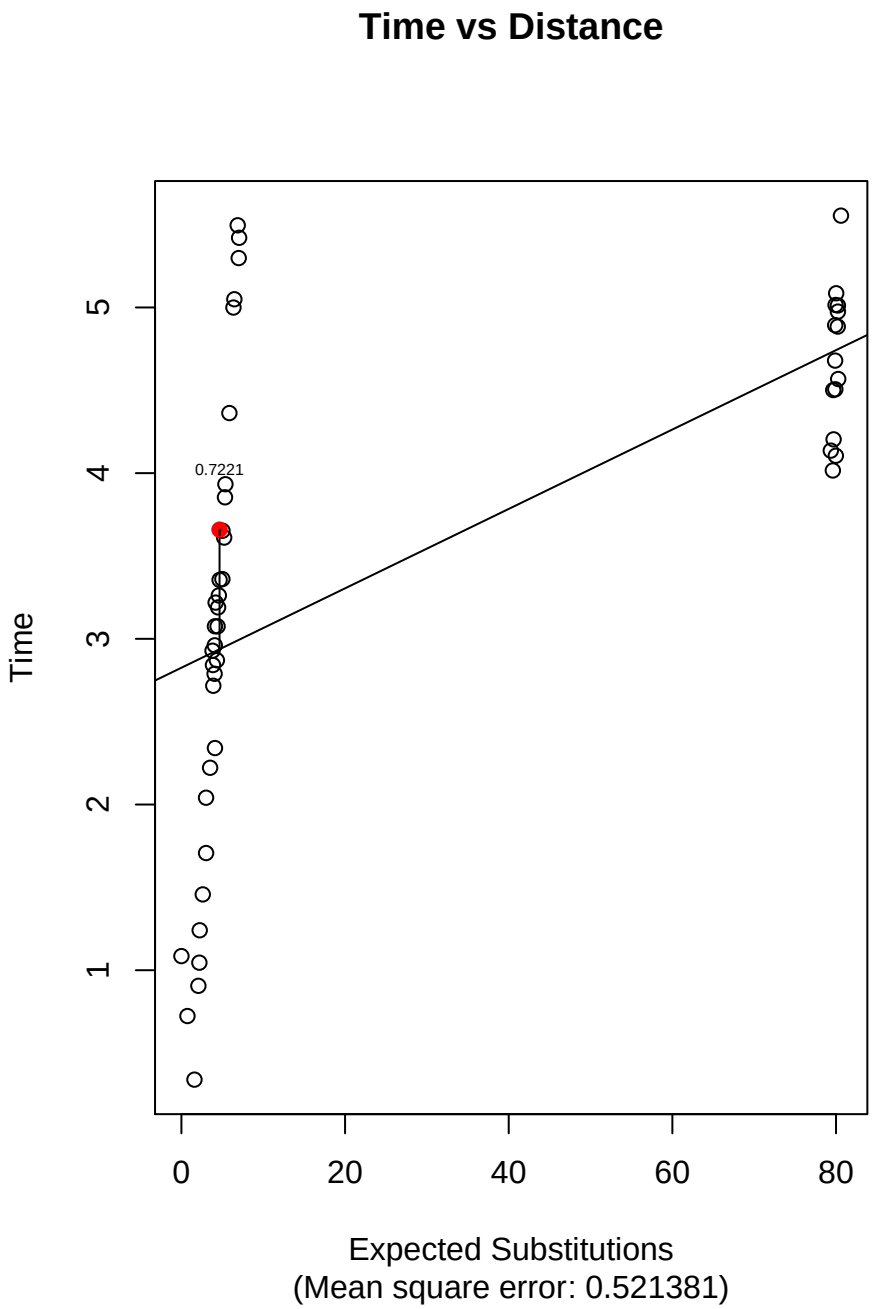

coal: Simulated−no.45 (Remove 1)
u44 t20 0.247498329738583
u5 t29 0.41956209052182
u16 t33 0.246121493161285
u8 t39 1.50888497470668
u46 t35 1.21077090462906
u12 t22 1.52346348057591
u20 t19 0.58673248047065
u35 t46 1.79437148050563
u28 t38 1.57881450162092
u24 t30 1.17921113880087
u10 t26 1.8737329013589
u19 t2 3.17381104087538
u34 t3 2.76918468453288
u7 t24 2.79838224406788
u21 t28 4.63155694326388
u26 t17 4.50785033550028
u48 t49 4.32251161977055
u23 t16 4.95797308177608
u32 t7 4.81410497161935
u13 t27 3.77200952950084
u31 t12 4.5139067079656
u2 t1 4.00954632804387
u3 t47 3.90106422334086
u18 t11 4.43002211596853
u43 t13 4.43754562893219
u4 t5 4.57011716663257
u36 t9 3.98938819026079
u9 t45 4.85511534291257
u38 t10 4.55968168980834
u37 t32 2.53859647221491
u11 t50 2.4413145612956
u1 t25 3.1116659732505
u49 t21 3.89138191504624
u50 t44 3.74479706056185
u30 t36 4.01106646283624
u17 t40 4.79766856705015
u25 t14 4.92997061633593
u15 t4 4.71827636535474
u45 t37 3.8790901471453
u29 t48 3.31096348826178
u42 t31 2.56480967470072
u40 t41 1.71176208042349
u14 t42 2.2326682242586
u39 t6 1.68756144632526
u22 t23 1.29059012929911
???
u6 t8 0.684999086025397
u41 t34 0.745858847788816
u27 t18 0.749140745844549
u47 t15 0.75650365751626

