

Week 11: Splines

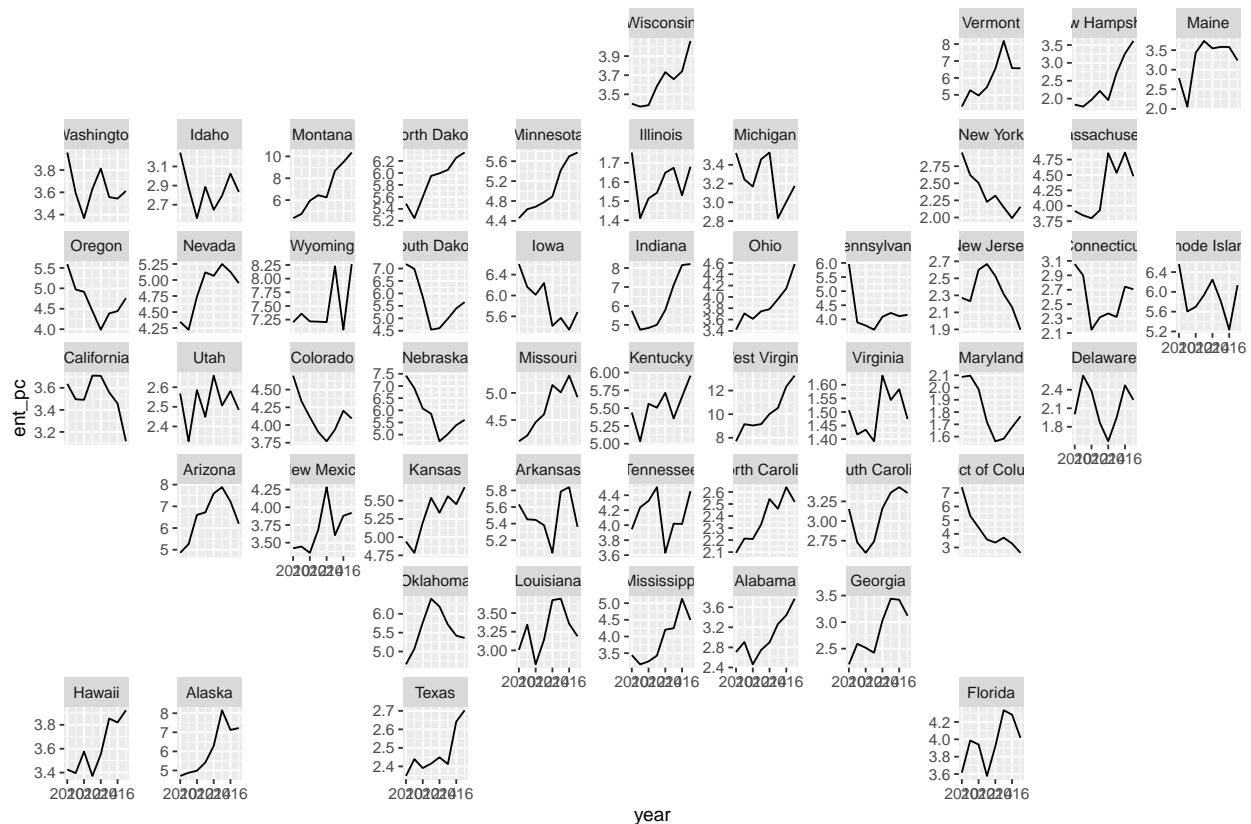
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Overview

In this lab you'll be fitting a second-order P-Splines regression model to foster care entries by state in the US, projecting out to 2030. Here's the data

Question 1: Make a plot highlighting trends over time by state. Might be a good opportunity to use `geofacet`. Describe what you see in a couple of sentences.



Question 2: Fit a hierarchical second-order P-Splines regression model to estimate the (logged) entries per capita over the period 2010-2017. The model you want to fit is

$$y_{st} \sim N(\log \lambda_{st}, \sigma_{y,s}^2)$$

$$\log \lambda_{st} = \alpha_k B_k(t)$$

$$\Delta^2 \alpha_k \sim N(0, \sigma_{\alpha,s}^2)$$

$$\log \sigma_{\alpha,s} \sim N(\mu_\sigma, \tau^2)$$

Where $y_{s,t}$ is the logged entries per capita for state s in year t . Use cubic splines that have knots 2.5 years apart and are a constant shape at the boundaries. Put standard normal priors on standard deviations and hyperparameters.

```
years <- unique(d$year)
N <- length(years)
y <- log(d |> select(state, year, ent_pc) |>
  pivot_wider(names_from = "state", values_from = "ent_pc") |>
  select(-year) |>
  as.matrix())
res <- getsplines(years, 2.5)
B <- res$B.ik
K <- ncol(B)

stan_data <- list(N = N, y = y, K = K, S = length(unique(d$state)), B = B)
mod <- stan(data = stan_data, file = here("C:/QV/STA 2201/STA2201-W2023/Lab11/lab11.stan"), refresh = 0)
summary(mod)[["summary"]]
```

##	mean	se_mean	sd	2.5%
## alpha[1,1]	0.54064781	0.0078689154	0.42614778	-0.262906941
## alpha[1,2]	0.76150026	0.0094070485	0.57066761	-0.322687557
## alpha[1,3]	0.70149088	0.0079281973	0.48242424	-0.237890363
## alpha[1,4]	0.99402344	0.0091818366	0.55123403	-0.131741600
## alpha[1,5]	0.97472649	0.0098274533	0.49787211	0.033057781
## alpha[1,6]	1.07724238	0.0090507653	0.52075834	0.050271249
## alpha[1,7]	0.71539872	0.0114760990	0.56576440	-0.313935566
## alpha[1,8]	0.23741549	0.0135417920	0.51182865	-0.875047136
## alpha[1,9]	1.73133507	0.0142488693	0.86014952	0.116481070
## alpha[1,10]	0.51848352	0.0086955449	0.49868856	-0.535113836
## alpha[1,11]	0.26921692	0.0082748659	0.41689962	-0.616443592
## alpha[1,12]	0.66827864	0.0069262021	0.40087706	-0.135873178
## alpha[1,13]	0.79013117	0.0100813030	0.52939330	-0.160350909
## alpha[1,14]	0.26954767	0.0089149312	0.33878318	-0.252552956
## alpha[1,15]	1.48792310	0.0133108603	0.72430279	0.102014111
## alpha[1,16]	1.18553392	0.0096245528	0.60826398	0.028428215
## alpha[1,17]	0.97064458	0.0095213376	0.52117082	-0.019007981
## alpha[1,18]	1.04479869	0.0104497566	0.57601680	-0.007403919
## alpha[1,19]	0.52270060	0.0073309469	0.43461043	-0.287424192
## alpha[1,20]	0.30352157	0.0075643997	0.41930220	-0.489133109
## alpha[1,21]	0.28442815	0.0067031214	0.39287704	-0.549748716
## alpha[1,22]	0.75440307	0.0092132580	0.51227349	-0.248803381
## alpha[1,23]	0.71675757	0.0096718606	0.52878662	-0.224906047
## alpha[1,24]	0.81156589	0.0066202073	0.42678551	-0.059943825
## alpha[1,25]	0.69941413	0.0096053292	0.52105641	-0.226061614
## alpha[1,26]	0.78743215	0.0075704213	0.46447004	-0.105717673
## alpha[1,27]	0.53055545	0.0076539520	0.46382182	-0.391472071
## alpha[1,28]	1.18347106	0.0096815427	0.63903700	-0.134456140

## alpha[1,29]	0.88112503	0.0085531386	0.48387331	-0.001863434
## alpha[1,30]	0.19223544	0.0058004577	0.28550784	-0.367492841
## alpha[1,31]	0.36113292	0.0061172710	0.34454030	-0.268173786
## alpha[1,32]	0.61336694	0.0091808325	0.44994938	-0.202912347
## alpha[1,33]	0.75507426	0.0080921252	0.46812761	-0.099940829
## alpha[1,34]	0.35067668	0.0043049916	0.26328124	-0.145506839
## alpha[1,35]	1.22227258	0.0095666043	0.53922289	0.188930232
## alpha[1,36]	0.60539497	0.0059318262	0.33938138	-0.081409265
## alpha[1,37]	0.89941706	0.0086863796	0.49972965	-0.063875396
## alpha[1,38]	1.09751056	0.0086850503	0.56460320	-0.013467555
## alpha[1,39]	1.52229962	0.0267903493	1.00795549	-0.123050475
## alpha[1,40]	1.23424214	0.0152304177	0.78082086	-0.141384179
## alpha[1,41]	1.09247978	0.0151325710	0.64671507	-0.052540046
## alpha[1,42]	1.02815801	0.0103682286	0.72671774	-0.455665750
## alpha[1,43]	0.58224367	0.0081188871	0.47741924	-0.365054237
## alpha[1,44]	0.42998537	0.0049561189	0.27702792	-0.136429041
## alpha[1,45]	0.51070489	0.0087254446	0.41079684	-0.239519973
## alpha[1,46]	0.59564944	0.0093663661	0.56162352	-0.473545428
## alpha[1,47]	0.18926730	0.0045254346	0.22864910	-0.206633666
## alpha[1,48]	1.03136703	0.0121884608	0.60386289	-0.024783015
## alpha[1,49]	0.87909599	0.0081289185	0.53005758	-0.225841030
## alpha[1,50]	0.85850812	0.0088399414	0.45856783	0.024236812
## alpha[1,51]	1.05286937	0.0104698477	0.62330943	-0.113093618
## alpha[2,1]	0.87488511	0.0044390924	0.22908391	0.421132719
## alpha[2,2]	1.28438616	0.0058531951	0.31304509	0.650646269
## alpha[2,3]	1.23873391	0.0038039251	0.22059447	0.780800568
## alpha[2,4]	1.57856070	0.0044021041	0.23489633	1.075581169
## alpha[2,5]	1.35306181	0.0057551198	0.19405062	0.885496342
## alpha[2,6]	1.55517663	0.0037301341	0.16881176	1.166065555
## alpha[2,7]	1.05208475	0.0088779196	0.34960713	0.342733814
## alpha[2,8]	0.50556078	0.0084360503	0.33538403	-0.215038974
## alpha[2,9]	2.28942560	0.0099871239	0.38831872	1.365379689
## alpha[2,10]	1.00786882	0.0033793511	0.19292005	0.643754318
## alpha[2,11]	0.57122013	0.0041814785	0.22061628	0.149194235
## alpha[2,12]	1.09199064	0.0029795370	0.16398311	0.750139452
## alpha[2,13]	1.13642717	0.0062233657	0.30413831	0.524436693
## alpha[2,14]	0.40661290	0.0073763220	0.23229158	0.065186078
## alpha[2,15]	1.96614239	0.0111668951	0.33102750	1.094150851
## alpha[2,16]	1.80388607	0.0051596630	0.27699922	1.204873134
## alpha[2,17]	1.49259866	0.0051143800	0.22411739	1.017688493
## alpha[2,18]	1.58574551	0.0060973960	0.27926962	0.987642239
## alpha[2,19]	0.89769548	0.0044796852	0.25910500	0.401112505
## alpha[2,20]	0.61610229	0.0050269155	0.28093691	0.089429292
## alpha[2,21]	0.57251107	0.0028189538	0.15322924	0.296812789
## alpha[2,22]	1.20315351	0.0059233705	0.28810764	0.643160599
## alpha[2,23]	1.11386329	0.0060746259	0.30496718	0.533525072
## alpha[2,24]	1.33336245	0.0022157430	0.10843443	1.106278236
## alpha[2,25]	1.07730984	0.0068365557	0.30890107	0.488869080
## alpha[2,26]	1.25797165	0.0037949092	0.19125066	0.847503408
## alpha[2,27]	1.06239958	0.0037732892	0.24367308	0.572270015
## alpha[2,28]	1.88217773	0.0054450264	0.29341364	1.250540950
## alpha[2,29]	1.34377647	0.0045616578	0.22431996	0.856647643
## alpha[2,30]	0.38756191	0.0035461592	0.18126407	0.073200148
## alpha[2,31]	0.63964044	0.0031678362	0.16272332	0.313812796

## alpha[2,32]	1.01699929	0.0051633601	0.25652869	0.529106084
## alpha[2,33]	1.09090854	0.0046430695	0.23578000	0.632262133
## alpha[2,34]	0.60648849	0.0020798100	0.12630647	0.362350406
## alpha[2,35]	1.73910739	0.0062731604	0.20027086	1.235158108
## alpha[2,36]	1.05230206	0.0018127139	0.10917068	0.824874832
## alpha[2,37]	1.40454186	0.0044285750	0.14318189	1.021565313
## alpha[2,38]	1.64708424	0.0043737810	0.24442212	1.110321279
## alpha[2,39]	1.96093556	0.0226827777	0.65930423	0.687513341
## alpha[2,40]	1.81823712	0.0112098568	0.44495987	0.961255985
## alpha[2,41]	1.38733507	0.0133902950	0.32860723	0.631483530
## alpha[2,42]	1.75345225	0.0038335322	0.22020180	1.329257812
## alpha[2,43]	1.08794760	0.0035187486	0.22682119	0.626921879
## alpha[2,44]	0.73429553	0.0019972014	0.11063413	0.510546774
## alpha[2,45]	0.81686202	0.0052548289	0.22273880	0.403367828
## alpha[2,46]	1.11239544	0.0051362506	0.30560622	0.529819908
## alpha[2,47]	0.30713820	0.0033589977	0.14723307	0.077515291
## alpha[2,48]	1.44090885	0.0077811638	0.32067653	0.797060214
## alpha[2,49]	1.63562831	0.0038654785	0.19629238	1.233233553
## alpha[2,50]	1.25177316	0.0051653066	0.17606444	0.851278467
## alpha[2,51]	1.71499969	0.0067149630	0.31876589	1.039260563
## alpha[3,1]	1.01360134	0.0018790934	0.10064377	0.800908759
## alpha[3,2]	1.56508264	0.0023069080	0.13391108	1.298754800
## alpha[3,3]	1.69153102	0.0017473866	0.09900223	1.506658828
## alpha[3,4]	1.77591396	0.0020152118	0.10818547	1.559120317
## alpha[3,5]	1.21744477	0.0018578809	0.07359716	1.094724505
## alpha[3,6]	1.53914800	0.0014066748	0.07197632	1.394509349
## alpha[3,7]	1.01994189	0.0032333023	0.15546838	0.669532481
## alpha[3,8]	0.79385515	0.0081537271	0.23756051	0.339378235
## alpha[3,9]	1.80114488	0.0023284884	0.14615373	1.500795927
## alpha[3,10]	1.45012873	0.0027425644	0.10570525	1.226742741
## alpha[3,11]	0.87903483	0.0023132389	0.11277694	0.655968044
## alpha[3,12]	1.27581393	0.0013012860	0.07182763	1.129481526
## alpha[3,13]	1.07769825	0.0019170298	0.11849701	0.843131119
## alpha[3,14]	0.41041076	0.0019691810	0.09970514	0.195826774
## alpha[3,15]	1.54723424	0.0023020661	0.11208845	1.346987153
## alpha[3,16]	1.87661106	0.0019457233	0.11535908	1.651866154
## alpha[3,17]	1.58639909	0.0018118186	0.09105467	1.412450437
## alpha[3,18]	1.66546615	0.0024067790	0.11308843	1.454899596
## alpha[3,19]	1.12378074	0.0018544295	0.11940491	0.884951179
## alpha[3,20]	0.95570367	0.0025562301	0.15626946	0.633732734
## alpha[3,21]	0.86284284	0.0017974952	0.07927592	0.682949355
## alpha[3,22]	1.33904337	0.0018970348	0.11704045	1.100967010
## alpha[3,23]	1.20179133	0.0022153102	0.12903368	0.930016453
## alpha[3,24]	1.58502681	0.0010160747	0.04799153	1.487053977
## alpha[3,25]	1.15761364	0.0019318334	0.12009837	0.912235471
## alpha[3,26]	1.44644814	0.0013428091	0.07960576	1.289116838
## alpha[3,27]	1.60039125	0.0022697284	0.11960594	1.364907368
## alpha[3,28]	2.05396087	0.0023515656	0.12908578	1.790910378
## alpha[3,29]	1.45615532	0.0016811958	0.09172836	1.284785491
## alpha[3,30]	0.57879551	0.0018167450	0.10095918	0.372254413
## alpha[3,31]	0.85280338	0.0013917504	0.07395487	0.703609379
## alpha[3,32]	1.22464539	0.0023518639	0.12046908	0.969282453
## alpha[3,33]	1.01656125	0.0017761348	0.09701506	0.820617624
## alpha[3,34]	0.77873425	0.0008413450	0.05463118	0.668058421

## alpha[3,35]	1.63315186	0.0022816345	0.08123611	1.497700457
## alpha[3,36]	1.33404045	0.0008482029	0.04853040	1.234946326
## alpha[3,37]	1.56451848	0.0019889095	0.06424238	1.475192165
## alpha[3,38]	1.72560876	0.0017286345	0.10598287	1.512663427
## alpha[3,39]	1.40313644	0.0049206448	0.21565260	1.016780319
## alpha[3,40]	1.74960774	0.0039532813	0.17800274	1.407575963
## alpha[3,41]	0.93905386	0.0029627815	0.10953677	0.758665427
## alpha[3,42]	2.16661863	0.0025396024	0.10748854	1.929647998
## alpha[3,43]	1.51514220	0.0018939135	0.11097166	1.288753184
## alpha[3,44]	0.91554532	0.0008582537	0.04970982	0.813384578
## alpha[3,45]	0.90658827	0.0018697825	0.09201936	0.720803046
## alpha[3,46]	1.56837215	0.0025039766	0.14322690	1.269364837
## alpha[3,47]	0.35230038	0.0010972906	0.06375385	0.218164796
## alpha[3,48]	1.25130135	0.0025653030	0.12415464	1.027927399
## alpha[3,49]	2.28371055	0.0020907431	0.09210852	2.086515261
## alpha[3,50]	1.17708746	0.0020215225	0.07365764	1.055489987
## alpha[3,51]	2.03613306	0.0037875877	0.14395056	1.758294418
## alpha[4,1]	0.97743648	0.0016846927	0.09629058	0.791179390
## alpha[4,2]	1.74099309	0.0022348666	0.12699031	1.492347156
## alpha[4,3]	2.00798792	0.0014538469	0.08483817	1.839068148
## alpha[4,4]	1.60522988	0.0018949035	0.09691165	1.428998057
## alpha[4,5]	1.32626760	0.0011280474	0.05436729	1.209119338
## alpha[4,6]	1.27512210	0.0013326501	0.06142596	1.162299260
## alpha[4,7]	0.77375605	0.0031575057	0.14498026	0.502883101
## alpha[4,8]	0.64628852	0.0046821754	0.17839710	0.242423797
## alpha[4,9]	1.13436667	0.0039583174	0.14585100	0.892705158
## alpha[4,10]	1.26112528	0.0026227361	0.09729253	1.101168710
## alpha[4,11]	0.99744876	0.0022133123	0.10880754	0.779717670
## alpha[4,12]	1.21868440	0.0013250258	0.06635456	1.093492316
## alpha[4,13]	0.96664973	0.0020188662	0.11039026	0.760489484
## alpha[4,14]	0.45426516	0.0013817625	0.07996523	0.293901829
## alpha[4,15]	1.54927939	0.0023554702	0.09534501	1.375912457
## alpha[4,16]	1.77450881	0.0016965525	0.09584404	1.582470183
## alpha[4,17]	1.71653046	0.0012500560	0.07113647	1.564035990
## alpha[4,18]	1.73769459	0.0017838909	0.09168713	1.545765989
## alpha[4,19]	1.20454328	0.0017538483	0.11208444	0.982765729
## alpha[4,20]	1.27433474	0.0024664703	0.15267461	0.975940122
## alpha[4,21]	0.45997033	0.0012149764	0.06050760	0.355373319
## alpha[4,22]	1.43108268	0.0016904054	0.10674886	1.223743691
## alpha[4,23]	1.23665742	0.0019455478	0.11497374	1.004371414
## alpha[4,24]	1.50489154	0.0007552060	0.03768514	1.430968818
## alpha[4,25]	1.26824897	0.0019348345	0.11484778	1.045122354
## alpha[4,26]	1.55963180	0.0010756374	0.06545763	1.431272714
## alpha[4,27]	1.85788239	0.0026109084	0.11843239	1.645211107
## alpha[4,28]	1.61553975	0.0020368427	0.11107837	1.405984703
## alpha[4,29]	1.65399343	0.0013286978	0.07137498	1.509423178
## alpha[4,30]	0.73695003	0.0018358489	0.09841033	0.541709956
## alpha[4,31]	1.02107171	0.0011256002	0.06498932	0.888596184
## alpha[4,32]	1.34901183	0.0017706416	0.10256886	1.143196972
## alpha[4,33]	0.82143805	0.0013587727	0.08319883	0.661472985
## alpha[4,34]	0.86745525	0.0008116604	0.05191663	0.765444697
## alpha[4,35]	1.80693659	0.0014725839	0.05959318	1.668447232
## alpha[4,36]	1.29309249	0.0007420505	0.04076249	1.213487119
## alpha[4,37]	1.97172254	0.0015905519	0.05176682	1.838843668

## alpha[4,38]	1.40382747	0.0016933280	0.09517370	1.229092535
## alpha[4,39]	1.30436280	0.0026170380	0.16380625	0.995375970
## alpha[4,40]	1.81675998	0.0027213002	0.14049935	1.526812353
## alpha[4,41]	1.01447311	0.0016331421	0.08296408	0.856535750
## alpha[4,42]	1.33092790	0.0031822028	0.10078514	1.179049422
## alpha[4,43]	1.42015912	0.0015497837	0.09697915	1.227027773
## alpha[4,44]	0.85852672	0.0008021268	0.04454145	0.768131924
## alpha[4,45]	0.94065391	0.0016865209	0.08283515	0.775813456
## alpha[4,46]	1.80515845	0.0021634195	0.13550553	1.536864533
## alpha[4,47]	0.40166710	0.0009385497	0.05984496	0.280472168
## alpha[4,48]	1.29989953	0.0015856046	0.09076024	1.110529757
## alpha[4,49]	2.17305362	0.0018385586	0.07958978	2.030984574
## alpha[4,50]	1.30755541	0.0012516276	0.05437093	1.186780963
## alpha[4,51]	1.97214306	0.0029114713	0.12629595	1.712273485
## alpha[5,1]	1.23757335	0.0015531810	0.10125102	1.026819962
## alpha[5,2]	2.09744007	0.0028575105	0.15421133	1.779414589
## alpha[5,3]	2.09273540	0.0019625078	0.10252404	1.875142109
## alpha[5,4]	1.80372523	0.0020145168	0.10786518	1.578120382
## alpha[5,5]	1.28415893	0.0011697874	0.05785030	1.167656454
## alpha[5,6]	1.43043263	0.0017900421	0.07209056	1.279470779
## alpha[5,7]	0.94314036	0.0028121222	0.14885137	0.648849170
## alpha[5,8]	0.73778609	0.0032169124	0.17213629	0.395789033
## alpha[5,9]	1.37652329	0.0040463787	0.16624365	0.976407172
## alpha[5,10]	1.54573778	0.0025797364	0.10665359	1.308027233
## alpha[5,11]	1.26023810	0.0029882253	0.12854657	1.026098787
## alpha[5,12]	1.37520925	0.0015358680	0.07683312	1.217745218
## alpha[5,13]	1.07992572	0.0023967090	0.12532354	0.837017470
## alpha[5,14]	0.48729696	0.0014646712	0.08439210	0.310000575
## alpha[5,15]	2.17023550	0.0031480094	0.11264459	1.902323828
## alpha[5,16]	1.64454065	0.0019771577	0.10898859	1.441598213
## alpha[5,17]	1.68499478	0.0014475481	0.08044618	1.533770605
## alpha[5,18]	1.68243486	0.0021892479	0.10307021	1.490520709
## alpha[5,19]	1.29770525	0.0021788654	0.12956742	1.039097990
## alpha[5,20]	1.29199118	0.0028152769	0.15463441	0.973645346
## alpha[5,21]	0.44206453	0.0009348695	0.05963415	0.322965072
## alpha[5,22]	1.61172193	0.0021404958	0.12142125	1.364799569
## alpha[5,23]	1.07236390	0.0025790538	0.13225106	0.819913521
## alpha[5,24]	1.77601714	0.0007909601	0.04035163	1.688326337
## alpha[5,25]	1.60948275	0.0024719627	0.13808479	1.324141909
## alpha[5,26]	1.69884954	0.0012686615	0.07714094	1.537732943
## alpha[5,27]	2.21004593	0.0021052243	0.12196688	1.970402374
## alpha[5,28]	1.59013266	0.0023216752	0.12118985	1.346234481
## alpha[5,29]	1.65418082	0.0013758861	0.07996985	1.502987920
## alpha[5,30]	1.07430010	0.0017025652	0.09598533	0.874268496
## alpha[5,31]	0.79415469	0.0012809760	0.07319355	0.650101368
## alpha[5,32]	1.35859954	0.0018835734	0.11466554	1.122145854
## alpha[5,33]	0.71211337	0.0014504575	0.09091039	0.531837475
## alpha[5,34]	0.96630601	0.0009424233	0.05973058	0.843851773
## alpha[5,35]	1.80277330	0.0015156985	0.06537460	1.688150346
## alpha[5,36]	1.39033282	0.0008758614	0.04792646	1.291584795
## alpha[5,37]	1.62299413	0.0018426100	0.05592760	1.546766830
## alpha[5,38]	1.45258135	0.0017780619	0.10338183	1.243645827
## alpha[5,39]	1.47710844	0.0028191391	0.17283028	1.117409011
## alpha[5,40]	1.69571214	0.0028589634	0.15032685	1.415448348

## alpha[5,41]	1.32094206	0.0027464129	0.09629808	1.085810321
## alpha[5,42]	1.72956191	0.0022679188	0.09448830	1.509347578
## alpha[5,43]	1.32741063	0.0018503330	0.11687542	1.108205930
## alpha[5,44]	0.92401500	0.0010072405	0.05025199	0.821220943
## alpha[5,45]	0.94645437	0.0015529905	0.08960115	0.766624568
## alpha[5,46]	2.03071748	0.0027420097	0.15757726	1.724750720
## alpha[5,47]	0.46180145	0.0013750813	0.07021200	0.324038299
## alpha[5,48]	1.27945683	0.0015950585	0.09530763	1.092497793
## alpha[5,49]	2.46957784	0.0017837568	0.08671671	2.277771865
## alpha[5,50]	1.28644834	0.0015238397	0.06012080	1.179408861
## alpha[5,51]	2.02992125	0.0028551156	0.14474083	1.747149758
## alpha[6,1]	1.41945530	0.0029694802	0.18049218	1.067766707
## alpha[6,2]	1.92178901	0.0053328082	0.28273090	1.416388828
## alpha[6,3]	1.61445386	0.0034630755	0.17927947	1.299743459
## alpha[6,4]	1.61425852	0.0033643701	0.18022154	1.286839757
## alpha[6,5]	1.01990763	0.0022916654	0.10525512	0.813943683
## alpha[6,6]	1.41904411	0.0044480672	0.12648467	1.201516062
## alpha[6,7]	1.07698220	0.0050638925	0.27187748	0.527867912
## alpha[6,8]	0.90609319	0.0056458091	0.32470378	0.255832885
## alpha[6,9]	0.62265396	0.0056692612	0.26350487	0.174229698
## alpha[6,10]	1.27763530	0.0037567508	0.16749990	0.981604814
## alpha[6,11]	1.14544849	0.0050573854	0.22981360	0.707621871
## alpha[6,12]	1.36309392	0.0022757685	0.12909722	1.120540029
## alpha[6,13]	1.04758759	0.0038992643	0.21412393	0.620796073
## alpha[6,14]	0.51487195	0.0027521303	0.16319850	0.190723458
## alpha[6,15]	2.10923746	0.0048890033	0.18609317	1.794288944
## alpha[6,16]	1.79242514	0.0036998096	0.19170302	1.398625586
## alpha[6,17]	1.77701282	0.0025660383	0.13869729	1.487423003
## alpha[6,18]	1.86772280	0.0033483008	0.17768078	1.492912210
## alpha[6,19]	1.07976877	0.0039899319	0.23259773	0.622974970
## alpha[6,20]	1.18757895	0.0056839353	0.31556248	0.567596298
## alpha[6,21]	0.69105799	0.0017841326	0.10438271	0.472370999
## alpha[6,22]	1.45509480	0.0042197023	0.21727714	1.059920305
## alpha[6,23]	1.17335093	0.0038902466	0.22876077	0.690342880
## alpha[6,24]	1.75198250	0.0013245272	0.06996295	1.619214649
## alpha[6,25]	1.52202718	0.0042708710	0.24070984	1.064486137
## alpha[6,26]	1.53213644	0.0023440812	0.13183510	1.277049503
## alpha[6,27]	2.49763710	0.0037857906	0.21735476	2.061933821
## alpha[6,28]	1.85269829	0.0041714363	0.21578495	1.408418110
## alpha[6,29]	1.56242277	0.0023251327	0.13632339	1.296336153
## alpha[6,30]	1.48343721	0.0039444182	0.19600513	1.097830526
## alpha[6,31]	0.50774079	0.0022839642	0.12878330	0.260086849
## alpha[6,32]	1.35699132	0.0040351921	0.21507913	0.919305752
## alpha[6,33]	0.76205753	0.0029033152	0.16369593	0.414741053
## alpha[6,34]	0.91669468	0.0018903280	0.10894118	0.705265893
## alpha[6,35]	1.89726297	0.0025536466	0.11282820	1.653324775
## alpha[6,36]	1.63330302	0.0015079377	0.08200821	1.471017381
## alpha[6,37]	1.72650722	0.0024517921	0.09143472	1.523375641
## alpha[6,38]	1.65610542	0.0029870665	0.17662436	1.294629026
## alpha[6,39]	1.38864547	0.0055795749	0.31709748	0.797717240
## alpha[6,40]	1.83200971	0.0046512637	0.26199626	1.286258982
## alpha[6,41]	1.12906451	0.0042049630	0.16774392	0.859437346
## alpha[6,42]	1.74824043	0.0036260014	0.15590945	1.479935732
## alpha[6,43]	1.61349462	0.0033014734	0.20635608	1.183314457

## alpha[6,44]	1.07403125	0.0016511721	0.08506704	0.901928140
## alpha[6,45]	0.88473520	0.0028183495	0.16330068	0.562751081
## alpha[6,46]	1.80461565	0.0055051782	0.28544535	1.241654053
## alpha[6,47]	0.38889789	0.0024878573	0.13195405	0.132536274
## alpha[6,48]	1.27180148	0.0031148275	0.17102916	0.917199413
## alpha[6,49]	2.71767685	0.0028382113	0.14512751	2.439916721
## alpha[6,50]	1.48508721	0.0022567662	0.10261532	1.266068134
## alpha[6,51]	2.13086030	0.0043924595	0.24863362	1.629176941
## alpha[7,1]	1.60459121	0.0109015951	0.70906827	0.099331864
## alpha[7,2]	1.77680133	0.0168116219	0.99017644	-0.239600747
## alpha[7,3]	1.09935725	0.0137238144	0.82718944	-0.603816443
## alpha[7,4]	1.31953605	0.0147311572	0.91450789	-0.590211284
## alpha[7,5]	0.59263780	0.0148405763	0.78548562	-1.096994819
## alpha[7,6]	1.20352940	0.0159422322	0.82914153	-0.505493268
## alpha[7,7]	1.20348960	0.0164503457	0.92543724	-0.617101458
## alpha[7,8]	1.06062316	0.0199275528	0.94776537	-0.794660158
## alpha[7,9]	-0.18398240	0.0205449751	1.32972771	-2.931072370
## alpha[7,10]	1.03002448	0.0124880067	0.77217601	-0.570384240
## alpha[7,11]	1.00109118	0.0158245528	0.73614225	-0.588791526
## alpha[7,12]	1.36797586	0.0115058466	0.63665317	0.067903867
## alpha[7,13]	0.96650531	0.0145288723	0.84133041	-0.782010751
## alpha[7,14]	0.54979412	0.0096829829	0.51110289	-0.464877937
## alpha[7,15]	1.90311095	0.0186395705	1.11370675	-0.331233928
## alpha[7,16]	1.97611245	0.0148769406	0.93493151	0.081122406
## alpha[7,17]	1.90310123	0.0124811774	0.76162223	0.408113164
## alpha[7,18]	2.05356725	0.0143096449	0.87246762	0.359230435
## alpha[7,19]	0.85891524	0.0134840306	0.77191108	-0.777367891
## alpha[7,20]	1.09073165	0.0141302632	0.84619228	-0.680614868
## alpha[7,21]	0.86324761	0.0098761159	0.61581653	-0.482744450
## alpha[7,22]	1.27894540	0.0150770723	0.86339709	-0.502560428
## alpha[7,23]	1.29694792	0.0148624856	0.87889670	-0.414985990
## alpha[7,24]	1.65691370	0.0105148382	0.63010920	0.339689936
## alpha[7,25]	1.37606071	0.0162924955	0.90665225	-0.575875486
## alpha[7,26]	1.29986792	0.0132025558	0.74117961	-0.288324642
## alpha[7,27]	2.78369423	0.0144752336	0.79437078	1.100098125
## alpha[7,28]	2.06232067	0.0155741616	1.02888949	-0.006398925
## alpha[7,29]	1.43651895	0.0106405040	0.74136910	-0.091063364
## alpha[7,30]	1.88975632	0.0103306809	0.53941022	0.876703384
## alpha[7,31]	0.19753707	0.0095450504	0.55887244	-0.967997663
## alpha[7,32]	1.34894817	0.0129498290	0.75254855	-0.145069967
## alpha[7,33]	0.87565212	0.0117315904	0.73242439	-0.552235999
## alpha[7,34]	0.85720803	0.0076448638	0.43597085	-0.040876812
## alpha[7,35]	1.81401558	0.0151154401	0.86604472	-0.046407382
## alpha[7,36]	1.94636888	0.0106044425	0.54387939	0.855588509
## alpha[7,37]	1.59740280	0.0122790295	0.76642707	-0.021832447
## alpha[7,38]	1.86665286	0.0134197372	0.90723146	0.047255431
## alpha[7,39]	1.33544635	0.0190078186	1.27829621	-1.232989870
## alpha[7,40]	2.10133308	0.0211673474	1.14722625	-0.074437530
## alpha[7,41]	1.02428119	0.0140435044	0.90443133	-0.808258088
## alpha[7,42]	1.79820305	0.0156784363	1.12015188	-0.397850449
## alpha[7,43]	1.92620597	0.0131783324	0.82568277	0.338967955
## alpha[7,44]	1.18773471	0.0089926668	0.45514725	0.244397161
## alpha[7,45]	0.82289519	0.0114153162	0.63390545	-0.462631233
## alpha[7,46]	1.60520846	0.0161381552	0.94917620	-0.390319852

## alpha[7,47]	0.30597725	0.0075382322	0.40485969	-0.582203555
## alpha[7,48]	1.31231502	0.0148691151	0.88130388	-0.426374892
## alpha[7,49]	2.90646633	0.0127243415	0.83144779	1.220086140
## alpha[7,50]	1.79904868	0.0117147000	0.68797632	0.444466983
## alpha[7,51]	2.29147450	0.0171739454	1.02673328	0.270585227
## sigma_alpha[1]	0.54786834	0.0068002878	0.26021926	0.217522912
## sigma_alpha[2]	0.74459819	0.0075676372	0.31702682	0.319062602
## sigma_alpha[3]	0.69324398	0.0060457797	0.27424143	0.338056304
## sigma_alpha[4]	0.81819392	0.0057785032	0.30410579	0.408758310
## sigma_alpha[5]	0.72606423	0.0066220777	0.30029471	0.328357400
## sigma_alpha[6]	0.78804795	0.0057097529	0.27811271	0.411157037
## sigma_alpha[7]	0.68991154	0.0086811806	0.31760575	0.227886350
## sigma_alpha[8]	0.53816222	0.0162073220	0.37418033	0.120675903
## sigma_alpha[9]	1.24509755	0.0077296650	0.37445223	0.630266876
## sigma_alpha[10]	0.72599643	0.0074558980	0.31763886	0.308530474
## sigma_alpha[11]	0.48820878	0.0089852127	0.29079968	0.152559858
## sigma_alpha[12]	0.58042129	0.0049740376	0.24136688	0.272542338
## sigma_alpha[13]	0.68178057	0.0071908177	0.30832211	0.267226782
## sigma_alpha[14]	0.32483171	0.0097651783	0.25159168	0.081400534
## sigma_alpha[15]	1.06881916	0.0082305599	0.36905963	0.477226916
## sigma_alpha[16]	0.87006752	0.0060847048	0.31683854	0.430336570
## sigma_alpha[17]	0.71932691	0.0063589592	0.28561431	0.348534940
## sigma_alpha[18]	0.78758337	0.0067935811	0.30858570	0.378091425
## sigma_alpha[19]	0.56327347	0.0064148510	0.26354323	0.228971004
## sigma_alpha[20]	0.50483916	0.0081202557	0.27009728	0.185039975
## sigma_alpha[21]	0.58259742	0.0050771675	0.24244637	0.260995913
## sigma_alpha[22]	0.67081884	0.0069564216	0.29166540	0.275565377
## sigma_alpha[23]	0.66717261	0.0086672766	0.31869539	0.266092717
## sigma_alpha[24]	0.66382229	0.0050277105	0.25202738	0.342305223
## sigma_alpha[25]	0.67494110	0.0085782942	0.32645562	0.244959110
## sigma_alpha[26]	0.64254479	0.0059966388	0.27328531	0.308795937
## sigma_alpha[27]	0.59989049	0.0059768670	0.25929922	0.269216245
## sigma_alpha[28]	0.94588574	0.0056449722	0.30998684	0.506125916
## sigma_alpha[29]	0.66997365	0.0057152289	0.28183577	0.308376419
## sigma_alpha[30]	0.32914183	0.0070554195	0.21365904	0.097741708
## sigma_alpha[31]	0.45796959	0.0058718334	0.22601402	0.200316849
## sigma_alpha[32]	0.57362609	0.0074502735	0.27041244	0.243741931
## sigma_alpha[33]	0.62967021	0.0066293681	0.27026373	0.284665178
## sigma_alpha[34]	0.35433281	0.0048680542	0.17380548	0.150289472
## sigma_alpha[35]	0.83332764	0.0062810128	0.30349746	0.406049420
## sigma_alpha[36]	0.53076939	0.0043260698	0.21164309	0.268709541
## sigma_alpha[37]	0.79743955	0.0066796950	0.31495001	0.373353730
## sigma_alpha[38]	0.83992870	0.0057045953	0.29638135	0.430175191
## sigma_alpha[39]	1.09588199	0.0147748883	0.47666276	0.389520513
## sigma_alpha[40]	0.95056863	0.0098720230	0.39637814	0.406517380
## sigma_alpha[41]	0.87142793	0.0105651641	0.35915921	0.294719866
## sigma_alpha[42]	1.12095272	0.0061443330	0.34785049	0.606509839
## sigma_alpha[43]	0.67550085	0.0060950922	0.27443763	0.322093435
## sigma_alpha[44]	0.41106481	0.0047626444	0.18938113	0.190042491
## sigma_alpha[45]	0.49628837	0.0073116923	0.26255345	0.197995889
## sigma_alpha[46]	0.68705070	0.0075168242	0.31180795	0.289677912
## sigma_alpha[47]	0.25279834	0.0063987920	0.18441677	0.069310132
## sigma_alpha[48]	0.78206961	0.0079789180	0.34403019	0.319458451
## sigma_alpha[49]	0.82600017	0.0055631788	0.28562790	0.434082921

## sigma_alpha[50]	0.66523866	0.0061938454	0.28283530	0.298966231
## sigma_alpha[51]	0.85023249	0.0066913654	0.31862321	0.429533161
## sigma_y[1]	0.08866165	0.0011738978	0.04548118	0.038851642
## sigma_y[2]	0.12430750	0.0022249986	0.06983796	0.050475847
## sigma_y[3]	0.06961150	0.0012540556	0.04381435	0.029074629
## sigma_y[4]	0.07003010	0.0015273642	0.04672149	0.027381875
## sigma_y[5]	0.03502829	0.0010787360	0.02976091	0.010411722
## sigma_y[6]	0.03922237	0.0018333406	0.03755892	0.013748406
## sigma_y[7]	0.14059097	0.0026969364	0.08403916	0.055548045
## sigma_y[8]	0.23204095	0.0024662143	0.10474440	0.100394089
## sigma_y[9]	0.09438144	0.0027889198	0.07448351	0.030383176
## sigma_y[10]	0.06047676	0.0014569009	0.04081485	0.019652570
## sigma_y[11]	0.11091447	0.0014077841	0.05651838	0.044065056
## sigma_y[12]	0.04925765	0.0009588605	0.03086080	0.019922315
## sigma_y[13]	0.10224329	0.0020543466	0.06237707	0.040664226
## sigma_y[14]	0.11065269	0.0012344224	0.05104663	0.047079111
## sigma_y[15]	0.06388344	0.0024942961	0.05877249	0.018722381
## sigma_y[16]	0.07238277	0.0012628736	0.04282020	0.028590073
## sigma_y[17]	0.05237404	0.0009380182	0.03133155	0.019649866
## sigma_y[18]	0.06995980	0.0012848478	0.04379597	0.025081419
## sigma_y[19]	0.12387086	0.0013435026	0.05731991	0.057385453
## sigma_y[20]	0.20588266	0.0016868604	0.08387788	0.102887268
## sigma_y[21]	0.03898363	0.0008692856	0.02706092	0.013499750
## sigma_y[22]	0.10128096	0.0016354276	0.05674426	0.041240219
## sigma_y[23]	0.11302946	0.0014197290	0.05800369	0.045600371
## sigma_y[24]	0.02153255	0.0004430939	0.01356122	0.008191883
## sigma_y[25]	0.11234387	0.0018014114	0.06600771	0.042767144
## sigma_y[26]	0.05113716	0.0009686172	0.03063640	0.020700603
## sigma_y[27]	0.11129152	0.0019647846	0.05871708	0.052570795
## sigma_y[28]	0.08689596	0.0016349514	0.05166106	0.036106556
## sigma_y[29]	0.05320440	0.0010851055	0.03457954	0.019514522
## sigma_y[30]	0.12389350	0.0013203314	0.05452194	0.060275992
## sigma_y[31]	0.05591200	0.0007055234	0.02742224	0.025088732
## sigma_y[32]	0.10877516	0.0015751426	0.05546593	0.049232448
## sigma_y[33]	0.07299260	0.0011160218	0.04181902	0.030375937
## sigma_y[34]	0.04715940	0.0006098533	0.02441859	0.020759813
## sigma_y[35]	0.03464405	0.0010004964	0.02523495	0.010525607
## sigma_y[36]	0.02842839	0.0005291670	0.01647331	0.011921873
## sigma_y[37]	0.02285043	0.0008933870	0.02024997	0.005912440
## sigma_y[38]	0.07094781	0.0012086232	0.04095365	0.030810320
## sigma_y[39]	0.15364124	0.0037572694	0.10651802	0.036408724
## sigma_y[40]	0.11686629	0.0019580647	0.06844989	0.034627954
## sigma_y[41]	0.05964323	0.0022793115	0.05203402	0.014786850
## sigma_y[42]	0.05096391	0.0016719330	0.03984883	0.017397621
## sigma_y[43]	0.09056009	0.0011327010	0.04510269	0.042038850
## sigma_y[44]	0.03265586	0.0005244420	0.01856653	0.014093982
## sigma_y[45]	0.07642702	0.0011850660	0.04074369	0.032888077
## sigma_y[46]	0.14794756	0.0015351956	0.06689559	0.068725798
## sigma_y[47]	0.07712525	0.0008942711	0.03635139	0.033985743
## sigma_y[48]	0.07229334	0.0013256261	0.04548123	0.022695541
## sigma_y[49]	0.05054600	0.0013362687	0.03468274	0.019381101
## sigma_y[50]	0.03303958	0.0007967601	0.02270810	0.010585202
## sigma_y[51]	0.10779206	0.0029190694	0.06923514	0.045743854
## mu[1,1]	0.96110926	0.0018612809	0.08753585	0.747904088