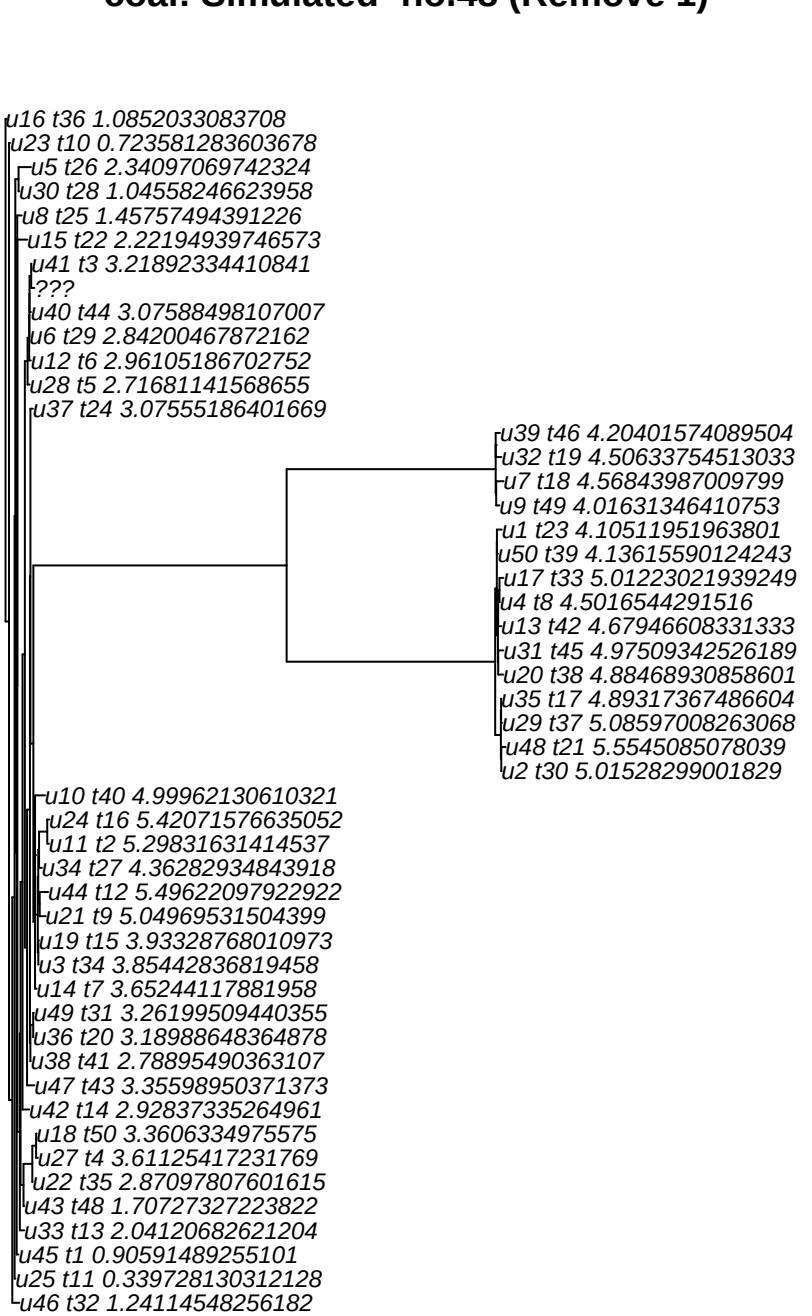

Time vs Distance
Time
Expected Substitutions
(Mean square error: 1.8154e−05)
0
1
2
3
4
5

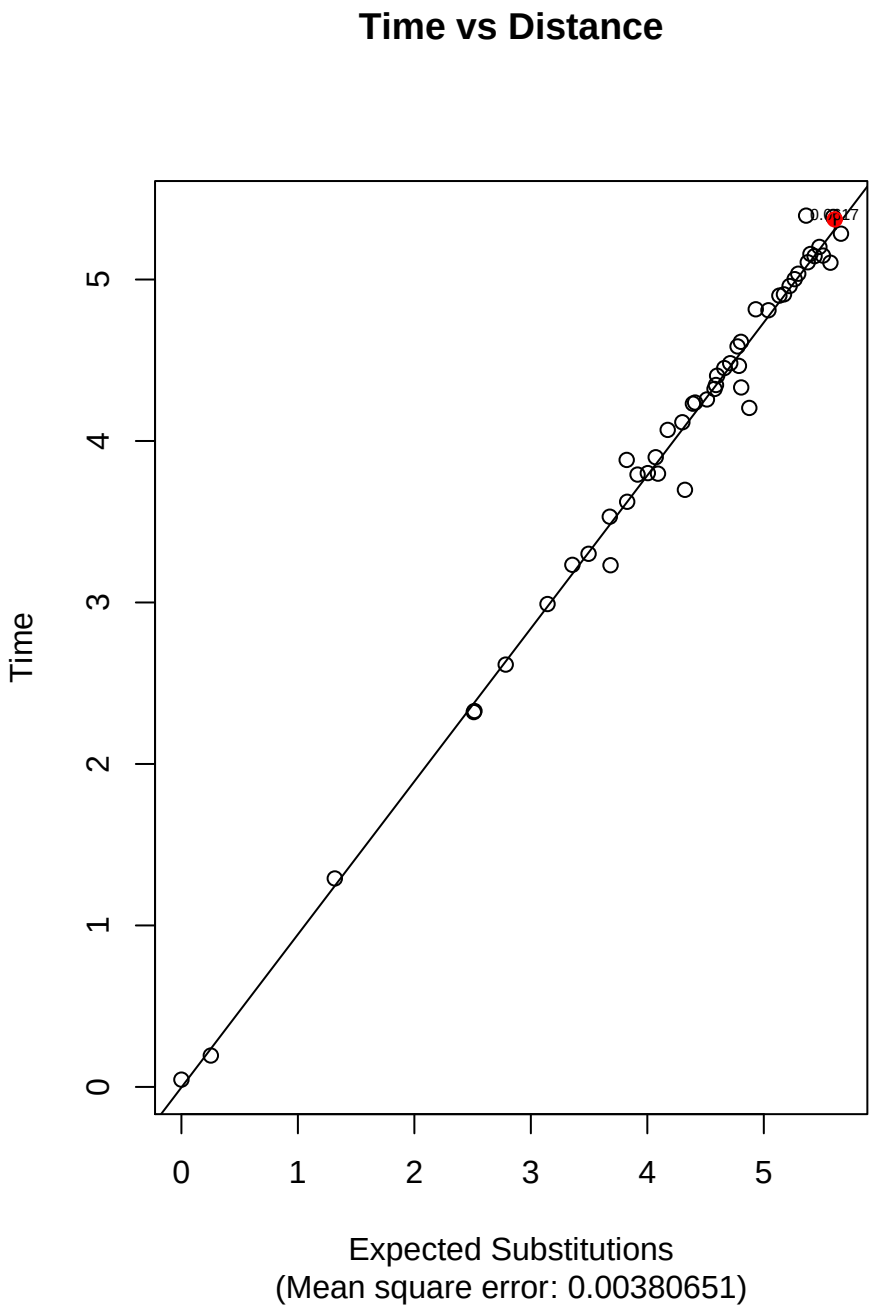

coal: Simulated−no.46 (Remove 1)
u34 t28 0.0453844128157167
u19 t15 1.29106679080949
u37 t37 2.61555881271202
u9 t41 3.53139738993221
u13 t49 4.46540770042145
u10 t14 4.90038851754938
u29 t5 4.32230099482979
u4 t48 5.28394229374986
u11 t45 4.11616438278212
u50 t23 5.20204840217013
u48 t21 4.61431601900806
u16 t42 4.90815078739284
u27 t16 5.00235200896853
u46 t24 5.03599576220422
u24 t26 5.14491708093388
u20 t4 4.80981248813696
u22 t1 4.95978262287111
u1 t36 5.10691864618009
u42 t31 5.3877385913298
u3 t22 3.89949685263842
???
u33 t18 4.34699118285948
u36 t13 4.25743071600948
u17 t11 3.79784392768684
u44 t8 3.30158240968945
u49 t43 4.45169757173545
u45 t17 4.58567138193237
u47 t46 4.40433855245625
u26 t50 4.48187460475385
u18 t2 5.1583119801019
u2 t25 5.39578410034042
u8 t47 4.23138136125226
u6 t30 4.23820536971162
u32 t27 3.80137885099444
u40 t29 3.62375405282046
u31 t35 2.99048452021521
u14 t3 3.23332676222572
u15 t9 3.7922238421357
u30 t7 4.06890721840226
u21 t33 3.88293270107088
u41 t6 2.32134470137091
u28 t12 2.32809430759655
u5 t10 3.69771537727352
u38 t20 4.33172198847842
u35 t44 5.10418898910309
u23 t39 5.37257332267458
u43 t32 5.14834462135719
u12 t34 4.20487433889952
u7 t19 3.2307794093563
u25 t40 0.194655493379726