## mu[1,2]	1.47379357	0.0024432616	0.11898584	1.197732949
## mu[1,3]	1.54751776	0.0011664359	0.06825883	1.398489618
## mu[1,4]	1.69392619	0.0017250978	0.07842122	1.519380510
## mu[1,5]	1.26979091	0.0011728610	0.04547757	1.158279931
## mu[1,6]	1.52755658	0.0011358198	0.04727880	1.420955484
## mu[1,7]	1.01568889	0.0043095422	0.15371556	0.641774890
## mu[1,8]	0.68254079	0.0043517466	0.18339383	0.277398808
## mu[1,9]	1.93271632	0.0035908475	0.12209118	1.604910024
## mu[1,10]	1.28115147	0.0013540588	0.06102335	1.141398396
## mu[1,11]	0.77588916	0.0018151564	0.09305022	0.571574950
## mu[1,12]	1.20581297	0.0010416163	0.05236665	1.093215522
## mu[1,13]	1.09050338	0.0023088384	0.10783325	0.826984373
## mu[1,14]	0.41096160	0.0022901885	0.09280839	0.218066276
## mu[1,15]	1.69293411	0.0033861560	0.09986222	1.433118131
## mu[1,16]	1.84234395	0.0015000565	0.07856112	1.663924917
## mu[1,17]	1.55840919	0.0011136071	0.05589030	1.424143340
## mu[1,18]	1.63904614	0.0014301866	0.07801697	1.451860369
## mu[1,19]	1.04697745	0.0018456764	0.10567744	0.818836263
## mu[1,20]	0.85274605	0.0023745895	0.14174475	0.557234734
## mu[1,21]	0.73612525	0.0007797570	0.04089906	0.647198478
## mu[1,22]	1.29436175	0.0020655184	0.10020511	1.068806653
## mu[1,23]	1.17098824	0.0020222511	0.10590950	0.924606005
## mu[1,24]	1.48934403	0.0003945600	0.02376560	1.436308769
## mu[1,25]	1.13391729	0.0024053115	0.11125890	0.874780200
## mu[1,26]	1.38433167	0.0010559077	0.05399948	1.256345597
## mu[1,27]	1.42298613	0.0017501640	0.09558958	1.221596829
## mu[1,28]	1.96517143	0.0022043937	0.09588491	1.744535674
## mu[1,29]	1.42575086	0.0011018530	0.05913268	1.287546599
## mu[1,30]	0.51951599	0.0017187760	0.09240496	0.335665066
## mu[1,31]	0.78599397	0.0008675226	0.04987344	0.676438768
## mu[1,32]	1.15670880	0.0017454142	0.09766345	0.947109433
## mu[1,33]	1.03011526	0.0014002394	0.07479415	0.859468671
## mu[1,34]	0.72190964	0.0007310788	0.04294355	0.628022302
## mu[1,35]	1.67812778	0.0010408564	0.04220260	1.563653886
## mu[1,36]	1.23032877	0.0004513549	0.02832472	1.167979380
## mu[1,37]	1.52910550	0.0006399870	0.02844281	1.463715861
## mu[1,38]	1.67704754	0.0015344429	0.07551320	1.504944745
## mu[1,39]	1.59223318	0.0059162207	0.19750831	1.093890535
## mu[1,40]	1.77502193	0.0025899311	0.12374985	1.488919616
## mu[1,41]	1.10013232	0.0030270145	0.08574141	0.862821704
## mu[1,42]	1.96987114	0.0013652139	0.05940686	1.846430467
## mu[1,43]	1.35677937	0.0013474769	0.07862411	1.172458247
## mu[1,44]	0.84699560	0.0006385837	0.03257060	0.775677632
## mu[1,45]	0.87551452	0.0012410710	0.07066917	0.719906304
## mu[1,46]	1.41877529	0.0021863310	0.12690805	1.148226681
## mu[1,47]	0.33866490	0.0011722240	0.05991182	0.212578603
## mu[1,48]	1.31910485	0.0016996079	0.08237969	1.118615810
## mu[1,49]	2.04542327	0.0012674169	0.05603629	1.927767866
## mu[1,50]	1.20911534	0.0008602601	0.03929396	1.116076500
## mu[1,51]	1.91624234	0.0033118366	0.11575898	1.665221406
## mu[2,1]	0.98878619	0.0011782647	0.06079852	0.847607117
## mu[2,2]	1.56997227	0.0014779342	0.08269036	1.396793832
## mu[2,3]	1.70657275	0.0008719345	0.05165593	1.608137080
## mu[2,4]	1.71419054	0.0011307279	0.05703993	1.600449743

## mu[2,5]	1.25800134	0.0005192151	0.02928757	1.205868866
## mu[2,6]	1.48268363	0.0006273382	0.03337184	1.419521250
## mu[2,7]	0.96938634	0.0024857202	0.10484122	0.704356044
## mu[2,8]	0.72618122	0.0042207194	0.15850165	0.368582862
## mu[2,9]	1.71293110	0.0012891877	0.07403293	1.555164648
## mu[2,10]	1.35460882	0.0011539028	0.04908590	1.238400415
## mu[2,11]	0.86788809	0.0013161896	0.07119551	0.710291456
## mu[2,12]	1.24086082	0.0006624473	0.03663395	1.164597871
## mu[2,13]	1.06027395	0.0012592698	0.07101650	0.908017965
## mu[2,14]	0.41966127	0.0011903909	0.06837363	0.270829710
## mu[2,15]	1.59868774	0.0013524117	0.05712734	1.495689981
## mu[2,16]	1.84515468	0.0009512064	0.05615717	1.734604345
## mu[2,17]	1.60379949	0.0006714097	0.03858610	1.528473257
## mu[2,18]	1.67175744	0.0009466579	0.05323634	1.566205285
## mu[2,19]	1.11420235	0.0012706943	0.07827412	0.941893562
## mu[2,20]	0.98496872	0.0019494456	0.11672837	0.733454570
## mu[2,21]	0.73839543	0.0007785792	0.03503494	0.653252096
## mu[2,22]	1.34293423	0.0011580426	0.06931110	1.195768514
## mu[2,23]	1.19879772	0.0013068463	0.07537169	1.029214809
## mu[2,24]	1.53675817	0.0003362350	0.01802766	1.498405937
## mu[2,25]	1.17240089	0.0012699726	0.07372101	0.998728391
## mu[2,26]	1.44862277	0.0006295032	0.03761732	1.369982524
## mu[2,27]	1.59207533	0.0016236513	0.07402058	1.444267756
## mu[2,28]	1.93604778	0.0014509252	0.06774040	1.792543396
## mu[2,29]	1.48628949	0.0006772697	0.04125705	1.412476908
## mu[2,30]	0.59062172	0.0012622816	0.07270610	0.440169049
## mu[2,31]	0.86410965	0.0006460138	0.03758727	0.793667816
## mu[2,32]	1.22694442	0.0013906474	0.07441822	1.078465926
## mu[2,33]	0.98238895	0.0008877329	0.05131731	0.874921088
## mu[2,34]	0.77745978	0.0004968119	0.03097782	0.712954144
## mu[2,35]	1.68448912	0.0005858762	0.02915060	1.634150512
## mu[2,36]	1.29076229	0.0003371789	0.02105319	1.245283619
## mu[2,37]	1.63515103	0.0005131504	0.02207989	1.602483271
## mu[2,38]	1.64485523	0.0009151777	0.05300526	1.532228812
## mu[2,39]	1.44907593	0.0018851443	0.11592178	1.191296709
## mu[2,40]	1.77278906	0.0015040486	0.08427071	1.607667861
## mu[2,41]	1.01026390	0.0009046950	0.04926803	0.921427634
## mu[2,42]	1.93151914	0.0009203834	0.04486462	1.830774972
## mu[2,43]	1.44219968	0.0010756859	0.06174147	1.304499230
## mu[2,44]	0.88091427	0.0004349755	0.02396050	0.829652282
## mu[2,45]	0.90322736	0.0007851608	0.04997532	0.800596684
## mu[2,46]	1.56541727	0.0016267998	0.09430279	1.356143669
## mu[2,47]	0.35774970	0.0007329532	0.04423736	0.260706731
## mu[2,48]	1.28509165	0.0009186166	0.05538830	1.186567815
## mu[2,49]	2.18052591	0.0009335860	0.04189806	2.085286046
## mu[2,50]	1.21503516	0.0005744321	0.02801771	1.168018033
## mu[2,51]	1.98296186	0.0028695070	0.08643091	1.819733677
## mu[3,1]	0.99804851	0.0008456628	0.05272713	0.897466095
## mu[3,2]	1.65461600	0.0011734882	0.07252293	1.519824259
## mu[3,3]	1.84209177	0.0007775455	0.04689129	1.758712385
## mu[3,4]	1.69059571	0.0008430896	0.04903777	1.604356334
## mu[3,5]	1.27380428	0.0005752714	0.02755267	1.226959169
## mu[3,6]	1.41070462	0.0005697550	0.03001705	1.359738881
## mu[3,7]	0.90104745	0.0014892303	0.08396256	0.730782227

## mu[3,8]	0.71597190	0.0028390323	0.12598575	0.435329825
## mu[3,9]	1.48297322	0.0013500495	0.07066835	1.369950459
## mu[3,10]	1.35234268	0.0006033842	0.03879655	1.275278134
## mu[3,11]	0.93730376	0.0009838096	0.06152124	0.810982847
## mu[3,12]	1.24668045	0.0005256724	0.03197124	1.182587164
## mu[3,13]	1.02575743	0.0011269512	0.06287512	0.910764317
## mu[3,14]	0.43294700	0.0009748934	0.05852700	0.311232287
## mu[3,15]	1.56992065	0.0014310808	0.05222080	1.493031578
## mu[3,16]	1.82133716	0.0008621761	0.05075668	1.723106077
## mu[3,17]	1.64885361	0.0005706004	0.03437459	1.582559131
## mu[3,18]	1.69876828	0.0007914068	0.04638643	1.611376280
## mu[3,19]	1.16139277	0.0010718381	0.06935669	1.023553335
## mu[3,20]	1.10831202	0.0017655803	0.10642918	0.882515669
## mu[3,21]	0.65498497	0.0004875200	0.02749963	0.589944146
## mu[3,22]	1.38599530	0.0009907802	0.06293212	1.268997102
## mu[3,23]	1.21396976	0.0010528949	0.06534183	1.080877288
## mu[3,24]	1.54536462	0.0002771856	0.01578090	1.516339682
## mu[3,25]	1.21836734	0.0011305067	0.06701465	1.092426370
## mu[3,26]	1.50201375	0.0005626903	0.03366011	1.438797134
## mu[3,27]	1.72526540	0.0016303330	0.06790634	1.601467282
## mu[3,28]	1.83064218	0.0010731622	0.05736102	1.720432054
## mu[3,29]	1.55273705	0.0005915783	0.03648683	1.488690065
## mu[3,30]	0.66091686	0.0010996951	0.06397403	0.534199897
## mu[3,31]	0.92776921	0.0005566950	0.03323193	0.860785849
## mu[3,32]	1.28270239	0.0012537222	0.06480356	1.157047581
## mu[3,33]	0.91827095	0.0008030608	0.04489968	0.829193422
## mu[3,34]	0.82156569	0.0004536531	0.02889688	0.764003335
## mu[3,35]	1.72216490	0.0004832671	0.02579046	1.677443450
## mu[3,36]	1.30972276	0.0002767263	0.01850558	1.273790071
## mu[3,37]	1.75752249	0.0003311745	0.01840567	1.724561624
## mu[3,38]	1.56409789	0.0007173206	0.04661163	1.473629408
## mu[3,39]	1.36896930	0.0023609909	0.10863266	1.194198008
## mu[3,40]	1.78209181	0.0012381564	0.07374416	1.646866238
## mu[3,41]	0.99248745	0.0015844316	0.05061862	0.925305491
## mu[3,42]	1.74847051	0.0007339438	0.03766883	1.678775950
## mu[3,43]	1.45681851	0.0008646188	0.05420355	1.342135081
## mu[3,44]	0.88462433	0.0003369632	0.02128259	0.839426702
## mu[3,45]	0.92187264	0.0007621337	0.04597982	0.833968816
## mu[3,46]	1.68196493	0.0013607279	0.08305040	1.514813618
## mu[3,47]	0.37729566	0.0006482114	0.04026517	0.294717833
## mu[3,48]	1.27912471	0.0009310522	0.05052950	1.193442507
## mu[3,49]	2.22105796	0.0006232523	0.03484733	2.151439163
## mu[3,50]	1.24343765	0.0004486558	0.02370886	1.202591795
## mu[3,51]	1.99865149	0.0025535096	0.07600286	1.865667377
## mu[4,1]	1.01702448	0.0009277470	0.05693703	0.913100825
## mu[4,2]	1.74531977	0.0012466730	0.07528678	1.604462227
## mu[4,3]	1.94816681	0.0007954942	0.04753497	1.856441046
## mu[4,4]	1.66709225	0.0009539737	0.05173224	1.577710068
## mu[4,5]	1.29708788	0.0005162766	0.02704366	1.242612152
## mu[4,6]	1.35243274	0.0006500269	0.03150037	1.300979474
## mu[4,7]	0.84883073	0.0016864310	0.08928597	0.694335858
## mu[4,8]	0.69001884	0.0021411578	0.11988959	0.453356018
## mu[4,9]	1.31145032	0.0020102798	0.07784064	1.187090778
## mu[4,10]	1.33746475	0.0009276725	0.04528322	1.266026867

## mu[4,11]	1.00311741	0.0010645226	0.06412731	0.881032825
## mu[4,12]	1.25031620	0.0006297580	0.03461272	1.188411953
## mu[4,13]	1.00500129	0.0012199761	0.06546187	0.887767357
## mu[4,14]	0.44857145	0.0008748068	0.05610342	0.331601480
## mu[4,15]	1.62434271	0.0013919907	0.05212908	1.540081925
## mu[4,16]	1.78130419	0.0009107203	0.05169767	1.678451119
## mu[4,17]	1.68388083	0.0005596963	0.03549488	1.611224627
## mu[4,18]	1.71498069	0.0008595499	0.04829807	1.617247880
## mu[4,19]	1.19794934	0.0010650745	0.07073805	1.063176755
## mu[4,20]	1.20589972	0.0017531155	0.10857316	0.981669563
## mu[4,21]	0.54691550	0.0005221349	0.02898187	0.493720772
## mu[4,22]	1.43263633	0.0009973236	0.06438182	1.312019470
## mu[4,23]	1.20896408	0.0010368683	0.06772272	1.068633966
## mu[4,24]	1.55552796	0.0002895615	0.01673283	1.524638348
## mu[4,25]	1.28520820	0.0011427038	0.06898838	1.157761624
## mu[4,26]	1.55146403	0.0005476231	0.03397553	1.487821401
## mu[4,27]	1.84358922	0.0018131535	0.07489055	1.712289045
## mu[4,28]	1.70946137	0.0011148850	0.06008229	1.600670637
## mu[4,29]	1.61020930	0.0006418046	0.03617224	1.537184872
## mu[4,30]	0.74290132	0.0012390044	0.06749692	0.613894337
## mu[4,31]	0.95622237	0.0005720352	0.03507497	0.881737301
## mu[4,32]	1.32261569	0.0011598214	0.06462999	1.198173674
## mu[4,33]	0.85135476	0.0008047829	0.04717962	0.763218337
## mu[4,34]	0.85980000	0.0004736316	0.03049732	0.799515401
## mu[4,35]	1.76798405	0.0004580788	0.02619637	1.708892867
## mu[4,36]	1.31392338	0.0003216737	0.01957693	1.276332984
## mu[4,37]	1.83919754	0.0004644362	0.02102882	1.788341974
## mu[4,38]	1.48095891	0.0008527974	0.05060095	1.389100859
## mu[4,39]	1.34730626	0.0020604274	0.10416692	1.161506854
## mu[4,40]	1.78720108	0.0012013162	0.07511226	1.629175432
## mu[4,41]	1.03509101	0.0011580459	0.04767725	0.960505798
## mu[4,42]	1.56425929	0.0014225564	0.04658814	1.495303999
## mu[4,43]	1.42984190	0.0008675583	0.05528734	1.318483350
## mu[4,44]	0.87907346	0.0003749992	0.02293874	0.834880548
## mu[4,45]	0.93380385	0.0008584321	0.04863530	0.837873497
## mu[4,46]	1.78007917	0.0013169705	0.08551768	1.610736568
## mu[4,47]	0.39803939	0.0006284412	0.04073051	0.316830357
## mu[4,48]	1.28669095	0.0008139746	0.04883355	1.187649377
## mu[4,49]	2.23346537	0.0008005165	0.03853348	2.167376921
## mu[4,50]	1.27612644	0.0003939396	0.02375375	1.227265051
## mu[4,51]	1.99327270	0.0023489827	0.07696251	1.856618087
## mu[5,1]	1.07206398	0.0009046298	0.05479310	0.967680432
## mu[5,2]	1.85585341	0.0011253585	0.07183785	1.715885919
## mu[5,3]	2.01763248	0.0008368356	0.04596016	1.920693996
## mu[5,4]	1.68413741	0.0008877060	0.04816667	1.594679955
## mu[5,5]	1.30400711	0.0004925756	0.02549213	1.245668187
## mu[5,6]	1.34493718	0.0005841744	0.02920015	1.292391806
## mu[5,7]	0.84816816	0.0018561610	0.08856594	0.688404262
## mu[5,8]	0.68774994	0.0022720947	0.12312313	0.458498274
## mu[5,9]	1.25449232	0.0014718257	0.06804649	1.124268179
## mu[5,10]	1.37109686	0.0008043243	0.04209899	1.300983233
## mu[5,11]	1.08283992	0.0009315582	0.06012133	0.961248068
## mu[5,12]	1.27709688	0.0006202462	0.03248984	1.218476799
## mu[5,13]	1.01280115	0.0011210455	0.06172881	0.901124990

## mu[5,14]	0.46353145	0.0009149532	0.05497746	0.349914606
## mu[5,15]	1.76787850	0.0008902054	0.04609254	1.677910361
## mu[5,16]	1.73517570	0.0008389603	0.04878343	1.639254230
## mu[5,17]	1.69838378	0.0005881791	0.03520180	1.623086413
## mu[5,18]	1.71491106	0.0009483876	0.04809802	1.618192728
## mu[5,19]	1.23180076	0.0009951870	0.06750761	1.094414269
## mu[5,20]	1.26187665	0.0016908339	0.10562786	1.048808902
## mu[5,21]	0.47780690	0.0006610103	0.03055562	0.431267417
## mu[5,22]	1.48882172	0.0009432071	0.06056927	1.366186133
## mu[5,23]	1.17717784	0.0009858936	0.06638035	1.045968161
## mu[5,24]	1.60498141	0.0002615965	0.01558513	1.573678880
## mu[5,25]	1.38187254	0.0009996220	0.06425134	1.253646082
## mu[5,26]	1.60150871	0.0004895846	0.03195418	1.537677176
## mu[5,27]	1.96865298	0.0017359399	0.07542721	1.833732631
## mu[5,28]	1.63282414	0.0010830831	0.05778563	1.533018361
## mu[5,29]	1.64233686	0.0005928803	0.03417958	1.567566848
## mu[5,30]	0.84872210	0.0012885556	0.06737448	0.723535629
## mu[5,31]	0.93013744	0.0005507340	0.03396054	0.859272433
## mu[5,32]	1.34527624	0.0010381238	0.06337993	1.220989552
## mu[5,33]	0.79426217	0.0008104361	0.04641900	0.705132569
## mu[5,34]	0.89702148	0.0004305839	0.02870766	0.838297393
## mu[5,35]	1.79595885	0.0004711028	0.02563096	1.737709419
## mu[5,36]	1.33082013	0.0002908388	0.01854080	1.293610593
## mu[5,37]	1.82592496	0.0003821644	0.01900950	1.779940011
## mu[5,38]	1.44033236	0.0008150757	0.04812330	1.351149210
## mu[5,39]	1.37053290	0.0016510710	0.09650455	1.180463034
## mu[5,40]	1.77084491	0.0011378673	0.07310121	1.618986530
## mu[5,41]	1.11737958	0.0007473352	0.04273145	1.025409464
## mu[5,42]	1.51937053	0.0011680892	0.04160697	1.455154778
## mu[5,43]	1.39416706	0.0008876175	0.05444195	1.290609215
## mu[5,44]	0.88555689	0.0003417714	0.02160679	0.845058410
## mu[5,45]	0.94047438	0.0008663251	0.04770064	0.848196074
## mu[5,46]	1.87015186	0.0012541667	0.08304108	1.701222907
## mu[5,47]	0.41972428	0.0006090032	0.03977385	0.337831604
## mu[5,48]	1.28987743	0.0007211850	0.04657509	1.191072301
## mu[5,49]	2.28507016	0.0007580492	0.03677229	2.221646362
## mu[5,50]	1.29354711	0.0003862972	0.02257457	1.243660516
## mu[5,51]	1.99663182	0.0021597357	0.07496975	1.865088010
## mu[6,1]	1.15639207	0.0008560709	0.05485675	1.044144184
## mu[6,2]	1.96090012	0.0013497270	0.07880461	1.799880857
## mu[6,3]	2.03408197	0.0009465894	0.04954686	1.925972385
## mu[6,4]	1.72365943	0.0009278091	0.05055413	1.622576677
## mu[6,5]	1.28341319	0.0004919961	0.02587505	1.226514795
## mu[6,6]	1.37619685	0.0008745720	0.03352878	1.310752716
## mu[6,7]	0.89216329	0.0017619218	0.08848133	0.719704386
## mu[6,8]	0.71580355	0.0020975296	0.12293915	0.475101372
## mu[6,9]	1.25102703	0.0013960445	0.07224415	1.082351490
## mu[6,10]	1.43088843	0.0008040274	0.04449800	1.330471837
## mu[6,11]	1.16046606	0.0011694066	0.06509572	1.024622718
## mu[6,12]	1.31957265	0.0006769065	0.03556752	1.248755575
## mu[6,13]	1.03862811	0.0012060262	0.06559314	0.906253183
## mu[6,14]	0.47702677	0.0009632480	0.05597912	0.359357859
## mu[6,15]	1.94774872	0.0012625788	0.05083886	1.830245267
## mu[6,16]	1.69928961	0.0008687579	0.05103818	1.604298154