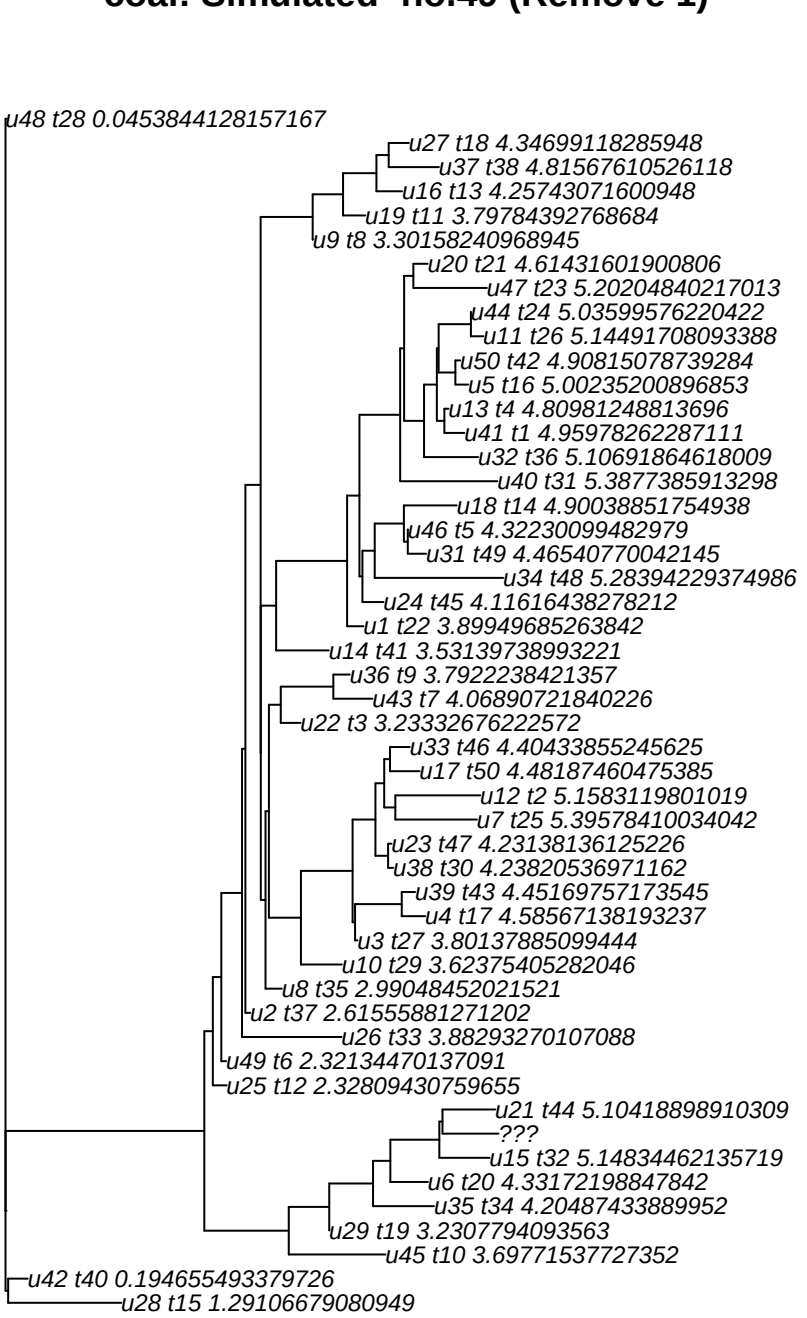

Time vs Distance
Time
1.0
1.5
2.0
2.5
3.0
3.5
4.0
0
5
10
15
20
25
30
Expected Substitutions
(Mean square error: 0.00723821)

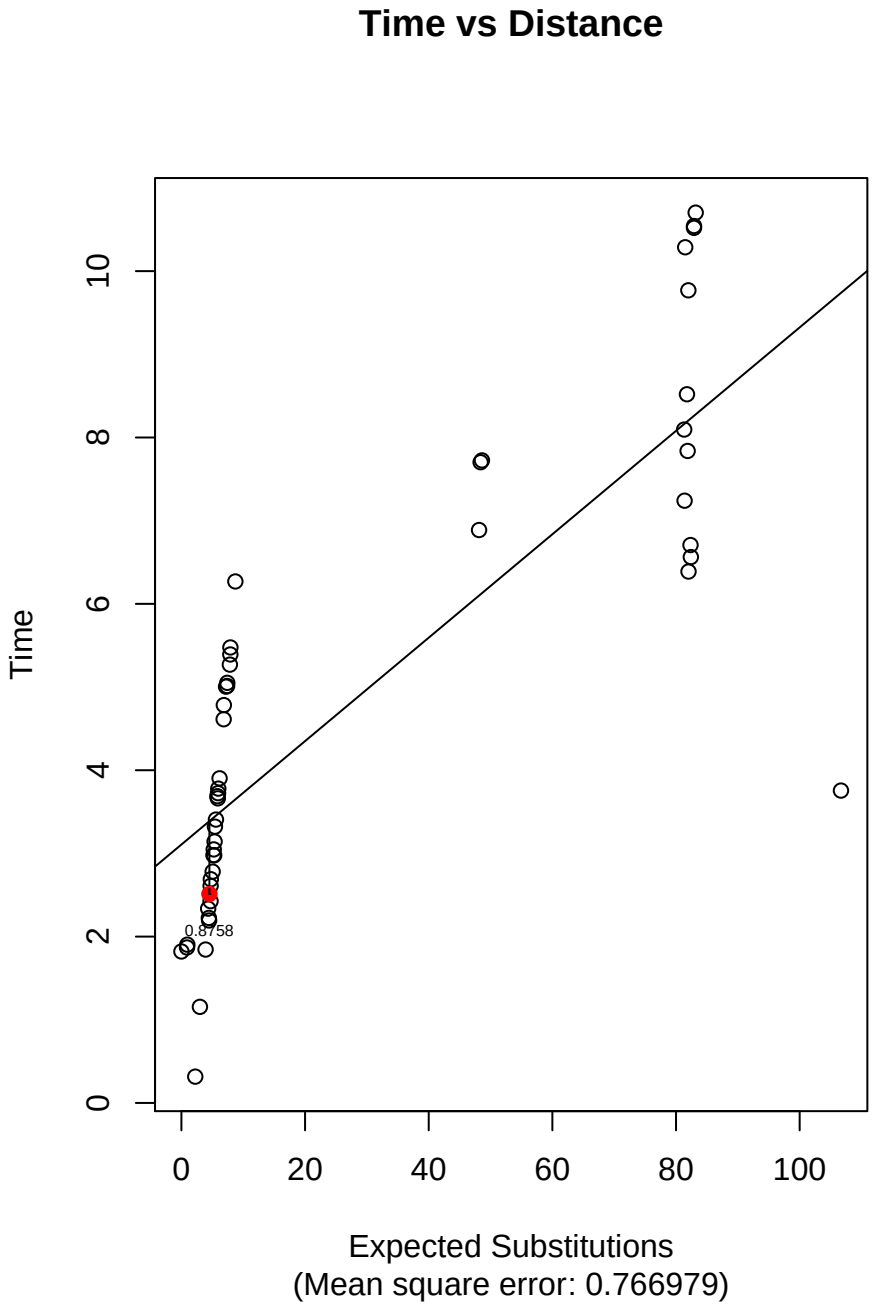

coal: Simulated−no.47 (Remove 1)
u29 t11 1.35664025734764
u43 t8 2.28978984703418
u23 t19 2.53434804789384
u3 t4 3.18115604693006
u44 t48 3.37854618928419
u20 t17 2.24260922896442
u11 t21 2.20823785092076
u5 t29 1.98502006106293
u36 t33 2.01508631081401
u13 t18 4.20418933339617
u32 t31 0.69638959413981
u1 t6 3.31909519137299
u24 t14 1.40757797638705
u49 t42 1.70180317122294
u25 t27 1.93161098718769
u15 t13 0.698330841023159
u19 t10 2.06698405507344
u33 t26 2.34862129525803
u2 t38 0.868189755854378
u6 t25 1.22306308945292
u12 t34 1.41863368751755
u48 t36 1.82937149321879
u31 t24 2.79158519809039
u47 t46 2.76622820786469
u39 t47 3.09350143819102
u50 t39 3.14655622231428
u21 t2 3.32255221638662
u41 t16 3.35809779177486
u18 t23 4.25896365613445
u17 t50 3.11052863552971
u30 t28 2.46521887911982
u38 t5 2.0893549029927
u8 t3 1.19381333983421
u40 t32 1.53931131221032
u37 t9 1.50111173491389
u27 t41 1.40473032593404
u4 t1 1.6985424101257
u14 t45 1.93916571669755
u42 t44 3.16758361329
u34 t35 2.65504905247909
u28 t7 2.71313322950564
u35 t30 2.36417084781936
???
u45 t20 2.37133863837502
u9 t37 2.801849719136
u46 t15 3.58424888699401
u22 t43 1.43321261326704
u10 t22 1.46009663183671
u26 t12 0.784723473225353
u7 t40 1.26609501264997