## mu[6,17]	1.70079114	0.0006369909	0.03729519	1.629592343
## mu[6,18]	1.71219039	0.0010573025	0.05043061	1.615255771
## mu[6,19]	1.25202800	0.0011150201	0.07137383	1.104817720
## mu[6,20]	1.27836160	0.0017411348	0.10488906	1.054355584
## mu[6,21]	0.46442636	0.0005639137	0.02952459	0.415126859
## mu[6,22]	1.53864846	0.0010588686	0.06358920	1.407946336
## mu[6,23]	1.13592094	0.0012210037	0.07027822	1.008999805
## mu[6,24]	1.67938681	0.0002646627	0.01598896	1.645251806
## mu[6,25]	1.48364357	0.0011355347	0.06985543	1.334394761
## mu[6,26]	1.63971233	0.0005331805	0.03502362	1.564362398
## mu[6,27]	2.10113151	0.0015271433	0.07395067	1.965394397
## mu[6,28]	1.61607579	0.0011396233	0.05922824	1.502653813
## mu[6,29]	1.64797896	0.0005914877	0.03628476	1.571536525
## mu[6,30]	0.97800528	0.0012237906	0.06602677	0.854099685
## mu[6,31]	0.85705022	0.0005785946	0.03552786	0.788881835
## mu[6,32]	1.35456669	0.0010473943	0.06523383	1.232766793
## mu[6,33]	0.75440173	0.0008106581	0.04770789	0.660452654
## mu[6,34]	0.92820928	0.0004472213	0.03002087	0.866019052
## mu[6,35]	1.80886118	0.0004948494	0.02699176	1.755309126
## mu[6,36]	1.37011346	0.0003253619	0.02058436	1.327831383
## mu[6,37]	1.75006409	0.0004832171	0.01990957	1.716887473
## mu[6,38]	1.44847029	0.0007972835	0.04875864	1.348810746
## mu[6,39]	1.41157416	0.0016105427	0.09777229	1.199044818
## mu[6,40]	1.74589117	0.0011589932	0.07538121	1.594597084
## mu[6,41]	1.20155229	0.0010060482	0.04603142	1.091665597
## mu[6,42]	1.59380538	0.0006247772	0.03708354	1.512229737
## mu[6,43]	1.37690182	0.0009535875	0.05894027	1.268595065
## mu[6,44]	0.90975198	0.0003993558	0.02278855	0.864180023
## mu[6,45]	0.94072717	0.0008498647	0.04890297	0.846460169
## mu[6,46]	1.93717930	0.0013742945	0.08748242	1.750647242
## mu[6,47]	0.43620426	0.0007101061	0.04239189	0.348915439
## mu[6,48]	1.28600997	0.0006740363	0.04654878	1.191067619
## mu[6,49]	2.37968458	0.0007020654	0.03838129	2.301630362
## mu[6,50]	1.30466052	0.0004420419	0.02401889	1.257046196
## mu[6,51]	2.01560311	0.0019404948	0.07812734	1.874642638
## mu[7,1]	1.24625411	0.0009334497	0.05822074	1.122875794
## mu[7,2]	2.01523016	0.0015261895	0.08629815	1.836886020
## mu[7,3]	1.97649308	0.0008192126	0.04848353	1.875144360
## mu[7,4]	1.73762363	0.0009683474	0.05296836	1.628877754
## mu[7,5]	1.23071630	0.0005082480	0.02682655	1.178239775
## mu[7,6]	1.40900582	0.0016769026	0.04140192	1.339639106
## mu[7,7]	0.95220491	0.0017966042	0.09558951	0.760788706
## mu[7,8]	0.76394686	0.0021324970	0.13331674	0.496524526
## mu[7,9]	1.18011041	0.0014960390	0.07399858	0.994026437
## mu[7,10]	1.45177608	0.0008739848	0.04673363	1.341469897
## mu[7,11]	1.20287837	0.0012952129	0.07193150	1.059858838
## mu[7,12]	1.35351077	0.0006795971	0.03851542	1.278583625
## mu[7,13]	1.05899167	0.0013373844	0.07276087	0.909498159
## mu[7,14]	0.48939268	0.0011508776	0.06300475	0.363901003
## mu[7,15]	2.08125408	0.0013205559	0.05330976	1.964362305
## mu[7,16]	1.69309417	0.0009185914	0.05245089	1.593703560
## mu[7,17]	1.70921404	0.0006300550	0.03775660	1.638360292
## mu[7,18]	1.73019029	0.0010318608	0.05092198	1.632334936
## mu[7,19]	1.23811265	0.0012867374	0.07832121	1.077761532

## mu[7,20]	1.26671988	0.0020638770	0.11900944	1.023724150
## mu[7,21]	0.49937933	0.0004498522	0.02815473	0.443327278
## mu[7,22]	1.55507810	0.0011492980	0.06805201	1.420446768
## mu[7,23]	1.11469796	0.0013447911	0.07467906	0.972756136
## mu[7,24]	1.73773987	0.0002658850	0.01644215	1.701076716
## mu[7,25]	1.54864168	0.0011908388	0.07468260	1.383198960
## mu[7,26]	1.64499671	0.0005527564	0.03597120	1.569075732
## mu[7,27]	2.23095925	0.0013634917	0.07320308	2.091059932
## mu[7,28]	1.65136909	0.0010833215	0.06234745	1.520988437
## mu[7,29]	1.63382795	0.0006475065	0.03842112	1.561732773
## mu[7,30]	1.12393547	0.0013175255	0.07318226	0.973349211
## mu[7,31]	0.75828047	0.0006122610	0.03684577	0.686769940
## mu[7,32]	1.35707734	0.0012968670	0.07026600	1.222939635
## mu[7,33]	0.73646956	0.0008653479	0.05030177	0.639278768
## mu[7,34]	0.94330509	0.0004919815	0.03148349	0.877455159
## mu[7,35]	1.82417898	0.0004828806	0.02693693	1.771873129
## mu[7,36]	1.43234770	0.0003291204	0.02139608	1.387546800
## mu[7,37]	1.68825401	0.0005546914	0.02096207	1.653837080
## mu[7,38]	1.49173951	0.0008233118	0.04868985	1.388660046
## mu[7,39]	1.43653117	0.0018404736	0.10741521	1.196976556
## mu[7,40]	1.74063153	0.0013699457	0.08242532	1.576054189
## mu[7,41]	1.24121972	0.0008626495	0.04753897	1.129874683
## mu[7,42]	1.68527038	0.0011015861	0.04259014	1.597749864
## mu[7,43]	1.40205161	0.0009082860	0.06006238	1.286618106
## mu[7,44]	0.94928072	0.0004224614	0.02355668	0.900881282
## mu[7,45]	0.93207880	0.0009138153	0.05246850	0.826345868
## mu[7,46]	1.95323495	0.0014147603	0.09311753	1.758422734
## mu[7,47]	0.43834532	0.0007764769	0.04760710	0.339193916
## mu[7,48]	1.28025299	0.0007123182	0.04863815	1.179906753
## mu[7,49]	2.48849419	0.0007365107	0.04091876	2.403184410
## mu[7,50]	1.33303058	0.0005019259	0.02550910	1.286674014
## mu[7,51]	2.04526915	0.0016699758	0.07899285	1.897159205
## mu[8,1]	1.32695180	0.0013811815	0.08389279	1.157437461
## mu[8,2]	1.99916798	0.0023342965	0.12800945	1.773619963
## mu[8,3]	1.84109788	0.0012467827	0.07182945	1.708354037
## mu[8,4]	1.69871650	0.0013480675	0.07384311	1.560460029
## mu[8,5]	1.14400909	0.0008798726	0.04044449	1.068315209
## mu[8,6]	1.41701284	0.0026845436	0.05829150	1.330697897
## mu[8,7]	1.00916801	0.0024794381	0.13627907	0.724448708
## mu[8,8]	0.82325281	0.0029892039	0.18316523	0.434879125
## mu[8,9]	0.97773877	0.0017294329	0.09922491	0.789562357
## mu[8,10]	1.40059856	0.0011079667	0.06242175	1.284627229
## mu[8,11]	1.19436108	0.0020222999	0.10489122	1.003924980
## mu[8,12]	1.36599236	0.0009299624	0.05379674	1.262617621
## mu[8,13]	1.05970753	0.0017934098	0.10085058	0.861784834
## mu[8,14]	0.50112384	0.0015642759	0.08959932	0.324280134
## mu[8,15]	2.12250559	0.0017671658	0.07316690	1.996566327
## mu[8,16]	1.72501739	0.0014787070	0.07790342	1.560228964
## mu[8,17]	1.73428763	0.0009094688	0.05426622	1.625523801
## mu[8,18]	1.78010183	0.0012932502	0.07311211	1.630539064
## mu[8,19]	1.18219502	0.0019101547	0.11235925	0.969156643
## mu[8,20]	1.23739957	0.0030851883	0.17401043	0.909506940
## mu[8,21]	0.57052158	0.0006876550	0.04117858	0.479752196
## mu[8,22]	1.52597527	0.0018511128	0.09933260	1.340796771

## mu[8,23]	1.12885514	0.0016866831	0.10477980	0.907727943	
## mu[8,24]	1.75637077	0.0003830256	0.02310486	1.712613158	
## mu[8,25]	1.55560496	0.0017766941	0.10711094	1.353880302	
## mu[8,26]	1.60775370	0.0008849838	0.05178113	1.510587127	
## mu[8,27]	2.35246430	0.0018330747	0.10266247	2.144248772	
## mu[8,28]	1.72631192	0.0017426064	0.09239380	1.518245787	
## mu[8,29]	1.60567490	0.0009556891	0.05559456	1.497631557	
## mu[8,30]	1.28030551	0.0020797686	0.10681942	1.060339769	
## mu[8,31]	0.64921260	0.0009479966	0.05422000	0.547754278	
## mu[8,32]	1.35742812	0.0020905237	0.10376416	1.141959694	
## mu[8,33]	0.74172960	0.0013544313	0.07375934	0.587130932	
## mu[8,34]	0.93820165	0.0008159089	0.04725647	0.844460936	
## mu[8,35]	1.84837055	0.0006450798	0.03791012	1.765177915	
## mu[8,36]	1.51631428	0.0005159899	0.03060774	1.453476093	
## mu[8,37]	1.67932617	0.0005122476	0.02748990	1.620168242	
## mu[8,38]	1.55771409	0.0011816792	0.07032332	1.409098267	
## mu[8,39]	1.42816977	0.0028187337	0.15477998	1.123525449	
## mu[8,40]	1.77199366	0.0019748423	0.11855445	1.513580205	
## mu[8,41]	1.21643553	0.0012078912	0.06809967	1.091349779	
## mu[8,42]	1.73163718	0.0017264472	0.06082732	1.623981466	
## mu[8,43]	1.47889970	0.0013624789	0.08818318	1.298961461	
## mu[8,44]	1.00002761	0.0005947026	0.03369080	0.931726586	
## mu[8,45]	0.91418561	0.0013351085	0.07626153	0.759786751	
## mu[8,46]	1.90881310	0.0023079214	0.13355229	1.654663860	
## mu[8,47]	0.42236936	0.0011295187	0.06804747	0.297344548	
## mu[8,48]	1.27689908	0.0012582549	0.07274699	1.125537079	
## mu[8,49]	2.59138287	0.0010877854	0.05796818	2.482485016	
## mu[8,50]	1.39274837	0.0006932132	0.03725672	1.312728413	
## mu[8,51]	2.08253319	0.0019574335	0.10926694	1.869743454	
## lp_	776.50792729	0.9236478515	23.49621288	729.970694074	
##	25%	50%	75%	97.5%	n_eff
## alpha[1,1]	0.28914033	0.51423282	0.76249650	1.48728981	2932.8558
## alpha[1,2]	0.42633559	0.73312891	1.07287578	1.98315938	3680.1005
## alpha[1,3]	0.40863904	0.68826810	0.96429182	1.72429585	3702.6217
## alpha[1,4]	0.65844647	0.98607169	1.32701698	2.09960097	3604.2335
## alpha[1,5]	0.66558260	0.95202821	1.25314705	2.07163639	2566.5730
## alpha[1,6]	0.76233910	1.05996126	1.38836975	2.15871800	3310.5630
## alpha[1,7]	0.35876587	0.67855611	1.03538578	1.93621394	2430.4274
## alpha[1,8]	0.03224964	0.24117477	0.48471592	1.20379750	1428.5548
## alpha[1,9]	1.17729930	1.71522126	2.25217504	3.53684876	3644.0732
## alpha[1,10]	0.24942332	0.53419017	0.80407910	1.47311998	3289.0100
## alpha[1,11]	0.07315435	0.26558342	0.47940646	1.09484343	2538.2891
## alpha[1,12]	0.43421894	0.65754635	0.90706832	1.48226756	3349.9020
## alpha[1,13]	0.46483431	0.75370993	1.09150258	1.96840078	2757.5509
## alpha[1,14]	0.08495708	0.21271301	0.38840008	1.21922652	1444.1347
## alpha[1,15]	1.01322600	1.47604971	1.93657423	2.99593741	2960.9295
## alpha[1,16]	0.79293864	1.17159751	1.53986502	2.44014874	3994.1381
## alpha[1,17]	0.65000719	0.94887449	1.26257551	2.08773424	2996.1548
## alpha[1,18]	0.67725396	1.01398853	1.36907317	2.28406086	3038.4910
## alpha[1,19]	0.26618543	0.49139882	0.76387500	1.47253481	3514.6342
## alpha[1,20]	0.06975146	0.28131262	0.52010604	1.24602112	3072.5952
## alpha[1,21]	0.05777879	0.30005196	0.52555296	1.02994625	3435.2562
## alpha[1,22]	0.43755815	0.72905817	1.05168812	1.82584228	3091.5573
## alpha[1,23]	0.39589418	0.67313064	0.99220766	1.92763574	2989.1029

## alpha[1,24]	0.56765548	0.81776941	1.07231590	1.64407256	4156.0058
## alpha[1,25]	0.37253236	0.65828937	1.00007977	1.82439034	2942.6932
## alpha[1,26]	0.52056037	0.77867221	1.03419995	1.77343339	3764.2227
## alpha[1,27]	0.25639112	0.53186521	0.78937958	1.46145584	3672.2385
## alpha[1,28]	0.79019271	1.16991799	1.57886978	2.46359400	4356.7524
## alpha[1,29]	0.57349912	0.85268719	1.15742478	1.94626693	3200.4594
## alpha[1,30]	0.03750865	0.17273428	0.33518911	0.80290393	2422.7664
## alpha[1,31]	0.16438154	0.34460339	0.54598661	1.10612451	3172.2296
## alpha[1,32]	0.33872070	0.58203724	0.84795804	1.62213289	2401.9458
## alpha[1,33]	0.46496645	0.72371970	1.00839654	1.81781087	3346.5962
## alpha[1,34]	0.19611198	0.33851195	0.49267985	0.93754193	3740.2034
## alpha[1,35]	0.89274257	1.20662496	1.53383631	2.35746067	3177.0278
## alpha[1,36]	0.40744948	0.59711437	0.79743011	1.32395526	3273.4008
## alpha[1,37]	0.58022842	0.88464639	1.20523718	1.94384639	3309.7304
## alpha[1,38]	0.74469735	1.08936424	1.44448888	2.23214497	4226.1217
## alpha[1,39]	0.80470035	1.39568332	2.12228198	3.80243996	1415.5524
## alpha[1,40]	0.73957316	1.16244248	1.66997444	3.03563335	2628.3257
## alpha[1,41]	0.65224306	1.05839135	1.48779100	2.45183506	1826.4195
## alpha[1,42]	0.59819786	1.02535029	1.48267491	2.42326045	4912.7244
## alpha[1,43]	0.30603117	0.58516831	0.86423608	1.50356384	3457.8554
## alpha[1,44]	0.28030342	0.42323194	0.57928277	1.03577358	3124.3785
## alpha[1,45]	0.28110900	0.48457612	0.72383870	1.36600924	2216.5578
## alpha[1,46]	0.28151200	0.57037902	0.88960244	1.78954465	3595.4091
## alpha[1,47]	0.06310333	0.16321054	0.29055192	0.72391080	2552.8096
## alpha[1,48]	0.63800016	0.99681652	1.38258998	2.33501620	2454.5899
## alpha[1,49]	0.55201426	0.88113404	1.20767224	1.97196002	4251.8758
## alpha[1,50]	0.57602395	0.83410752	1.11282380	1.82954627	2690.9672
## alpha[1,51]	0.67697199	1.03502201	1.42041813	2.29843254	3544.2690
## alpha[2,1]	0.73787987	0.87288285	1.00739194	1.33696922	2663.1818
## alpha[2,2]	1.08466739	1.28053975	1.48746214	1.89719663	2860.4067
## alpha[2,3]	1.10860409	1.24510618	1.37610686	1.67119498	3362.9882
## alpha[2,4]	1.44601622	1.58403984	1.72157263	2.02390191	2847.2908
## alpha[2,5]	1.25212764	1.39203064	1.48495592	1.63373999	1136.8975
## alpha[2,6]	1.46969908	1.56776478	1.65989043	1.85598155	2048.1254
## alpha[2,7]	0.82892870	1.05966272	1.28011401	1.73451744	1550.7370
## alpha[2,8]	0.31745930	0.51013840	0.70334181	1.16438988	1580.5435
## alpha[2,9]	2.08357842	2.33577450	2.54752757	2.94542598	1511.8050
## alpha[2,10]	0.88347001	1.00546730	1.12860732	1.40082915	3259.0281
## alpha[2,11]	0.43989769	0.56535985	0.69433286	1.02141713	2783.6549
## alpha[2,12]	0.99498090	1.09518542	1.19407041	1.40647396	3029.0095
## alpha[2,13]	0.95214324	1.13594213	1.33452305	1.71698520	2388.3151
## alpha[2,14]	0.25770380	0.36690516	0.50800789	1.00265496	991.7158
## alpha[2,15]	1.81652374	2.03558125	2.18620443	2.43226355	878.7458
## alpha[2,16]	1.63989455	1.81929027	1.98156716	2.31066323	2882.1356
## alpha[2,17]	1.36177572	1.50693778	1.64466376	1.88899259	1920.2825
## alpha[2,18]	1.41119302	1.60622320	1.77451951	2.08938292	2097.7735
## alpha[2,19]	0.73856066	0.88845353	1.05493171	1.43218655	3345.4658
## alpha[2,20]	0.44239705	0.60226749	0.77841197	1.21052690	3123.3052
## alpha[2,21]	0.47051532	0.56254075	0.66451223	0.89408909	2954.6591
## alpha[2,22]	1.01573182	1.20463996	1.38631297	1.77174370	2365.7658
## alpha[2,23]	0.90998581	1.09418272	1.30092168	1.75402987	2520.3865
## alpha[2,24]	1.28024863	1.33621839	1.39268723	1.53799846	2394.9455
## alpha[2,25]	0.86606778	1.07579370	1.29005507	1.68872949	2041.5693
## alpha[2,26]	1.14706409	1.26822674	1.38406629	1.60941801	2539.8209