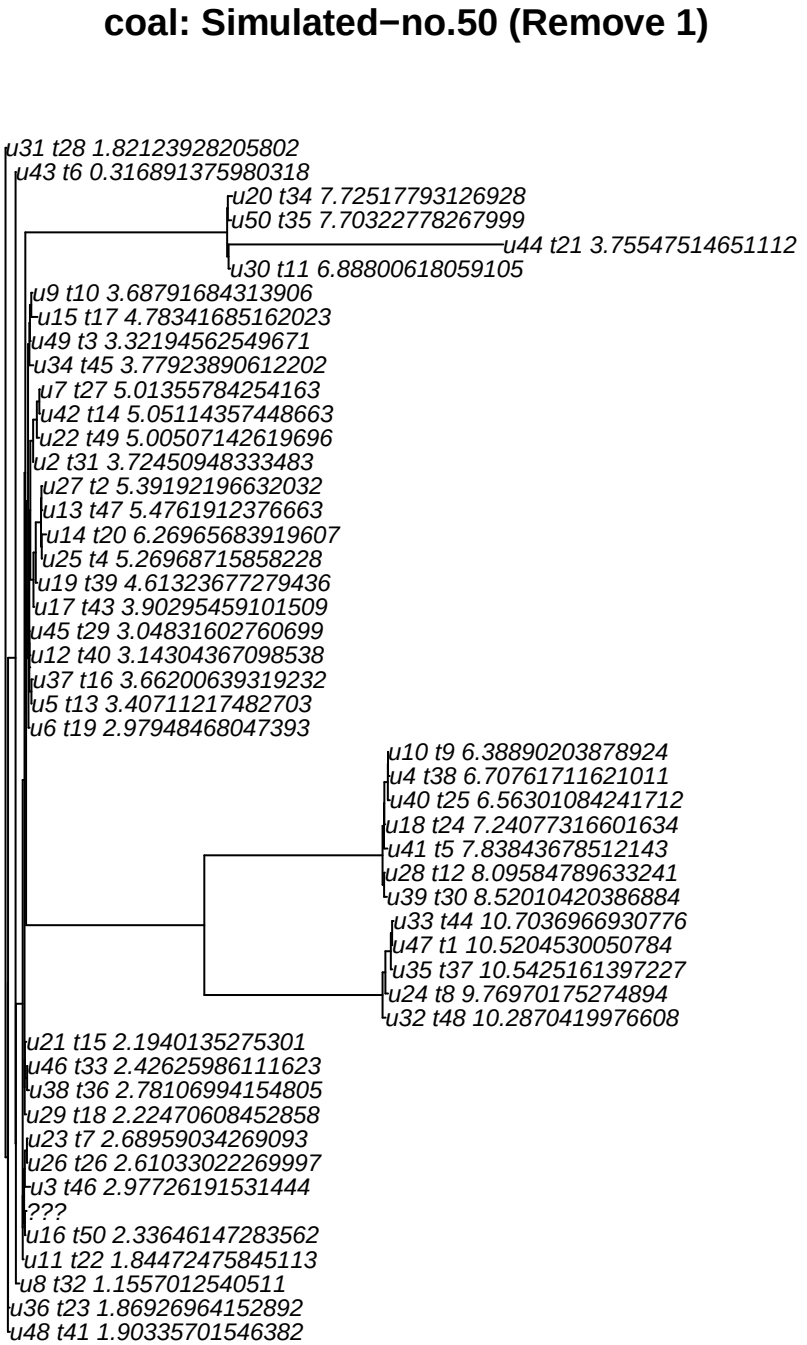

Time vs Distance
Time
0.7221
0
20
40
60
80
1
2
3
4
5
Expected Substitutions
(Mean square error: 0.521381)