## alpha[2,27]	0.91786871	1.05939551	1.20962953	1.54627287	4170.3733
## alpha[2,28]	1.70786113	1.89010014	2.07084953	2.45539904	2903.7593
## alpha[2,29]	1.20651314	1.35293901	1.49643866	1.75525269	2418.1901
## alpha[2,30]	0.26735079	0.37249039	0.49014441	0.79399152	2612.8049
## alpha[2,31]	0.54340816	0.63831009	0.73688301	0.96533586	2638.6036
## alpha[2,32]	0.84881893	1.00647684	1.17604715	1.55080199	2468.3518
## alpha[2,33]	0.93891417	1.08949246	1.24160070	1.55477457	2578.7164
## alpha[2,34]	0.52631329	0.60675009	0.68505923	0.86442850	3688.1099
## alpha[2,35]	1.64266753	1.77947630	1.87383517	2.03423575	1019.2078
## alpha[2,36]	0.99066854	1.05487034	1.11560284	1.26452951	3627.0493
## alpha[2,37]	1.35057561	1.43887339	1.49432572	1.60169747	1045.3175
## alpha[2,38]	1.50550484	1.65504316	1.80114958	2.11079835	3122.9636
## alpha[2,39]	1.45435597	1.96564715	2.49451118	3.08290085	844.8493
## alpha[2,40]	1.50113586	1.79853318	2.14257234	2.68424952	1575.5840
## alpha[2,41]	1.18934284	1.47523194	1.63056947	1.83456085	602.2460
## alpha[2,42]	1.61800332	1.74049116	1.87864404	2.22489240	3299.4648
## alpha[2,43]	0.95853801	1.08789790	1.22163295	1.54492678	4155.1890
## alpha[2,44]	0.66907030	0.73324210	0.80177192	0.95197043	3068.5596
## alpha[2,45]	0.67935414	0.81130422	0.94814514	1.27399986	1796.6960
## alpha[2,46]	0.92433342	1.10380453	1.29176469	1.73463271	3540.2339
## alpha[2,47]	0.20998249	0.28619163	0.38224734	0.65699496	1921.2829
## alpha[2,48]	1.22350045	1.45876580	1.67756833	2.00687429	1698.4206
## alpha[2,49]	1.52368410	1.62879494	1.75214234	2.03151417	2578.6973
## alpha[2,50]	1.14780160	1.28098355	1.37427515	1.53654858	1161.8528
## alpha[2,51]	1.53256128	1.72876889	1.91943195	2.31494768	2253.4942
## alpha[3,1]	0.95361264	1.01889054	1.07426707	1.20806727	2868.6465
## alpha[3,2]	1.48322244	1.56611534	1.64431942	1.83233127	3369.5545
## alpha[3,3]	1.63219165	1.68858106	1.74646893	1.89410240	3210.0511
## alpha[3,4]	1.71724084	1.77781532	1.83806996	1.97786854	2882.0164
## alpha[3,5]	1.16830479	1.20699470	1.25949655	1.38128841	1569.2292
## alpha[3,6]	1.49778478	1.53903682	1.58076084	1.68620462	2618.1340
## alpha[3,7]	0.93600847	1.03014809	1.11277969	1.30512440	2312.0195
## alpha[3,8]	0.64947594	0.79043717	0.92718851	1.31399769	848.8602
## alpha[3,9]	1.71387280	1.80170350	1.88450264	2.10241367	3939.7770
## alpha[3,10]	1.38673356	1.45544906	1.52313712	1.63775115	1485.5231
## alpha[3,11]	0.81155860	0.87861507	0.94827447	1.11232404	2376.8382
## alpha[3,12]	1.23630912	1.27857731	1.31871052	1.41422507	3046.7550
## alpha[3,13]	1.00678731	1.08067875	1.15063157	1.31335367	3820.8238
## alpha[3,14]	0.35455115	0.41446026	0.47109678	0.60636955	2563.6797
## alpha[3,15]	1.47846477	1.53923388	1.60827168	1.78247637	2370.7520
## alpha[3,16]	1.80674008	1.87531241	1.94633299	2.11738137	3515.1303
## alpha[3,17]	1.52645008	1.58404388	1.64415735	1.77690649	2525.6606
## alpha[3,18]	1.58882174	1.66268655	1.73630366	1.88953254	2207.8211
## alpha[3,19]	1.05267620	1.12457929	1.19780986	1.36114451	4145.9464
## alpha[3,20]	0.86109383	0.95677764	1.05538263	1.25215623	3737.2173
## alpha[3,21]	0.81851174	0.87158986	0.91733590	0.99493845	1945.1230
## alpha[3,22]	1.26540511	1.33638431	1.41320720	1.56952624	3806.4605
## alpha[3,23]	1.12205970	1.20448237	1.28645932	1.44698014	3392.6348
## alpha[3,24]	1.55943863	1.58505851	1.60969263	1.67906896	2230.8882
## alpha[3,25]	1.08541438	1.15861370	1.23068259	1.39132345	3864.8701
## alpha[3,26]	1.39784729	1.44473736	1.49239072	1.61034255	3514.4753
## alpha[3,27]	1.52877966	1.60075948	1.67052957	1.83613094	2776.8842
## alpha[3,28]	1.97697033	2.05521099	2.13373368	2.30021952	3013.3016
## alpha[3,29]	1.39636188	1.45287747	1.51087470	1.64451827	2976.9444

## alpha[3,30]	0.51867329	0.57869952	0.63761672	0.78521652	3088.1880
## alpha[3,31]	0.80775925	0.85340366	0.89789026	1.00171447	2823.6501
## alpha[3,32]	1.15686013	1.22689225	1.29593829	1.45467727	2623.7765
## alpha[3,33]	0.95876239	1.01903619	1.07648896	1.20391152	2983.5030
## alpha[3,34]	0.74682097	0.77906547	0.81167724	0.88847702	4216.3136
## alpha[3,35]	1.57960552	1.61944085	1.67546925	1.81768934	1267.6695
## alpha[3,36]	1.30568339	1.33366646	1.36321631	1.43113883	3273.6204
## alpha[3,37]	1.52374481	1.54967818	1.59169759	1.72815313	1043.3095
## alpha[3,38]	1.66254032	1.72635070	1.79083597	1.93430648	3758.9365
## alpha[3,39]	1.25384675	1.40356092	1.55206852	1.81573539	1920.7258
## alpha[3,40]	1.63265161	1.75760481	1.86237058	2.07990148	2027.3930
## alpha[3,41]	0.86182813	0.92109173	1.00738818	1.18161841	1366.8493
## alpha[3,42]	2.10708253	2.17809731	2.23720860	2.35596691	1791.4014
## alpha[3,43]	1.45209496	1.51673248	1.58093963	1.72888273	3433.2375
## alpha[3,44]	0.88579573	0.91655162	0.94448012	1.01631732	3354.6941
## alpha[3,45]	0.85388732	0.90601968	0.96220640	1.08218506	2422.0117
## alpha[3,46]	1.48255262	1.56953812	1.65674713	1.84498955	3271.8146
## alpha[3,47]	0.31653301	0.35540474	0.39038320	0.47244660	3375.7445
## alpha[3,48]	1.16340626	1.24821359	1.33100452	1.50764136	2342.3324
## alpha[3,49]	2.23057405	2.29004451	2.34230215	2.44935539	1940.8783
## alpha[3,50]	1.12668378	1.16769797	1.21984640	1.33912478	1327.6342
## alpha[3,51]	1.95942126	2.03807817	2.11737402	2.32067875	1444.4461
## alpha[4,1]	0.91578506	0.97513130	1.03445240	1.17353755	3266.8276
## alpha[4,2]	1.65944968	1.73793114	1.81878276	1.99939467	3228.7761
## alpha[4,3]	1.95893530	2.00912955	2.05824672	2.17359098	3405.2207
## alpha[4,4]	1.54464417	1.59848613	1.65723744	1.82031244	2615.6390
## alpha[4,5]	1.29786398	1.32974378	1.35733278	1.42464959	2322.8475
## alpha[4,6]	1.23928732	1.27187677	1.30600275	1.41476921	2124.5728
## alpha[4,7]	0.68077349	0.76584050	0.86125986	1.08296618	2108.2858
## alpha[4,8]	0.54374503	0.65757042	0.75959929	0.97821170	1451.7111
## alpha[4,9]	1.04640516	1.11783683	1.20012888	1.50485025	1357.6804
## alpha[4,10]	1.19237958	1.24948631	1.31961682	1.47391315	1376.0993
## alpha[4,11]	0.92878621	1.00079585	1.07029904	1.20120604	2416.7548
## alpha[4,12]	1.17875027	1.21508590	1.25453411	1.35962547	2507.7996
## alpha[4,13]	0.89908506	0.96253429	1.02802974	1.20442000	2989.8299
## alpha[4,14]	0.40641113	0.45414721	0.50188392	0.62092670	3349.1572
## alpha[4,15]	1.49712750	1.54419994	1.59095777	1.76590804	1638.4784
## alpha[4,16]	1.71798477	1.77597641	1.83193127	1.96467490	3191.5055
## alpha[4,17]	1.67532024	1.71931057	1.76021120	1.85248469	3238.3636
## alpha[4,18]	1.68223642	1.74198005	1.79732782	1.90502873	2641.6800
## alpha[4,19]	1.13432075	1.20288428	1.27305758	1.43200287	4084.1965
## alpha[4,20]	1.18139766	1.27332224	1.36458196	1.58365083	3831.6149
## alpha[4,21]	0.42111866	0.45428186	0.49119822	0.59649964	2480.1856
## alpha[4,22]	1.36602930	1.42906244	1.49337080	1.64998259	3987.9044
## alpha[4,23]	1.16850434	1.23695377	1.30596073	1.46442650	3492.3158
## alpha[4,24]	1.48465822	1.50379216	1.52403269	1.58488239	2490.0583
## alpha[4,25]	1.19394929	1.26631571	1.33854519	1.50262879	3523.3645
## alpha[4,26]	1.51949863	1.55881087	1.59720851	1.69420109	3703.2983
## alpha[4,27]	1.78931447	1.85702057	1.91972510	2.09540858	2057.5848
## alpha[4,28]	1.54790196	1.60818180	1.67813106	1.85570509	2974.0208
## alpha[4,29]	1.61150474	1.65578477	1.69774921	1.79405695	2885.6227
## alpha[4,30]	0.67950459	0.73559540	0.79700762	0.92456558	2873.4753
## alpha[4,31]	0.98232273	1.02163897	1.06254682	1.14761028	3333.6173
## alpha[4,32]	1.28691460	1.34815624	1.40868544	1.55606051	3355.5966

## alpha[4,33]	0.76969868	0.81840476	0.87040261	0.99436942	3749.2195
## alpha[4,34]	0.83580022	0.86602109	0.89763240	0.97643017	4091.3283
## alpha[4,35]	1.77834560	1.81474889	1.84372338	1.90880787	1637.6950
## alpha[4,36]	1.26856272	1.29186645	1.31726462	1.37449134	3017.5501
## alpha[4,37]	1.95116176	1.98262421	2.00349633	2.04529643	1059.2714
## alpha[4,38]	1.34582550	1.40163270	1.45376978	1.60108500	3159.0152
## alpha[4,39]	1.20322030	1.30287384	1.39739819	1.66024924	3917.7877
## alpha[4,40]	1.73040262	1.82030270	1.90771684	2.08071592	2665.6045
## alpha[4,41]	0.96997374	1.01360589	1.05415059	1.20244464	2580.6685
## alpha[4,42]	1.27080819	1.31508449	1.37351131	1.56279638	1003.0839
## alpha[4,43]	1.36214556	1.42013660	1.47931856	1.62368524	3915.7466
## alpha[4,44]	0.83377551	0.85835065	0.88366368	0.94944706	3083.4910
## alpha[4,45]	0.89330014	0.94030532	0.98784819	1.11261009	2412.3808
## alpha[4,46]	1.72135304	1.80371967	1.88697724	2.07808845	3923.1288
## alpha[4,47]	0.36553779	0.40284246	0.43883195	0.51553280	4065.7489
## alpha[4,48]	1.24601416	1.30314678	1.35465819	1.47350849	3276.4343
## alpha[4,49]	2.12573523	2.16752389	2.21299679	2.34856056	1873.9573
## alpha[4,50]	1.27720454	1.31370152	1.34220209	1.40241179	1887.0490
## alpha[4,51]	1.90272883	1.97364178	2.04559369	2.21963609	1881.7148
## alpha[5,1]	1.17724771	1.24037010	1.29890058	1.43666918	4249.6647
## alpha[5,2]	2.00262543	2.10140212	2.19761384	2.38544963	2912.4394
## alpha[5,3]	2.03457220	2.09756191	2.15464773	2.28923876	2729.1575
## alpha[5,4]	1.74200287	1.80985779	1.86890963	2.00546687	2866.9540
## alpha[5,5]	1.25254550	1.28323224	1.31472915	1.41080325	2445.6671
## alpha[5,6]	1.39692026	1.43429900	1.47092432	1.55974835	1621.9236
## alpha[5,7]	0.85376718	0.94314204	1.03523254	1.23226671	2801.8010
## alpha[5,8]	0.63016814	0.73815727	0.84087832	1.08513076	2863.2970
## alpha[5,9]	1.29772079	1.40014107	1.47949644	1.65156296	1687.9402
## alpha[5,10]	1.48072293	1.55639882	1.62125197	1.71971182	1709.2292
## alpha[5,11]	1.17575502	1.25299441	1.33876454	1.52762946	1850.5223
## alpha[5,12]	1.32949634	1.37733874	1.42135272	1.52414559	2502.5869
## alpha[5,13]	1.00576410	1.08312690	1.15548744	1.32385205	2734.2278
## alpha[5,14]	0.43978147	0.48879074	0.53594809	0.65082829	3319.8872
## alpha[5,15]	2.12118162	2.18306001	2.23652212	2.35658003	1280.4087
## alpha[5,16]	1.57510325	1.63990480	1.70675192	1.86951408	3038.6416
## alpha[5,17]	1.63329711	1.68148244	1.73121437	1.85578767	3088.4802
## alpha[5,18]	1.61944619	1.67701713	1.74109218	1.89403776	2216.5446
## alpha[5,19]	1.21688128	1.29650750	1.37662301	1.56275472	3536.1514
## alpha[5,20]	1.20340017	1.29262422	1.38737336	1.59762433	3016.9636
## alpha[5,21]	0.40738501	0.44240613	0.47694799	0.55919590	4069.0034
## alpha[5,22]	1.53600089	1.61393544	1.68773080	1.85355864	3217.8119
## alpha[5,23]	0.98607563	1.06760098	1.15318779	1.35211940	2629.5261
## alpha[5,24]	1.75433021	1.77837541	1.79936244	1.85424684	2602.6343
## alpha[5,25]	1.52258818	1.61090004	1.69892762	1.87801875	3120.3825
## alpha[5,26]	1.65356491	1.70144704	1.74534672	1.84978067	3697.2459
## alpha[5,27]	2.13586223	2.21131949	2.28092483	2.45159833	3356.5032
## alpha[5,28]	1.51764725	1.58990005	1.66160933	1.83559895	2724.7684
## alpha[5,29]	1.60760862	1.65314384	1.69926384	1.81390979	3378.2175
## alpha[5,30]	1.01693879	1.07354912	1.13146978	1.26945118	3178.3535
## alpha[5,31]	0.75059085	0.79334417	0.83812523	0.93592433	3264.8531
## alpha[5,32]	1.28872263	1.35858801	1.42747161	1.58488137	3705.9600
## alpha[5,33]	0.65483650	0.71169954	0.76886661	0.89513220	3928.4118
## alpha[5,34]	0.93006816	0.96773415	1.00285622	1.08433750	4016.9966
## alpha[5,35]	1.76438437	1.79685309	1.83477259	1.95059919	1860.3405

## alpha[5,36]	1.36317144	1.39093917	1.41774943	1.48431749	2994.1933
## alpha[5,37]	1.59005573	1.61337280	1.64490841	1.76848520	921.2671
## alpha[5,38]	1.39229699	1.45306685	1.51391716	1.66356964	3380.6067
## alpha[5,39]	1.37929503	1.47931086	1.57949196	1.81821964	3758.4317
## alpha[5,40]	1.59616895	1.68826514	1.78879184	2.00839580	2764.7504
## alpha[5,41]	1.27558562	1.33228966	1.37788682	1.49329533	1229.4295
## alpha[5,42]	1.68142748	1.74169300	1.79075062	1.88980395	1735.8053
## alpha[5,43]	1.25757459	1.32293806	1.39599927	1.58129521	3989.7581
## alpha[5,44]	0.89450560	0.92385180	0.95199030	1.02512963	2489.0880
## alpha[5,45]	0.89322209	0.94713088	0.99994282	1.12542380	3328.8140
## alpha[5,46]	1.93290297	2.03375572	2.12805473	2.35227787	3302.5478
## alpha[5,47]	0.41930189	0.45929910	0.50296197	0.60866610	2607.1493
## alpha[5,48]	1.22043367	1.27650891	1.33602036	1.47654812	3570.2785
## alpha[5,49]	2.42361001	2.47539953	2.52090778	2.63421017	2363.3839
## alpha[5,50]	1.25086525	1.28020896	1.31768511	1.42192873	1556.5785
## alpha[5,51]	1.94569320	2.02867314	2.10981985	2.33259488	2570.0095
## alpha[6,1]	1.30782900	1.41645576	1.52688922	1.77485926	3694.5020
## alpha[6,2]	1.73475731	1.90573055	2.08375566	2.52299530	2810.8304
## alpha[6,3]	1.50385213	1.60108913	1.71185710	2.00309301	2680.0149
## alpha[6,4]	1.50692968	1.60352939	1.71311496	1.99076934	2869.4976
## alpha[6,5]	0.95951705	1.01713159	1.07533905	1.24915464	2109.5218
## alpha[6,6]	1.35755297	1.42079468	1.48272403	1.65680208	808.5988
## alpha[6,7]	0.91891239	1.08360330	1.23374052	1.61231127	2882.5544
## alpha[6,8]	0.71228847	0.90062230	1.10564014	1.56580854	3307.6711
## alpha[6,9]	0.45521808	0.59530345	0.75431299	1.23836547	2160.3512
## alpha[6,10]	1.16836583	1.26271701	1.37054399	1.64944749	1987.9448
## alpha[6,11]	0.99932670	1.15035418	1.28476917	1.58904612	2064.9016
## alpha[6,12]	1.28741471	1.36174421	1.43729752	1.61805033	3217.9373
## alpha[6,13]	0.92393293	1.04797232	1.17420650	1.47377127	3015.5398
## alpha[6,14]	0.41348179	0.51446519	0.61057674	0.84321949	3516.3682
## alpha[6,15]	2.00261590	2.09146812	2.19367250	2.53685763	1448.8392
## alpha[6,16]	1.68052575	1.79920359	1.90653349	2.15981820	2684.7209
## alpha[6,17]	1.69869019	1.78159849	1.85751953	2.03754758	2921.5256
## alpha[6,18]	1.77025512	1.87575457	1.97041922	2.20089088	2815.9956
## alpha[6,19]	0.93450899	1.07681022	1.22098687	1.55631202	3398.4429
## alpha[6,20]	0.99991838	1.18683108	1.37667661	1.82598007	3082.2827
## alpha[6,21]	0.63194023	0.69363965	0.75084411	0.89441429	3422.9681
## alpha[6,22]	1.31690223	1.44828271	1.57660977	1.91823066	2651.3340
## alpha[6,23]	1.03636690	1.17703039	1.31918817	1.61918514	3457.8714
## alpha[6,24]	1.70874163	1.75063963	1.79085682	1.90227028	2790.0662
## alpha[6,25]	1.37075877	1.50915397	1.66874246	2.03732219	3176.5433
## alpha[6,26]	1.45245868	1.52794670	1.60508858	1.81597915	3163.1285
## alpha[6,27]	2.37259947	2.49827195	2.62576764	2.92612529	3296.2878
## alpha[6,28]	1.73658938	1.86493441	1.98395359	2.24984070	2675.9073
## alpha[6,29]	1.48491237	1.55784039	1.63984074	1.85658089	3437.5204
## alpha[6,30]	1.36672509	1.48097221	1.59331089	1.89029255	2469.2723
## alpha[6,31]	0.43248923	0.50538866	0.58268508	0.77751448	3179.3662
## alpha[6,32]	1.23258350	1.36203033	1.48513869	1.77074157	2840.9796
## alpha[6,33]	0.67101090	0.76518133	0.85965557	1.07667992	3178.9773
## alpha[6,34]	0.85082204	0.91492193	0.97968806	1.14676753	3321.3130
## alpha[6,35]	1.83905506	1.90442414	1.96167789	2.10939398	1952.1525
## alpha[6,36]	1.58985969	1.63294307	1.67965298	1.79710121	2957.6571
## alpha[6,37]	1.68326471	1.73365494	1.77860674	1.88270043	1390.7691
## alpha[6,38]	1.55830447	1.65648067	1.75812239	2.01579619	3496.3220

## alpha[6,39]	1.20948200	1.37331294	1.56037033	2.10732123	3229.8575
## alpha[6,40]	1.68031941	1.84639461	1.99159899	2.33281763	3172.8406
## alpha[6,41]	1.02927272	1.10955707	1.20254279	1.54452360	1591.3629
## alpha[6,42]	1.65934391	1.73977294	1.83129044	2.08964673	1848.7959
## alpha[6,43]	1.49272203	1.62051507	1.73126457	2.02594574	3906.7800
## alpha[6,44]	1.02486574	1.07526124	1.12388392	1.24083042	2654.2261
## alpha[6,45]	0.78797636	0.88198764	0.98097640	1.21804869	3357.2702
## alpha[6,46]	1.62531072	1.80421795	1.98467016	2.36817586	2688.4576
## alpha[6,47]	0.30533101	0.38979919	0.47116462	0.65638235	2813.1604
## alpha[6,48]	1.18220490	1.27409886	1.37394970	1.59145145	3014.8959
## alpha[6,49]	2.63617610	2.71292715	2.79360430	3.03573151	2614.6288
## alpha[6,50]	1.43235486	1.49162043	1.54449447	1.66340784	2067.5272
## alpha[6,51]	1.98461845	2.12705292	2.27351747	2.62941425	3204.0861
## alpha[7,1]	1.20592741	1.60922767	2.02071661	3.01425776	4230.5420
## alpha[7,2]	1.18153119	1.80182777	2.38514499	3.72750286	3469.0132
## alpha[7,3]	0.61115226	1.11291677	1.60011861	2.72060976	3632.9573
## alpha[7,4]	0.79658521	1.34288508	1.88126648	3.10729975	3853.9066
## alpha[7,5]	0.16732960	0.63506079	1.06617815	2.02916510	2801.3989
## alpha[7,6]	0.73429970	1.24352340	1.72190553	2.74573370	2704.9490
## alpha[7,7]	0.64344832	1.21136874	1.74481084	3.14679673	3164.7826
## alpha[7,8]	0.54034236	1.03391431	1.55706983	3.10418817	2262.0059
## alpha[7,9]	-1.02885648	-0.15101424	0.67461298	2.39604739	4189.0370
## alpha[7,10]	0.55676206	1.03918885	1.53189076	2.54302688	3823.3703
## alpha[7,11]	0.60236411	1.06960717	1.46100402	2.30360540	2164.0166
## alpha[7,12]	0.99575268	1.37257837	1.74154736	2.63320744	3061.7424
## alpha[7,13]	0.48404921	0.98975918	1.47860598	2.57131982	3353.2765
## alpha[7,14]	0.27889682	0.53901077	0.79728246	1.66979119	2786.1106
## alpha[7,15]	1.22623380	1.91849268	2.60833507	4.07315587	3570.0138
## alpha[7,16]	1.40101979	1.97341757	2.53242621	3.85880102	3949.4111
## alpha[7,17]	1.43720461	1.88606888	2.32952448	3.50265886	3723.6436
## alpha[7,18]	1.52543287	2.03587015	2.58431699	3.75844723	3717.4140
## alpha[7,19]	0.39155069	0.88762690	1.34077843	2.35235618	3277.1407
## alpha[7,20]	0.61640546	1.12638332	1.59636215	2.70139704	3586.2257
## alpha[7,21]	0.51909880	0.87589010	1.22988667	2.08378917	3888.0364
## alpha[7,22]	0.79000803	1.28758311	1.77110219	2.98852328	3279.3451
## alpha[7,23]	0.77923229	1.26075456	1.80817839	3.14021236	3496.9770
## alpha[7,24]	1.29759245	1.66860737	2.03281486	2.91176925	3591.0913
## alpha[7,25]	0.85716100	1.42746056	1.95418810	3.05123536	3096.7509
## alpha[7,26]	0.90600809	1.32443442	1.72058877	2.72303742	3151.5987
## alpha[7,27]	2.33733979	2.78975719	3.25466635	4.35795544	3011.5866
## alpha[7,28]	1.42456399	2.07729568	2.72101387	4.09764891	4364.4358
## alpha[7,29]	1.00641759	1.43285808	1.89607714	2.91254909	4854.5006
## alpha[7,30]	1.57720293	1.86057503	2.17609587	3.06045571	2726.3427
## alpha[7,31]	-0.12209480	0.20140354	0.53698600	1.26549222	3428.2220
## alpha[7,32]	0.89269263	1.36650386	1.79791038	2.87553155	3377.0771
## alpha[7,33]	0.42526038	0.86503439	1.30498330	2.36872513	3897.7306
## alpha[7,34]	0.59808449	0.86792317	1.10283566	1.71845477	3252.1861
## alpha[7,35]	1.31345693	1.85701386	2.34285216	3.49603696	3282.7593
## alpha[7,36]	1.63449107	1.93542454	2.24674009	3.06920109	2630.4467
## alpha[7,37]	1.16480319	1.63271607	2.07168978	3.07009529	3895.9518
## alpha[7,38]	1.30781285	1.86695984	2.41013707	3.64388449	4570.3365
## alpha[7,39]	0.56243415	1.35748818	2.12487625	3.86466114	4522.7069
## alpha[7,40]	1.37865534	2.05807620	2.74021639	4.56640955	2937.4148
## alpha[7,41]	0.45578870	1.03611241	1.57570665	2.85262968	4147.6319

## alpha[7,42]	1.10601620	1.81357229	2.50733045	3.99540696	5104.4427
## alpha[7,43]	1.41550333	1.90207567	2.40221307	3.70899894	3925.5953
## alpha[7,44]	0.93839092	1.19402242	1.45527443	2.09429420	2561.6916
## alpha[7,45]	0.45412637	0.82907850	1.16481957	2.12938206	3083.7068
## alpha[7,46]	1.06037888	1.64482182	2.18381899	3.44528554	3459.2815
## alpha[7,47]	0.09899330	0.33823610	0.54831207	1.04655325	2884.4968
## alpha[7,48]	0.79178820	1.28855326	1.82728597	3.17076278	3513.0240
## alpha[7,49]	2.39478198	2.89957781	3.38587472	4.64008925	4269.7194
## alpha[7,50]	1.37993081	1.77045203	2.19441217	3.24323380	3448.9321
## alpha[7,51]	1.66904601	2.28101985	2.90998651	4.38203383	3574.1693
## sigma_alpha[1]	0.36252555	0.48986627	0.66635216	1.22553606	1464.2805
## sigma_alpha[2]	0.51070960	0.68133106	0.91068001	1.52705315	1754.9769
## sigma_alpha[3]	0.49789226	0.62889860	0.82588805	1.38757104	2057.6026
## sigma_alpha[4]	0.60756791	0.75460082	0.96384137	1.59115436	2769.6102
## sigma_alpha[5]	0.51753877	0.66181225	0.86752142	1.49154261	2056.3963
## sigma_alpha[6]	0.58910844	0.73230182	0.92716123	1.48793542	2372.5045
## sigma_alpha[7]	0.46001650	0.63441965	0.85607773	1.47568471	1338.5023
## sigma_alpha[8]	0.27578146	0.43991680	0.68464580	1.56503126	533.0149
## sigma_alpha[9]	0.98212329	1.20121282	1.46440497	2.11732342	2346.7752
## sigma_alpha[10]	0.49868051	0.66303308	0.87805881	1.52254250	1814.9611
## sigma_alpha[11]	0.28233546	0.40813799	0.61674974	1.24622601	1047.4447
## sigma_alpha[12]	0.41056847	0.52652085	0.68814271	1.18464619	2354.7090
## sigma_alpha[13]	0.46521797	0.61789674	0.82916990	1.48741531	1838.4540
## sigma_alpha[14]	0.16292298	0.24920633	0.39585197	1.06298353	663.7923
## sigma_alpha[15]	0.81874281	1.01749324	1.27077557	1.91895421	2010.6400
## sigma_alpha[16]	0.64098356	0.81158501	1.03655577	1.62071062	2711.4211
## sigma_alpha[17]	0.51541041	0.65872492	0.85939403	1.42225696	2017.3806
## sigma_alpha[18]	0.56760892	0.72004996	0.94294815	1.55366167	2063.2605
## sigma_alpha[19]	0.37517211	0.50840800	0.68635455	1.22274061	1687.8373
## sigma_alpha[20]	0.31720787	0.43309542	0.61923634	1.20713646	1106.3716
## sigma_alpha[21]	0.41087755	0.53217163	0.69890973	1.22399843	2280.2811
## sigma_alpha[22]	0.45738345	0.61278243	0.81592028	1.40279578	1757.9157
## sigma_alpha[23]	0.43827422	0.59082354	0.81846710	1.46990445	1352.0298
## sigma_alpha[24]	0.48579615	0.61336840	0.78254360	1.27746369	2512.7827
## sigma_alpha[25]	0.44230446	0.60479196	0.84232076	1.52513698	1448.2597
## sigma_alpha[26]	0.45204155	0.58117928	0.75882173	1.31115255	2076.9057
## sigma_alpha[27]	0.41737149	0.54356694	0.71911333	1.25553586	1882.1544
## sigma_alpha[28]	0.72282052	0.89381355	1.11202217	1.70226975	3015.5247
## sigma_alpha[29]	0.47201048	0.60814457	0.80323692	1.40913945	2431.7839
## sigma_alpha[30]	0.18731771	0.27117363	0.40747077	0.89486707	917.0581
## sigma_alpha[31]	0.30447083	0.39844155	0.55183178	1.03260354	1481.5739
## sigma_alpha[32]	0.38584361	0.51174541	0.69191887	1.24965808	1317.3734
## sigma_alpha[33]	0.43827882	0.56636494	0.75480245	1.34533786	1662.0010
## sigma_alpha[34]	0.23672160	0.31140560	0.42345848	0.79484525	1274.7239
## sigma_alpha[35]	0.61825472	0.77370183	0.98524141	1.58647578	2334.8058
## sigma_alpha[36]	0.38747865	0.48267142	0.62019673	1.07172409	2393.4323
## sigma_alpha[37]	0.57673121	0.73160441	0.94423069	1.59954042	2223.1563
## sigma_alpha[38]	0.63054846	0.78545935	0.99019941	1.58818003	2699.3057
## sigma_alpha[39]	0.73096997	1.03392420	1.37228677	2.17657210	1040.8162
## sigma_alpha[40]	0.66121680	0.87174413	1.15176352	1.92040547	1612.1561
## sigma_alpha[41]	0.61983413	0.83096529	1.07693137	1.71239955	1155.6372
## sigma_alpha[42]	0.88035209	1.06090067	1.30279355	1.96803419	3205.0570
## sigma_alpha[43]	0.47699404	0.62011184	0.80397937	1.36946197	2027.3409
## sigma_alpha[44]	0.28380916	0.36234972	0.48209792	0.91481168	1581.1647

## sigma_alpha[45]	0.31574487	0.43025071	0.60258681	1.18019395	1289.4356
## sigma_alpha[46]	0.46686911	0.61965261	0.83060232	1.49265799	1720.7017
## sigma_alpha[47]	0.13236092	0.19566239	0.30824503	0.76884040	830.6247
## sigma_alpha[48]	0.53540206	0.71455441	0.95741273	1.62732572	1859.1101
## sigma_alpha[49]	0.61755163	0.78021513	0.96418184	1.54288729	2636.0596
## sigma_alpha[50]	0.46532533	0.60605923	0.79626571	1.34992375	2085.1942
## sigma_alpha[51]	0.63234781	0.78658059	1.00106068	1.65444851	2267.3853
## sigma_y[1]	0.05839389	0.07713698	0.10485751	0.20606996	1501.0767
## sigma_y[2]	0.07856269	0.10650301	0.14744044	0.31556362	985.1982
## sigma_y[3]	0.04452814	0.05853570	0.08097758	0.17295168	1220.6727
## sigma_y[4]	0.04281800	0.05773796	0.08214471	0.18412324	935.7250
## sigma_y[5]	0.01797285	0.02666309	0.04244687	0.10361268	761.1357
## sigma_y[6]	0.02186621	0.03072486	0.04475218	0.11112048	419.7010
## sigma_y[7]	0.08592253	0.11698171	0.16949626	0.36503194	971.0062
## sigma_y[8]	0.16231123	0.20816840	0.27525082	0.51223401	1803.8482
## sigma_y[9]	0.05014358	0.07171211	0.11195541	0.29423410	713.2605
## sigma_y[10]	0.03469510	0.04958082	0.07281687	0.16898367	784.8314
## sigma_y[11]	0.07349651	0.09912875	0.13195039	0.25409812	1611.7860
## sigma_y[12]	0.03120924	0.04131730	0.05709224	0.12546948	1035.8659
## sigma_y[13]	0.06370845	0.08493583	0.12112692	0.25842839	921.9396
## sigma_y[14]	0.07693725	0.09981553	0.13087851	0.23802092	1710.0416
## sigma_y[15]	0.03174549	0.04509799	0.07328959	0.22152973	555.2035
## sigma_y[16]	0.04494571	0.06075478	0.08587566	0.18477172	1149.6819
## sigma_y[17]	0.03186989	0.04401423	0.06349479	0.13541664	1115.6844
## sigma_y[18]	0.04260307	0.05857730	0.08326405	0.18638244	1161.8899
## sigma_y[19]	0.08611138	0.10959819	0.14682053	0.26634827	1820.2620
## sigma_y[20]	0.14781068	0.18714209	0.24113845	0.42512558	2472.5015
## sigma_y[21]	0.02249808	0.03143221	0.04642348	0.11203090	969.0807
## sigma_y[22]	0.06455030	0.08722397	0.12050296	0.23724488	1203.8748
## sigma_y[23]	0.07515164	0.09975011	0.13447064	0.27298923	1669.1690
## sigma_y[24]	0.01301113	0.01783651	0.02552573	0.05721155	936.7113
## sigma_y[25]	0.06982646	0.09708592	0.13455835	0.27423918	1342.6520
## sigma_y[26]	0.03234650	0.04336651	0.05960680	0.13274580	1000.3944
## sigma_y[27]	0.07591826	0.09723183	0.12874747	0.24445737	893.0978
## sigma_y[28]	0.05596367	0.07301921	0.09988133	0.22397587	998.4283
## sigma_y[29]	0.03180584	0.04472395	0.06295621	0.14012121	1015.5341
## sigma_y[30]	0.08771529	0.11218629	0.14400233	0.25768506	1705.2051
## sigma_y[31]	0.03778272	0.04911206	0.06571666	0.12589537	1510.7160
## sigma_y[32]	0.07351211	0.09434980	0.12693190	0.24531125	1239.9750
## sigma_y[33]	0.04708238	0.06202981	0.08474738	0.17991268	1404.1138
## sigma_y[34]	0.03146397	0.04115449	0.05535328	0.11056381	1603.2104
## sigma_y[35]	0.01870249	0.02732489	0.04169946	0.10200732	636.1708
## sigma_y[36]	0.01822774	0.02393385	0.03367032	0.07152200	969.1167
## sigma_y[37]	0.01087094	0.01617199	0.02704463	0.07960097	513.7710
## sigma_y[38]	0.04570493	0.06003881	0.08222376	0.17557036	1148.1626
## sigma_y[39]	0.07904274	0.12830190	0.19625171	0.42644649	803.7139
## sigma_y[40]	0.07037996	0.10135182	0.14418326	0.29055181	1222.0569
## sigma_y[41]	0.02654259	0.04175787	0.07447784	0.19533055	521.1556
## sigma_y[42]	0.02857613	0.04037326	0.05974070	0.14391610	568.0590
## sigma_y[43]	0.06085142	0.07814333	0.10694971	0.20915883	1585.5293
## sigma_y[44]	0.02103993	0.02771110	0.03816678	0.08048362	1253.3328
## sigma_y[45]	0.05087250	0.06650241	0.09059067	0.18122565	1182.0492
## sigma_y[46]	0.10235322	0.13150594	0.17440026	0.33254016	1898.7489
## sigma_y[47]	0.05275282	0.06868852	0.09150944	0.17118175	1652.3561

## sigma_y[48]	0.04213309	0.06105097	0.08854263	0.19205566	1177.1243
## sigma_y[49]	0.03003653	0.04062848	0.05794570	0.14980494	673.6576
## sigma_y[50]	0.01835817	0.02661955	0.04044811	0.09141884	812.2812
## sigma_y[51]	0.06946155	0.08973584	0.12388009	0.27284192	562.5541
## mu[1,1]	0.91730313	0.97065639	1.01410406	1.11366300	2211.8113
## mu[1,2]	1.41049161	1.48516594	1.55089537	1.67849654	2371.6502
## mu[1,3]	1.51287948	1.55076827	1.58549897	1.67500329	3424.4902
## mu[1,4]	1.66298337	1.70178724	1.73603541	1.81937972	2066.5207
## mu[1,5]	1.25408180	1.27817795	1.29538501	1.33366450	1503.4929
## mu[1,6]	1.51056193	1.53384908	1.55242181	1.59790516	1732.6622
## mu[1,7]	0.94804759	1.04254459	1.11267866	1.24670535	1272.2528
## mu[1,8]	0.57587559	0.69960914	0.80573891	1.00954886	1775.9970
## mu[1,9]	1.89661468	1.95855241	2.00011298	2.09279768	1156.0449
## mu[1,10]	1.25604087	1.28553182	1.31396480	1.38766572	2031.0334
## mu[1,11]	0.72541598	0.78115185	0.83282727	0.94796814	2627.8868
## mu[1,12]	1.18283602	1.21107122	1.23548777	1.29192356	2527.5173
## mu[1,13]	1.03912113	1.10450805	1.15710139	1.25747183	2181.3149
## mu[1,14]	0.35253935	0.41389959	0.47259578	0.58491477	1642.2226
## mu[1,15]	1.67339819	1.71525531	1.74408257	1.80540659	869.7382
## mu[1,16]	1.80687582	1.85109844	1.88847887	1.97457000	2742.8374
## mu[1,17]	1.53255174	1.56550815	1.59224456	1.64854774	2518.8886
## mu[1,18]	1.60464542	1.64935803	1.68476225	1.76477294	2975.7244
## mu[1,19]	0.98719748	1.05239141	1.11452871	1.24181930	3278.3359
## mu[1,20]	0.76764985	0.85335504	0.94129229	1.13060544	3563.1727
## mu[1,21]	0.71826212	0.73738621	0.75654189	0.81354041	2751.1103
## mu[1,22]	1.24219292	1.30718352	1.35809240	1.46430975	2353.5400
## mu[1,23]	1.11655848	1.18147910	1.23707935	1.35863846	2742.8349
## mu[1,24]	1.47894533	1.49077049	1.50159520	1.53305382	3628.0349
## mu[1,25]	1.07442316	1.14940946	1.20864474	1.30731766	2139.5720
## mu[1,26]	1.35892407	1.39072107	1.41639822	1.47129410	2615.3345
## mu[1,27]	1.37109368	1.42896917	1.47934696	1.59299389	2983.0711
## mu[1,28]	1.92595529	1.97607610	2.01820299	2.12069617	1892.0048
## mu[1,29]	1.40000781	1.43309341	1.46019994	1.52289471	2880.1020
## mu[1,30]	0.46226967	0.52085506	0.57901202	0.70028900	2890.3606
## mu[1,31]	0.75972552	0.78720831	0.81445435	0.88344044	3305.0432
## mu[1,32]	1.10479820	1.16325586	1.21564733	1.33028144	3130.8851
## mu[1,33]	0.99398422	1.03825329	1.07390558	1.15634056	2853.1902
## mu[1,34]	0.69879875	0.72446223	0.74821749	0.79927691	3450.3850
## mu[1,35]	1.66331955	1.68587671	1.70156457	1.74198015	1643.9809
## mu[1,36]	1.21683690	1.23152122	1.24586350	1.28111756	3938.1759
## mu[1,37]	1.52074771	1.53315222	1.54287914	1.57089481	1975.1619
## mu[1,38]	1.64254372	1.68438894	1.71999429	1.80113074	2421.8336
## mu[1,39]	1.49264008	1.63813679	1.73335788	1.84792072	1114.5050
## mu[1,40]	1.71021244	1.79253862	1.85952733	1.96703959	2283.0368
## mu[1,41]	1.07569845	1.12485657	1.15123787	1.20112929	802.3285
## mu[1,42]	1.94608441	1.97237467	1.99900313	2.07477376	1893.5280
## mu[1,43]	1.31563191	1.36138672	1.40286605	1.50704996	3404.6216
## mu[1,44]	0.83169185	0.84918610	0.86501529	0.90495890	2601.4530
## mu[1,45]	0.83492142	0.88177365	0.92148868	1.00170009	3242.4017
## mu[1,46]	1.34705151	1.42507496	1.49718153	1.64944875	3369.3533
## mu[1,47]	0.30281041	0.34175028	0.37772228	0.45099628	2612.1842
## mu[1,48]	1.28035275	1.33117444	1.37161964	1.44774391	2349.3236
## mu[1,49]	2.02291648	2.04842831	2.07384080	2.14515190	1954.7887
## mu[1,50]	1.19349820	1.21508165	1.23127170	1.26897782	2086.3730

## mu[1,51]	1.86752754	1.93002056	1.98353126	2.10066838	1221.7196
## mu[2,1]	0.95825871	0.99212714	1.02378086	1.09788028	2662.5649
## mu[2,2]	1.52693407	1.57252534	1.61704205	1.72386383	3130.3980
## mu[2,3]	1.67925018	1.70643582	1.73235813	1.80712197	3509.7208
## mu[2,4]	1.69048878	1.71727791	1.74134604	1.81218565	2544.7301
## mu[2,5]	1.24238526	1.25539508	1.27198383	1.32246314	3181.7939
## mu[2,6]	1.46753812	1.48348054	1.49836538	1.54386795	2829.8063
## mu[2,7]	0.92760744	0.98144536	1.02710763	1.13976590	1778.9332
## mu[2,8]	0.63859142	0.74511779	0.83046345	0.99278219	1410.2452
## mu[2,9]	1.68113034	1.71518424	1.74951220	1.85187060	3297.7493
## mu[2,10]	1.33266737	1.36038307	1.38441052	1.43231782	1809.5689
## mu[2,11]	0.83094423	0.87270335	0.91140421	0.99707849	2925.9591
## mu[2,12]	1.22323196	1.24334557	1.26150342	1.30451018	3058.1923
## mu[2,13]	1.02571198	1.06362545	1.09900447	1.19202098	3180.3939
## mu[2,14]	0.38069487	0.42257781	0.46219852	0.54742344	3299.1199
## mu[2,15]	1.57660188	1.59818736	1.62308610	1.70096129	1784.3094
## mu[2,16]	1.81543524	1.84467255	1.87427746	1.95495197	3485.4662
## mu[2,17]	1.58222685	1.60204490	1.62484696	1.68346293	3302.8327
## mu[2,18]	1.64293562	1.66964160	1.69995768	1.77724069	3162.4978
## mu[2,19]	1.07295797	1.11529654	1.16102603	1.26432642	3794.4972
## mu[2,20]	0.91961110	0.98753780	1.05653257	1.20893666	3585.3422
## mu[2,21]	0.72445745	0.74358566	0.75870043	0.79181005	2024.8698
## mu[2,22]	1.30704009	1.34401883	1.38021553	1.48042417	3582.2552
## mu[2,23]	1.15840563	1.20088943	1.24291220	1.34050677	3326.3464
## mu[2,24]	1.52805800	1.53690727	1.54571871	1.57195066	2874.7009
## mu[2,25]	1.13636671	1.17532878	1.21419229	1.30709534	3369.7205
## mu[2,26]	1.42926790	1.44894948	1.46780740	1.52507445	3570.9182
## mu[2,27]	1.55139589	1.59510013	1.63331339	1.72331632	2078.3537
## mu[2,28]	1.90320585	1.93800921	1.97275358	2.06036225	2179.7435
## mu[2,29]	1.46340169	1.48447499	1.50726102	1.57503131	3710.8477
## mu[2,30]	0.54913458	0.59223135	0.63391966	0.72670146	3317.6396
## mu[2,31]	0.84269009	0.86383551	0.88576010	0.94080098	3385.3075
## mu[2,32]	1.18944860	1.22859832	1.26816957	1.36548548	2863.6803
## mu[2,33]	0.95681823	0.98392521	1.01090824	1.07984165	3341.6663
## mu[2,34]	0.76119348	0.77792135	0.79484193	0.83550892	3887.9225
## mu[2,35]	1.66799582	1.68108520	1.69717880	1.75157105	2475.6155
## mu[2,36]	1.27983723	1.29126059	1.30257476	1.33152056	3898.6567
## mu[2,37]	1.62340797	1.63137406	1.64272587	1.68979859	1851.4174
## mu[2,38]	1.61873456	1.64690320	1.67429763	1.74019056	3354.4945
## mu[2,39]	1.39422867	1.44552610	1.51071490	1.67820471	3781.2978
## mu[2,40]	1.72654681	1.76985382	1.81939256	1.94059908	3139.2761
## mu[2,41]	0.98550660	1.00451255	1.03090615	1.12420729	2965.6920
## mu[2,42]	1.91141958	1.93650856	1.95645092	2.00639667	2376.1313
## mu[2,43]	1.41172799	1.44540779	1.47828784	1.55681040	3294.4505
## mu[2,44]	0.86900046	0.88221406	0.89449038	0.92665754	3034.3250
## mu[2,45]	0.87510237	0.90389154	0.93239413	0.99657146	4051.2964
## mu[2,46]	1.51498700	1.56815752	1.62291075	1.73689766	3360.3215
## mu[2,47]	0.33463090	0.36027973	0.38369261	0.44078790	3642.7218
## mu[2,48]	1.25372682	1.28156705	1.31492362	1.40139690	3635.5285
## mu[2,49]	2.16239709	2.18331869	2.20312231	2.25408490	2014.0919
## mu[2,50]	1.19954003	1.21176532	1.22796642	1.27867487	2378.9639
## mu[2,51]	1.94834817	1.98806497	2.02638656	2.12689619	907.2430
## mu[3,1]	0.96758132	0.99612310	1.02680652	1.10731555	3887.5312
## mu[3,2]	1.61035749	1.65083826	1.69484733	1.80768984	3819.3838