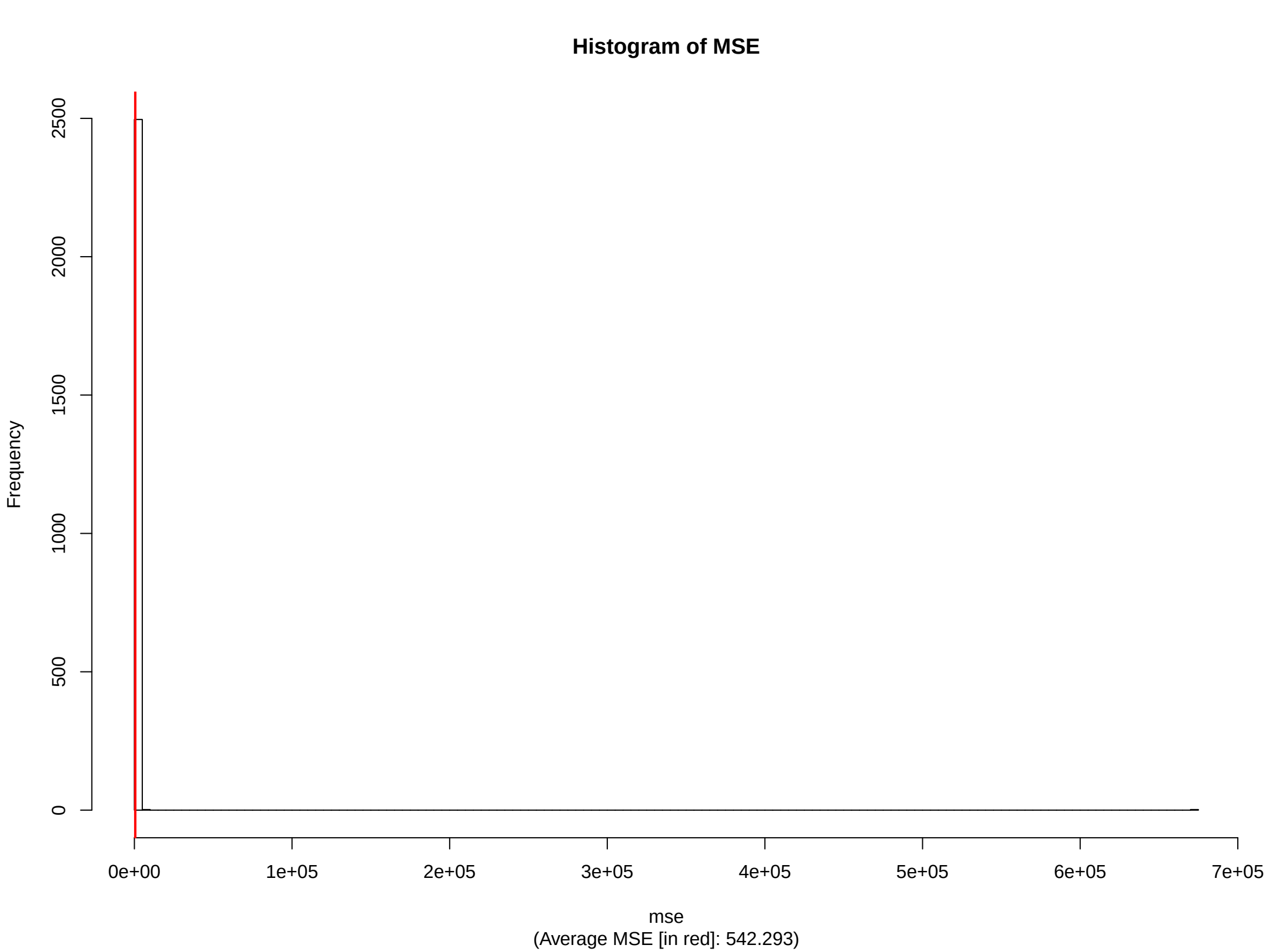

coal: Simulated−no.48 (Remove 1)
u16 t36 1.0852033083708
u23 t10 0.723581283603678
u5 t26 2.34097069742324
u30 t28 1.04558246623958
u8 t25 1.45757494391226
u15 t22 2.22194939746573
u41 t3 3.21892334410841
???
u40 t44 3.07588498107007
u6 t29 2.84200467872162
u12 t6 2.96105186702752
u28 t5 2.71681141568655
u37 t24 3.07555186401669
u39 t46 4.20401574089504
u32 t19 4.50633754513033
u7 t18 4.56843987009799
u9 t49 4.01631346410753
u1 t23 4.10511951963801
u50 t39 4.13615590124243
u17 t33 5.01223021939249
u4 t8 4.5016544291516
u13 t42 4.67946608331333
u31 t45 4.97509342526189
u20 t38 4.88468930858601
u35 t17 4.89317367486604
u29 t37 5.08597008263068
u48 t21 5.5545085078039
u2 t30 5.01528299001829
u10 t40 4.99962130610321
u24 t16 5.42071576635052
u11 t2 5.29831631414537
u34 t27 4.36282934843918
u44 t12 5.49622097922922
u21 t9 5.04969531504399
u19 t15 3.93328768010973
u3 t34 3.85442836819458
u14 t7 3.65244117881958
u49 t31 3.26199509440355
u36 t20 3.18988648364878
u38 t41 2.78895490363107
u47 t43 3.35598950371373
u42 t14 2.92837335264961
u18 t50 3.3606334975575
u27 t4 3.61125417231769
u22 t35 2.87097807601615
u43 t48 1.70727327223822
u33 t13 2.04120682621204
u45 t1 0.90591489255101
u25 t11 0.339728130312128
u46 t32 1.24114548256182