## mu[3,3]	1.81708217	1.84090156	1.86514162	1.93715385	3636.9115
## mu[3,4]	1.66566471	1.68770437	1.71399644	1.79115951	3383.0941
## mu[3,5]	1.25913015	1.26952404	1.28486027	1.34036756	2293.9397
## mu[3,6]	1.39547817	1.40849602	1.42362631	1.47538128	2775.6177
## mu[3,7]	0.85763124	0.89973419	0.94566454	1.06434622	3178.6861
## mu[3,8]	0.65015230	0.72847105	0.79467934	0.93308913	1969.2560
## mu[3,9]	1.44298176	1.47233061	1.51279157	1.65381385	2739.9996
## mu[3,10]	1.33263255	1.35269309	1.37177644	1.43095205	4134.2651
## mu[3,11]	0.90391796	0.93729457	0.97300629	1.05794544	3910.4624
## mu[3,12]	1.22959713	1.24559997	1.26275427	1.31404713	3699.0355
## mu[3,13]	0.98963025	1.02143467	1.05991096	1.15672334	3112.7725
## mu[3,14]	0.39921430	0.43488560	0.46854020	0.54553977	3604.1119
## mu[3,15]	1.54096775	1.56157215	1.59046734	1.69543179	1331.5538
## mu[3,16]	1.79434759	1.81916695	1.84670479	1.92880172	3465.7272
## mu[3,17]	1.62937856	1.64702639	1.66725240	1.72314954	3629.2011
## mu[3,18]	1.67340947	1.69554273	1.72257097	1.79773214	3435.4389
## mu[3,19]	1.12069856	1.15957890	1.20205496	1.30129206	4187.1485
## mu[3,20]	1.04892953	1.11267342	1.17154151	1.30525675	3633.6782
## mu[3,21]	0.64276761	0.65789614	0.67025488	0.70268647	3181.7704
## mu[3,22]	1.34809997	1.38234334	1.41974029	1.51985534	4034.5041
## mu[3,23]	1.17731485	1.21393370	1.25191354	1.34515794	3851.3457
## mu[3,24]	1.53686383	1.54481577	1.55290969	1.57967858	3241.3217
## mu[3,25]	1.17801423	1.21422031	1.25855027	1.35385925	3513.9304
## mu[3,26]	1.48277425	1.49947229	1.51925088	1.57430958	3578.4272
## mu[3,27]	1.68896330	1.72399042	1.75944309	1.84952474	1734.8745
## mu[3,28]	1.79909677	1.82750161	1.86008369	1.95194573	2856.9519
## mu[3,29]	1.53195471	1.54974959	1.57104697	1.63178447	3804.0632
## mu[3,30]	0.62352838	0.66192245	0.69733054	0.78044635	3384.2529
## mu[3,31]	0.90969570	0.92803618	0.94615508	0.99596341	3563.4970
## mu[3,32]	1.24674681	1.28345532	1.31825147	1.40713833	2671.7454
## mu[3,33]	0.89373335	0.91691248	0.94208735	1.01048144	3126.0045
## mu[3,34]	0.80519612	0.82112148	0.83767478	0.88305504	4057.4608
## mu[3,35]	1.70811045	1.71915279	1.73326889	1.78185025	2848.0246
## mu[3,36]	1.29922915	1.30956193	1.31957923	1.34815398	4472.0276
## mu[3,37]	1.74924777	1.75575535	1.76403021	1.79813455	3088.7982
## mu[3,38]	1.53909389	1.56234559	1.58788024	1.65788850	4222.4258
## mu[3,39]	1.29917201	1.35268998	1.42885254	1.61395096	2117.0555
## mu[3,40]	1.73904723	1.77706677	1.82255447	1.94279281	3547.3514
## mu[3,41]	0.96226483	0.97958380	1.01077525	1.12554150	1020.6424
## mu[3,42]	1.73015509	1.74835811	1.76516900	1.82413007	2634.1392
## mu[3,43]	1.42764023	1.45864640	1.48807080	1.55634153	3930.1228
## mu[3,44]	0.87340460	0.88498332	0.89656413	0.92829092	3989.1823
## mu[3,45]	0.89571912	0.92087025	0.94792159	1.01758983	3639.7551
## mu[3,46]	1.63349253	1.68298745	1.73174298	1.84460731	3725.1253
## mu[3,47]	0.35400644	0.37761703	0.40094775	0.45837824	3858.5642
## mu[3,48]	1.24786837	1.27373821	1.30374448	1.39568011	2945.3838
## mu[3,49]	2.20403948	2.22086904	2.23810923	2.29196906	3126.1604
## mu[3,50]	1.22995073	1.24072447	1.25451983	1.29503831	2792.5094
## mu[3,51]	1.96502777	1.99951444	2.03663316	2.13263386	885.9003
## mu[4,1]	0.98150605	1.01387551	1.04879588	1.13994262	3766.4348
## mu[4,2]	1.69937520	1.74081377	1.78802012	1.90659596	3646.9717
## mu[4,3]	1.92282191	1.94795402	1.97374649	2.04336966	3570.6923
## mu[4,4]	1.63833583	1.66211085	1.68967519	1.78692312	2940.6935
## mu[4,5]	1.28490098	1.29700932	1.30886718	1.35402711	2743.8859

## mu[4,6]	1.33585559	1.34998620	1.36554629	1.42089710	2348.3819
## mu[4,7]	0.79400158	0.84114530	0.89704662	1.04783178	2803.0400
## mu[4,8]	0.62144352	0.69114762	0.76129743	0.93189473	3135.2028
## mu[4,9]	1.26806819	1.30046636	1.34062436	1.50444607	1499.3387
## mu[4,10]	1.30925802	1.33092861	1.35964798	1.43872943	2382.7871
## mu[4,11]	0.96323584	1.00208787	1.04163451	1.13122329	3628.9102
## mu[4,12]	1.22982566	1.24792403	1.26790780	1.32762319	3020.8137
## mu[4,13]	0.96680762	1.00021186	1.03782827	1.15088560	2879.2154
## mu[4,14]	0.41524770	0.44926219	0.48202916	0.55910196	4112.9588
## mu[4,15]	1.59728275	1.61829824	1.64277650	1.75957046	1402.4502
## mu[4,16]	1.75388857	1.78057544	1.80683004	1.89218059	3222.3440
## mu[4,17]	1.66532894	1.68488641	1.70357454	1.75507233	4021.8556
## mu[4,18]	1.68878356	1.71474665	1.74098199	1.81702724	3157.3107
## mu[4,19]	1.15379812	1.19566108	1.23870189	1.34813887	4411.0933
## mu[4,20]	1.14190565	1.21012123	1.27360686	1.41003840	3835.5172
## mu[4,21]	0.53134491	0.54438695	0.55968709	0.61565966	3080.9692
## mu[4,22]	1.39487254	1.43005888	1.46615455	1.56919622	4167.2960
## mu[4,23]	1.17057186	1.21116615	1.24698905	1.34283208	4266.0077
## mu[4,24]	1.54672240	1.55453267	1.56336886	1.59284265	3339.3138
## mu[4,25]	1.24241525	1.28163743	1.32362812	1.43146878	3644.8907
## mu[4,26]	1.53156414	1.54949073	1.56940374	1.62559547	3849.1865
## mu[4,27]	1.80236769	1.84101584	1.88007394	1.98851301	1706.0232
## mu[4,28]	1.67461557	1.70433877	1.73962369	1.84153543	2904.2421
## mu[4,29]	1.59097300	1.61031992	1.62907956	1.68196995	3176.4730
## mu[4,30]	0.70314911	0.74134074	0.78054933	0.87422719	2967.7152
## mu[4,31]	0.93669093	0.95741572	0.97673826	1.02347828	3759.6651
## mu[4,32]	1.28553987	1.32203325	1.35743071	1.45203447	3105.1733
## mu[4,33]	0.82463746	0.84976139	0.87608120	0.95046452	3436.7765
## mu[4,34]	0.84267617	0.85914739	0.87659084	0.92613780	4146.1230
## mu[4,35]	1.75627515	1.76952834	1.78071942	1.81908199	3270.4082
## mu[4,36]	1.30283590	1.31330021	1.32439984	1.35526858	3703.8921
## mu[4,37]	1.83210492	1.84236238	1.84945936	1.87065112	2050.1128
## mu[4,38]	1.45241120	1.47896960	1.50539492	1.59055198	3520.6729
## mu[4,39]	1.28891777	1.33456083	1.39426768	1.59335518	2555.9069
## mu[4,40]	1.74574788	1.78954989	1.82888502	1.94332222	3909.3719
## mu[4,41]	1.01153294	1.02835236	1.04910083	1.16306089	1695.0045
## mu[4,42]	1.53949863	1.55777530	1.58046709	1.66661586	1072.5359
## mu[4,43]	1.39871310	1.42909479	1.46162811	1.54212512	4061.1973
## mu[4,44]	0.86641027	0.87883063	0.89103031	0.92814022	3741.7813
## mu[4,45]	0.90684638	0.93273989	0.95988646	1.03578307	3209.8980
## mu[4,46]	1.72965734	1.77734911	1.82892904	1.95614500	4216.5736
## mu[4,47]	0.37396601	0.39751119	0.42270505	0.47842442	4200.5918
## mu[4,48]	1.26080826	1.28541177	1.30921373	1.39538101	3599.2746
## mu[4,49]	2.21330786	2.23013515	2.24986209	2.31953058	2317.0525
## mu[4,50]	1.26456919	1.27754045	1.28840022	1.32059888	3635.8436
## mu[4,51]	1.95452414	1.99292335	2.03277119	2.13918827	1073.4920
## mu[5,1]	1.03910930	1.06863712	1.10114583	1.19236157	3668.6810
## mu[5,2]	1.81586061	1.85532501	1.89496562	2.00154476	4074.9736
## mu[5,3]	1.99507949	2.02061337	2.04324058	2.09884145	3016.3569
## mu[5,4]	1.65914082	1.68145194	1.70595830	1.78863275	2944.1157
## mu[5,5]	1.29334654	1.30562625	1.31624016	1.35350806	2678.3434
## mu[5,6]	1.33093460	1.34392384	1.35707476	1.40247548	2498.5335
## mu[5,7]	0.79609610	0.84058697	0.89229358	1.04710024	2276.6811
## mu[5,8]	0.61084896	0.68674288	0.76147778	0.93729607	2936.4760

## mu[5,9]	1.22188702	1.25232083	1.28224488	1.39595765	2137.4635
## mu[5,10]	1.34742439	1.36611877	1.39019673	1.46679850	2739.5604
## mu[5,11]	1.04913645	1.08181438	1.11734044	1.20170372	4165.2130
## mu[5,12]	1.25896523	1.27513979	1.29218852	1.34707891	2743.8924
## mu[5,13]	0.97851274	1.00959043	1.04364873	1.14825127	3032.0011
## mu[5,14]	0.43198027	0.46376917	0.49593604	0.57390589	3610.5347
## mu[5,15]	1.74871649	1.76862030	1.78699459	1.86541125	2680.9010
## mu[5,16]	1.70962606	1.73378703	1.75894820	1.83657232	3381.1304
## mu[5,17]	1.67993799	1.69966015	1.71668214	1.76404800	3581.8769
## mu[5,18]	1.69002613	1.71542105	1.73936655	1.80975496	2572.0694
## mu[5,19]	1.19172285	1.23130245	1.27031867	1.37035429	4601.4642
## mu[5,20]	1.19993778	1.26507256	1.32767356	1.46350886	3902.6090
## mu[5,21]	0.46062381	0.47324577	0.48933694	0.55143337	2136.8091
## mu[5,22]	1.45461561	1.48860876	1.52267322	1.60587818	4123.7337
## mu[5,23]	1.13923492	1.17570411	1.21324714	1.32248872	4533.3470
## mu[5,24]	1.59705204	1.60459949	1.61256972	1.63710536	3549.4195
## mu[5,25]	1.34750533	1.38222078	1.41676075	1.51301632	4131.3570
## mu[5,26]	1.58458799	1.60072059	1.61809976	1.66974249	4259.9038
## mu[5,27]	1.92795987	1.96493265	2.00310953	2.12396551	1887.9336
## mu[5,28]	1.59931715	1.62800819	1.65972492	1.76105367	2846.5324
## mu[5,29]	1.62536898	1.64413859	1.66131184	1.70805687	3323.5289
## mu[5,30]	0.80726893	0.84624241	0.88683057	0.98142937	2733.9116
## mu[5,31]	0.91129923	0.93114567	0.95051320	0.99566547	3802.4681
## mu[5,32]	1.30914024	1.34417850	1.37925267	1.47787924	3727.3928
## mu[5,33]	0.76818003	0.79272212	0.81870833	0.88985897	3280.6057
## mu[5,34]	0.88190270	0.89710411	0.91269042	0.95412026	4445.0844
## mu[5,35]	1.78522531	1.79811038	1.80900001	1.84249009	2960.0449
## mu[5,36]	1.32066712	1.33045395	1.34023163	1.37044858	4063.9870
## mu[5,37]	1.82002332	1.82830240	1.83490719	1.85467128	2474.2340
## mu[5,38]	1.41378534	1.43793174	1.46287645	1.54828745	3485.8995
## mu[5,39]	1.32022142	1.36796033	1.41487917	1.59355278	3416.3639
## mu[5,40]	1.72993737	1.77208138	1.81172490	1.92007551	4127.2983
## mu[5,41]	1.09933493	1.11931908	1.13496891	1.20924041	3269.3719
## mu[5,42]	1.49810077	1.51394789	1.53424987	1.61157976	1268.7617
## mu[5,43]	1.36130729	1.39113917	1.42352598	1.51761996	3761.9736
## mu[5,44]	0.87371342	0.88456955	0.89633122	0.93226272	3996.7697
## mu[5,45]	0.91497110	0.94077519	0.96496434	1.03384570	3031.7026
## mu[5,46]	1.82271700	1.87080554	1.91834076	2.03604860	4384.0493
## mu[5,47]	0.39673075	0.42004486	0.44385914	0.49629990	4265.3644
## mu[5,48]	1.26515326	1.29156522	1.31336429	1.38861278	4170.7493
## mu[5,49]	2.26564539	2.28255078	2.30119336	2.36444478	2353.1328
## mu[5,50]	1.28279476	1.29511065	1.30558272	1.33388253	3415.0399
## mu[5,51]	1.95852234	1.99554800	2.03417663	2.14054099	1204.9553
## mu[6,1]	1.12424958	1.15589093	1.18798570	1.27086779	4106.2065
## mu[6,2]	1.91887504	1.96542371	2.00825210	2.10578873	3408.8776
## mu[6,3]	2.00961337	2.03792254	2.06159727	2.12585196	2739.7375
## mu[6,4]	1.69930023	1.72529304	1.75041936	1.82035221	2968.9027
## mu[6,5]	1.27188844	1.28386200	1.29584191	1.33655145	2765.9164
## mu[6,6]	1.36328063	1.37761673	1.39139215	1.43059645	1469.7530
## mu[6,7]	0.84486496	0.88941826	0.93585455	1.07663490	2521.9128
## mu[6,8]	0.64085501	0.71252889	0.78743911	0.97318509	3435.2962
## mu[6,9]	1.22042448	1.25849461	1.28971004	1.37099139	2677.9767
## mu[6,10]	1.40909067	1.43473331	1.45541636	1.51079384	3062.9453
## mu[6,11]	1.12153297	1.16334045	1.20096787	1.28085336	3098.6593

## mu[6,12]	1.30121833	1.31939339	1.33737299	1.38963073	2760.8948
## mu[6,13]	1.00425958	1.03980599	1.07359300	1.16264241	2958.0355
## mu[6,14]	0.44482818	0.47777927	0.51020461	0.59010766	3377.3481
## mu[6,15]	1.92887617	1.95301688	1.97298826	2.03113514	1621.3423
## mu[6,16]	1.66995065	1.69708927	1.72491427	1.80682682	3451.3798
## mu[6,17]	1.68070794	1.69939337	1.71906186	1.78123033	3427.9863
## mu[6,18]	1.68570252	1.70981534	1.73671402	1.81465356	2275.0448
## mu[6,19]	1.20955370	1.25338100	1.29503796	1.39099102	4097.4397
## mu[6,20]	1.21763737	1.27920932	1.34041128	1.48490795	3629.0718
## mu[6,21]	0.44897631	0.46201684	0.47700007	0.52771345	2741.2113
## mu[6,22]	1.50422779	1.54119619	1.57633389	1.65742353	3606.4720
## mu[6,23]	1.09341384	1.13123069	1.17279916	1.28972116	3312.8944
## mu[6,24]	1.67130777	1.68017514	1.68805680	1.71014313	3649.6794
## mu[6,25]	1.44541455	1.48694138	1.52552649	1.61543193	3784.4213
## mu[6,26]	1.62124257	1.64119433	1.65889811	1.70728710	4314.9286
## mu[6,27]	2.06112848	2.09905370	2.13865367	2.24518871	2344.9015
## mu[6,28]	1.58133834	1.61433749	1.64550432	1.74856670	2701.0655
## mu[6,29]	1.62956926	1.64833326	1.66675069	1.72197879	3763.1983
## mu[6,30]	0.93874935	0.97654789	1.01504791	1.10784721	2910.8907
## mu[6,31]	0.83665181	0.85670208	0.87654099	0.92802456	3770.4157
## mu[6,32]	1.31702506	1.35378890	1.39091682	1.48881552	3879.0496
## mu[6,33]	0.72750627	0.75360162	0.77967188	0.85321108	3463.4180
## mu[6,34]	0.91184280	0.92930721	0.94595357	0.98614367	4506.1077
## mu[6,35]	1.79632021	1.80823914	1.82101478	1.86444661	2975.2021
## mu[6,36]	1.35919386	1.37004419	1.38053045	1.41409604	4002.5900
## mu[6,37]	1.74080056	1.74814930	1.75725019	1.79376099	1697.6156
## mu[6,38]	1.42160231	1.44739213	1.47404274	1.55179181	3740.0519
## mu[6,39]	1.36220529	1.41637611	1.46110483	1.60900317	3685.4208
## mu[6,40]	1.70474807	1.74160752	1.78668548	1.91189769	4230.2339
## mu[6,41]	1.18501285	1.20759190	1.22514401	1.27773453	2093.4916
## mu[6,42]	1.57608212	1.59560859	1.61300784	1.66690615	3522.9949
## mu[6,43]	1.34045369	1.37361668	1.40919276	1.51076726	3820.3493
## mu[6,44]	0.89690453	0.90950397	0.92188347	0.95630591	3256.2168
## mu[6,45]	0.91376532	0.94109750	0.96754057	1.03597866	3311.0889
## mu[6,46]	1.88706219	1.94031187	1.99223499	2.10174679	4052.1172
## mu[6,47]	0.41118513	0.43642268	0.46220205	0.51878917	3563.8468
## mu[6,48]	1.26142365	1.28626287	1.31013037	1.38555277	4769.2483
## mu[6,49]	2.36160683	2.38000701	2.39893120	2.45602087	2988.7108
## mu[6,50]	1.29166571	1.30380339	1.31631519	1.35901985	2952.4262
## mu[6,51]	1.97472294	2.01330409	2.05522040	2.17320872	1620.9931
## mu[7,1]	1.21502524	1.24780476	1.28089837	1.35280357	3890.2149
## mu[7,2]	1.97168631	2.02029988	2.06240636	2.17349822	3197.3196
## mu[7,3]	1.95223719	1.97849754	2.00335659	2.06714116	3502.6383
## mu[7,4]	1.71330644	1.74025476	1.76594709	1.83172722	2992.0625
## mu[7,5]	1.21728337	1.22990654	1.24230445	1.28946272	2785.9822
## mu[7,6]	1.39653676	1.41203006	1.42610463	1.46565278	609.5723
## mu[7,7]	0.90308377	0.95267007	1.00133256	1.13923114	2830.8421
## mu[7,8]	0.68528172	0.76357842	0.83979934	1.04036761	3908.3414
## mu[7,9]	1.15041304	1.18911178	1.21928840	1.30312530	2446.5888
## mu[7,10]	1.43018546	1.45721999	1.47839636	1.52676070	2859.2447
## mu[7,11]	1.16189565	1.20515050	1.24544393	1.34205867	3084.2953
## mu[7,12]	1.33530460	1.35384283	1.37177312	1.42527191	3211.9313
## mu[7,13]	1.02423333	1.06177221	1.09747088	1.19141291	2959.9422
## mu[7,14]	0.45264744	0.48999862	0.52640022	0.61771170	2997.0107