Time vs Distance
Time
0
1
2
3
4
5
Expected Substitutions
(Mean square error: 0.00380651)


coal: Simulated−no.49 (Remove 1)
u48 t28 0.0453844128157167
u27 t18 4.34699118285948
u37 t38 4.81567610526118
u16 t13 4.25743071600948
u19 t11 3.79784392768684
u9 t8 3.30158240968945
u20 t21 4.61431601900806
u47 t23 5.20204840217013
u44 t24 5.03599576220422
u11 t26 5.14491708093388
u50 t42 4.90815078739284
u5 t16 5.00235200896853
u13 t4 4.80981248813696
u41 t1 4.95978262287111
u32 t36 5.10691864618009
u40 t31 5.3877385913298
u18 t14 4.90038851754938
u46 t5 4.32230099482979
u31 t49 4.46540770042145
u34 t48 5.28394229374986
u24 t45 4.11616438278212
u1 t22 3.89949685263842
u14 t41 3.53139738993221
u36 t9 3.7922238421357
u43 t7 4.06890721840226
u22 t3 3.23332676222572
u33 t46 4.40433855245625
u17 t50 4.48187460475385
u12 t2 5.1583119801019
u7 t25 5.39578410034042
u23 t47 4.23138136125226
u38 t30 4.23820536971162
u39 t43 4.45169757173545
u4 t17 4.58567138193237
u3 t27 3.80137885099444
u10 t29 3.62375405282046
u8 t35 2.99048452021521
u2 t37 2.61555881271202
u26 t33 3.88293270107088
u49 t6 2.32134470137091
u25 t12 2.32809430759655
u21 t44 5.10418898910309
???
u15 t32 5.14834462135719
u6 t20 4.33172198847842
u35 t34 4.20487433889952
u29 t19 3.2307794093563
u45 t10 3.69771537727352
u42 t40 0.194655493379726
u28 t15 1.29106679080949


Time vs Distance
Time
0
2
4
6
8
10
0
20
40
60
80
100
0.8758
Expected Substitutions
(Mean square error: 0.766979)


coal: Simulated−no.50 (Remove 1)
u31 t28 1.82123928205802
u43 t6 0.316891375980318
u20 t34 7.72517793126928
u50 t35 7.70322778267999
u44 t21 3.75547514651112
u30 t11 6.88800618059105
u9 t10 3.68791684313906
u15 t17 4.78341685162023
u49 t3 3.32194562549671
u34 t45 3.77923890612202
u7 t27 5.01355784254163
u42 t14 5.05114357448663
u22 t49 5.00507142619696
u2 t31 3.72450948333483
u27 t2 5.39192196632032
u13 t47 5.4761912376663
u14 t20 6.26965683919607
u25 t4 5.26968715858228
u19 t39 4.61323677279436
u17 t43 3.90295459101509
u45 t29 3.04831602760699
u12 t40 3.14304367098538
u37 t16 3.66200639319232
u5 t13 3.40711217482703
u6 t19 2.97948468047393
u10 t9 6.38890203878924
u4 t38 6.70761711621011
u40 t25 6.56301084241712
u18 t24 7.24077316601634
u41 t5 7.83843678512143
u28 t12 8.09584789633241
u39 t30 8.52010420386884
u33 t44 10.7036966930776
u47 t1 10.5204530050784
u35 t37 10.5425161397227
u24 t8 9.76970175274894
u32 t48 10.2870419976608
u21 t15 2.1940135275301
u46 t33 2.42625986111623
u38 t36 2.78106994154805
u29 t18 2.22470608452858
u23 t7 2.68959034269093
u26 t26 2.61033022269997
u3 t46 2.97726191531444
???
u16 t50 2.33646147283562
u11 t22 1.84472475845113
u8 t32 1.1557012540511
u36 t23 1.86926964152892
u48 t41 1.90335701546382


Histogram of MSE
Frequency
0
500
1000
1500
2000
2500
0e+00
1e+05
2e+05
3e+05
4e+05
5e+05
6e+05
7e+05
mse
(Average MSE [in red]: 542.293)