## mu[7,15]	2.06112823	2.08514510	2.10616460	2.17273537	1629.6706
## mu[7,16]	1.66429704	1.69055896	1.71977156	1.80130425	3260.3256
## mu[7,17]	1.68820742	1.70727237	1.72762214	1.79232959	3591.1115
## mu[7,18]	1.70298870	1.72694058	1.75457379	1.83573947	2435.3891
## mu[7,19]	1.19462545	1.23858026	1.28156171	1.39257358	3704.9205
## mu[7,20]	1.20230027	1.26557165	1.33563947	1.50006950	3325.0272
## mu[7,21]	0.48518826	0.49998207	0.51282875	0.55257814	3917.0857
## mu[7,22]	1.51931200	1.55572196	1.59260620	1.68727041	3506.0382
## mu[7,23]	1.06999624	1.11134251	1.15428976	1.28096814	3083.8134
## mu[7,24]	1.72935843	1.73833548	1.74684487	1.76931626	3824.1000
## mu[7,25]	1.50865518	1.55289645	1.59191676	1.69046567	3933.0811
## mu[7,26]	1.62670476	1.64640683	1.66459346	1.70973896	4234.8912
## mu[7,27]	2.19100141	2.23015459	2.26909593	2.37684420	2882.3961
## mu[7,28]	1.61865484	1.65203149	1.68561115	1.77448669	3312.2465
## mu[7,29]	1.61367427	1.63303379	1.65182903	1.71746388	3520.8849
## mu[7,30]	1.08203127	1.12528327	1.16567498	1.26419571	3085.2730
## mu[7,31]	0.73632115	0.75718338	0.77862170	0.83433302	3621.6133
## mu[7,32]	1.31789666	1.35597349	1.39446369	1.49816376	2935.6184
## mu[7,33]	0.71101142	0.73582418	0.76244345	0.83764081	3378.9758
## mu[7,34]	0.92646760	0.94361555	0.96110980	1.00746672	4095.1348
## mu[7,35]	1.81125044	1.82330567	1.83668875	1.87861417	3111.8360
## mu[7,36]	1.42123047	1.43259823	1.44381473	1.47529050	4226.2868
## mu[7,37]	1.67807950	1.68561657	1.69480855	1.74203563	1428.1226
## mu[7,38]	1.46645620	1.49148087	1.51995162	1.58766243	3497.4234
## mu[7,39]	1.38817870	1.43944657	1.48563362	1.66404601	3406.2173
## mu[7,40]	1.69479240	1.73625499	1.78250645	1.92062119	3620.0504
## mu[7,41]	1.22396731	1.24441778	1.26377989	1.32636663	3036.9020
## mu[7,42]	1.66751486	1.69004697	1.70838801	1.75491935	1494.7935
## mu[7,43]	1.36813695	1.39977184	1.43376375	1.53377801	4372.8020
## mu[7,44]	0.93725144	0.94955252	0.96125119	0.99575162	3109.2390
## mu[7,45]	0.90507493	0.93281624	0.96068436	1.03499523	3296.7073
## mu[7,46]	1.89970537	1.95695862	2.00715147	2.13929509	4332.0866
## mu[7,47]	0.41174178	0.43925953	0.46464226	0.53260815	3759.1219
## mu[7,48]	1.25393780	1.27903314	1.30534402	1.38365974	4662.3628
## mu[7,49]	2.46947130	2.49046527	2.50896562	2.56707064	3086.6460
## mu[7,50]	1.31906493	1.33122122	1.34559655	1.38966186	2582.9211
## mu[7,51]	2.00396822	2.04434729	2.08426709	2.20400655	2237.4593
## mu[8,1]	1.28028506	1.32706341	1.37372509	1.49503076	3689.3321
## mu[8,2]	1.92770944	1.99087478	2.06005244	2.27910114	3007.2675
## mu[8,3]	1.80301538	1.83821755	1.87525798	2.00137473	3319.1245
## mu[8,4]	1.66124437	1.69615935	1.73316055	1.84621855	3000.5216
## mu[8,5]	1.12401872	1.14180866	1.15951145	1.23304200	2112.9008
## mu[8,6]	1.39883504	1.41889014	1.43856499	1.50534445	471.4868
## mu[8,7]	0.93968443	1.01192085	1.08102405	1.26968972	3021.0073
## mu[8,8]	0.71666532	0.82548008	0.92988302	1.19384210	3754.6977
## mu[8,9]	0.92677764	0.97222653	1.02248971	1.19574386	3291.8039
## mu[8,10]	1.36755357	1.39650081	1.43063555	1.53327990	3174.0841
## mu[8,11]	1.13224541	1.18701106	1.24848934	1.42708439	2690.2162
## mu[8,12]	1.33873068	1.36572395	1.39145905	1.47273032	3346.4250
## mu[8,13]	1.00798815	1.06019381	1.11334754	1.26271771	3162.2608
## mu[8,14]	0.44678014	0.50053326	0.55445243	0.68207181	3280.8220
## mu[8,15]	2.08733651	2.11665772	2.14869395	2.28722504	1714.2523
## mu[8,16]	1.68706079	1.72785824	1.76665683	1.86832916	2775.5481
## mu[8,17]	1.70732220	1.73437498	1.76074025	1.84685690	3560.2749

## mu[8,18]	1.74277728	1.78187060	1.81689362	1.93118137	3196.0496
## mu[8,19]	1.11825833	1.17967306	1.24327601	1.42530325	3460.0355
## mu[8,20]	1.13630772	1.23227408	1.33835359	1.58498517	3181.1724
## mu[8,21]	0.55237826	0.57198431	0.59162773	0.64919704	3585.9276
## mu[8,22]	1.46932271	1.51977728	1.57438502	1.74280540	2879.5049
## mu[8,23]	1.07091184	1.13132306	1.18877668	1.33115288	3859.1184
## mu[8,24]	1.74425315	1.75505293	1.76738941	1.80655728	3638.7420
## mu[8,25]	1.49329385	1.55134660	1.61366951	1.79380943	3634.4803
## mu[8,26]	1.57893472	1.60549185	1.63383555	1.71677972	3423.5162
## mu[8,27]	2.29495076	2.35112782	2.40928518	2.55642054	3136.6288
## mu[8,28]	1.68386391	1.73140562	1.77598134	1.89421362	2811.1697
## mu[8,29]	1.57748088	1.60292100	1.63107958	1.73345849	3384.0072
## mu[8,30]	1.21864554	1.28215484	1.34328302	1.49779455	2637.9733
## mu[8,31]	0.61713501	0.64699459	0.67884054	0.76675721	3271.1875
## mu[8,32]	1.30161494	1.35901433	1.41465521	1.55743739	2463.6812
## mu[8,33]	0.70631197	0.74372136	0.78091562	0.88113823	2965.6517
## mu[8,34]	0.91188354	0.93690604	0.96361311	1.03942698	3354.5890
## mu[8,35]	1.83191199	1.84911756	1.86593825	1.92416920	3453.6911
## mu[8,36]	1.50199171	1.51716388	1.53231883	1.57107161	3518.6821
## mu[8,37]	1.66950281	1.68056631	1.69000005	1.73401016	2879.9609
## mu[8,38]	1.52206515	1.55878156	1.59777624	1.69517207	3541.6001
## mu[8,39]	1.35464199	1.42174697	1.49631403	1.77624355	3015.2370
## mu[8,40]	1.71409675	1.77709386	1.83292989	2.00857320	3603.8848
## mu[8,41]	1.18499159	1.20994070	1.24052522	1.37754070	3178.5889
## mu[8,42]	1.70675316	1.73177487	1.75857860	1.84296723	1241.3402
## mu[8,43]	1.43125257	1.48077697	1.52684736	1.65075781	4189.0158
## mu[8,44]	0.98283835	1.00048036	1.01744377	1.06718820	3209.3934
## mu[8,45]	0.87318070	0.91433837	0.95466101	1.06598878	3262.7055
## mu[8,46]	1.82587741	1.90490501	1.98467554	2.18951425	3348.5798
## mu[8,47]	0.38229943	0.42017281	0.45969811	0.56492575	3629.4193
## mu[8,48]	1.24276088	1.27730511	1.31427738	1.41966017	3342.6642
## mu[8,49]	2.56455009	2.59117221	2.61784262	2.71710688	2839.8334
## mu[8,50]	1.37698617	1.39512286	1.41104660	1.46204489	2888.5218
## mu[8,51]	2.02417803	2.08154801	2.13771384	2.30409395	3116.0436
## lp_	760.81549382	777.33595561	792.59094304	821.33651762	647.1171
##	Rhat				
## alpha[1,1]	0.9996390				
## alpha[1,2]	1.0009465				
## alpha[1,3]	1.0008398				
## alpha[1,4]	1.0002880				
## alpha[1,5]	1.0003128				
## alpha[1,6]	0.9996608				
## alpha[1,7]	1.0006129				
## alpha[1,8]	1.0012898				
## alpha[1,9]	1.0000075				
## alpha[1,10]	0.9994256				
## alpha[1,11]	1.0006868				
## alpha[1,12]	0.9999153				
## alpha[1,13]	1.0010885				
## alpha[1,14]	1.0014836				
## alpha[1,15]	1.0000805				
## alpha[1,16]	1.0001709				
## alpha[1,17]	1.0002286				
## alpha[1,18]	0.9994523				

## alpha[1,19]	0.9997516
## alpha[1,20]	1.0005126
## alpha[1,21]	1.0004543
## alpha[1,22]	0.9996818
## alpha[1,23]	1.0001407
## alpha[1,24]	1.0012082
## alpha[1,25]	0.9995474
## alpha[1,26]	0.9995753
## alpha[1,27]	0.9994467
## alpha[1,28]	1.0002886
## alpha[1,29]	1.0012347
## alpha[1,30]	1.0018910
## alpha[1,31]	0.9993899
## alpha[1,32]	0.9998685
## alpha[1,33]	1.0000955
## alpha[1,34]	1.0005021
## alpha[1,35]	1.0013269
## alpha[1,36]	1.0003851
## alpha[1,37]	1.0002143
## alpha[1,38]	0.9998890
## alpha[1,39]	1.0006296
## alpha[1,40]	1.0001235
## alpha[1,41]	1.0035852
## alpha[1,42]	0.9996950
## alpha[1,43]	0.9999950
## alpha[1,44]	0.9998192
## alpha[1,45]	1.0035230
## alpha[1,46]	0.9998730
## alpha[1,47]	1.0014695
## alpha[1,48]	1.0002578
## alpha[1,49]	1.0006815
## alpha[1,50]	1.0003402
## alpha[1,51]	1.0000890
## alpha[2,1]	1.0003656
## alpha[2,2]	1.0005577
## alpha[2,3]	1.0001976
## alpha[2,4]	1.0000167
## alpha[2,5]	1.0015155
## alpha[2,6]	1.0004297
## alpha[2,7]	1.0014601
## alpha[2,8]	1.0024125
## alpha[2,9]	1.0005148
## alpha[2,10]	1.0000421
## alpha[2,11]	1.0018859
## alpha[2,12]	1.0003269
## alpha[2,13]	1.0015249
## alpha[2,14]	1.0035624
## alpha[2,15]	1.0023277
## alpha[2,16]	1.0000053
## alpha[2,17]	1.0003190
## alpha[2,18]	0.9993877
## alpha[2,19]	0.9995216
## alpha[2,20]	0.9996730
## alpha[2,21]	1.0000542

## alpha[2,22]	1.0008011
## alpha[2,23]	1.0014549
## alpha[2,24]	1.0026763
## alpha[2,25]	0.9995948
## alpha[2,26]	0.9997753
## alpha[2,27]	0.9995020
## alpha[2,28]	1.0007416
## alpha[2,29]	1.0000776
## alpha[2,30]	1.0015684
## alpha[2,31]	0.9995703
## alpha[2,32]	0.9996190
## alpha[2,33]	0.9999509
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## alpha[2,35]	1.0027596
## alpha[2,36]	1.0004325
## alpha[2,37]	1.0015812
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## alpha[2,40]	1.0012505
## alpha[2,41]	1.0104079
## alpha[2,42]	1.0002874
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## alpha[2,46]	1.0006945
## alpha[2,47]	1.0020413
## alpha[2,48]	1.0000964
## alpha[2,49]	1.0004986
## alpha[2,50]	1.0012710
## alpha[2,51]	1.0008253
## alpha[3,1]	0.9996399
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## alpha[3,3]	0.9999214
## alpha[3,4]	0.9993814
## alpha[3,5]	0.9999079
## alpha[3,6]	1.0003628
## alpha[3,7]	0.9999252
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## alpha[3,9]	0.9996425
## alpha[3,10]	1.0022895
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## alpha[3,12]	0.9996448
## alpha[3,13]	0.9998972
## alpha[3,14]	1.0016815
## alpha[3,15]	1.0002792
## alpha[3,16]	0.9998198
## alpha[3,17]	0.9992397
## alpha[3,18]	1.0003839
## alpha[3,19]	0.9991190
## alpha[3,20]	0.9994215
## alpha[3,21]	1.0012586
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## alpha[3,23]	1.0004512
## alpha[3,24]	1.0022053

## alpha[3,25]	0.9994520
## alpha[3,26]	1.0004951
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## alpha[3,29]	0.9992451
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## alpha[3,31]	1.0002637
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## alpha[3,33]	1.0012726
## alpha[3,34]	0.9998755
## alpha[3,35]	1.0017031
## alpha[3,36]	0.9999319
## alpha[3,37]	1.0030749
## alpha[3,38]	0.9997241
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## alpha[3,41]	1.0037653
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## alpha[3,48]	0.9995733
## alpha[3,49]	1.0013111
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## alpha[3,51]	1.0020323
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## alpha[4,2]	0.9998700
## alpha[4,3]	0.9993972
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## alpha[4,5]	1.0007918
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## alpha[4,8]	1.0025036
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## alpha[4,10]	1.0023008
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## alpha[4,13]	0.9995140
## alpha[4,14]	0.9994552
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## alpha[4,16]	1.0003211
## alpha[4,17]	0.9995055
## alpha[4,18]	0.9998767
## alpha[4,19]	1.0000338
## alpha[4,20]	0.9996031
## alpha[4,21]	1.0008794
## alpha[4,22]	1.0000752
## alpha[4,23]	0.9997686
## alpha[4,24]	1.0023830
## alpha[4,25]	0.9998926
## alpha[4,26]	1.0002045
## alpha[4,27]	1.0015311

## alpha[4,28]	0.9998927
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## alpha[4,34]	0.9993503
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## alpha[4,36]	1.0002033
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## alpha[4,51]	1.0023816
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## alpha[5,4]	1.0001088
## alpha[5,5]	1.0016096
## alpha[5,6]	1.0014901
## alpha[5,7]	1.0000105
## alpha[5,8]	0.9998276
## alpha[5,9]	1.0021327
## alpha[5,10]	1.0009996
## alpha[5,11]	0.9994680
## alpha[5,12]	1.0000490
## alpha[5,13]	0.9996136
## alpha[5,14]	1.0002224
## alpha[5,15]	1.0006386
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## alpha[5,17]	0.9999704
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## alpha[5,19]	1.0020153
## alpha[5,20]	1.0007468
## alpha[5,21]	0.9996564
## alpha[5,22]	0.9998778
## alpha[5,23]	1.0016083
## alpha[5,24]	1.0014267
## alpha[5,25]	0.9997168
## alpha[5,26]	1.0005922
## alpha[5,27]	1.0012732
## alpha[5,28]	1.0000615
## alpha[5,29]	0.9999121
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## alpha[5,35]	1.0002151
## alpha[5,36]	0.9999392
## alpha[5,37]	1.0046807
## alpha[5,38]	0.9994432
## alpha[5,39]	0.9996597
## alpha[5,40]	0.9996799
## alpha[5,41]	1.0054851
## alpha[5,42]	1.0001240
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## alpha[5,44]	0.9996890
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## alpha[5,50]	1.0014992
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## alpha[6,3]	0.9996935
## alpha[6,4]	1.0003392
## alpha[6,5]	1.0026384
## alpha[6,6]	1.0003892
## alpha[6,7]	1.0007469
## alpha[6,8]	0.9997896
## alpha[6,9]	1.0006589
## alpha[6,10]	1.0016424
## alpha[6,11]	1.0000351
## alpha[6,12]	0.9993430
## alpha[6,13]	1.0007932
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## alpha[6,17]	1.0007521
## alpha[6,18]	1.0010760
## alpha[6,19]	1.0015904
## alpha[6,20]	0.9993969
## alpha[6,21]	0.9996904
## alpha[6,22]	1.0003519
## alpha[6,23]	1.0000257
## alpha[6,24]	0.9995253
## alpha[6,25]	0.9998282
## alpha[6,26]	1.0011784
## alpha[6,27]	1.0007164
## alpha[6,28]	1.0007862
## alpha[6,29]	1.0007062
## alpha[6,30]	1.0001477
## alpha[6,31]	1.0001317
## alpha[6,32]	0.9995486
## alpha[6,33]	1.0001859

## alpha[6,34]	1.0013314
## alpha[6,35]	1.0002059
## alpha[6,36]	1.0010937
## alpha[6,37]	1.0032057
## alpha[6,38]	0.9998149
## alpha[6,39]	0.9993060
## alpha[6,40]	0.9993184
## alpha[6,41]	1.0030130
## alpha[6,42]	1.0014301
## alpha[6,43]	1.0000771
## alpha[6,44]	0.9997380
## alpha[6,45]	0.9993534
## alpha[6,46]	1.0016221
## alpha[6,47]	1.0006766
## alpha[6,48]	0.9996186
## alpha[6,49]	1.0002274
## alpha[6,50]	1.0006068
## alpha[6,51]	0.9994922
## alpha[7,1]	0.9999406
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## alpha[7,3]	1.0007248
## alpha[7,4]	1.0005752
## alpha[7,5]	0.9995188
## alpha[7,6]	0.9998577
## alpha[7,7]	1.0000318
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## alpha[7,9]	1.0001935
## alpha[7,10]	1.0008650
## alpha[7,11]	1.0000167
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## alpha[7,14]	0.9999569
## alpha[7,15]	0.9995776
## alpha[7,16]	1.0003495
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## alpha[7,21]	0.9999725
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## alpha[7,31]	1.0009523
## alpha[7,32]	1.0001985
## alpha[7,33]	0.9999472
## alpha[7,34]	1.0001571
## alpha[7,35]	0.9997006
## alpha[7,36]	1.0010245


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## alpha[7,37]      1.0005066
## alpha[7,38]      1.0004066
## alpha[7,39]      0.9995335
## alpha[7,40]      1.0013035
## alpha[7,41]      1.0000530
## alpha[7,42]      1.0000517
## alpha[7,43]      0.9996970
## alpha[7,44]      1.0007005
## alpha[7,45]      1.0010851
## alpha[7,46]      0.9995372
## alpha[7,47]      1.0007392
## alpha[7,48]      1.0010073
## alpha[7,49]      0.9996522
## alpha[7,50]      0.9998101
## alpha[7,51]      1.0001429
## sigma_alpha[1]   1.0029406
## sigma_alpha[2]   1.0012442
## sigma_alpha[3]   1.0015344
## sigma_alpha[4]   1.0007275
## sigma_alpha[5]   1.0003713
## sigma_alpha[6]   1.0005210
## sigma_alpha[7]   1.0011939
## sigma_alpha[8]   1.0098451
## sigma_alpha[9]   1.0024688
## sigma_alpha[10]  0.9999279
## sigma_alpha[11]  1.0014129
## sigma_alpha[12]  1.0002638
## sigma_alpha[13]  1.0028488
## sigma_alpha[14]  1.0036686
## sigma_alpha[15]  1.0010002
## sigma_alpha[16]  1.0005357
## sigma_alpha[17]  1.0018136
## sigma_alpha[18]  0.9997632
## sigma_alpha[19]  1.0032063
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## sigma_alpha[31]  1.0023396
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## sigma_alpha[35]  1.0005110
## sigma_alpha[36]  1.0012633
## sigma_alpha[37]  1.0010927
## sigma_alpha[38]  0.9995566
## sigma_alpha[39]  1.0012278

```

```

## sigma_alpha[40] 1.0027230
## sigma_alpha[41] 1.0020233
## sigma_alpha[42] 1.0001213
## sigma_alpha[43] 1.0002539
## sigma_alpha[44] 1.0026344
## sigma_alpha[45] 1.0037819
## sigma_alpha[46] 1.0026162
## sigma_alpha[47] 1.0038779
## sigma_alpha[48] 1.0027232
## sigma_alpha[49] 1.0003157
## sigma_alpha[50] 0.9999679
## sigma_alpha[51] 1.0009088
## sigma_y[1]      1.0000851
## sigma_y[2]      1.0044448
## sigma_y[3]      1.0011403
## sigma_y[4]      1.0059539
## sigma_y[5]      1.0050141
## sigma_y[6]      1.0078226
## sigma_y[7]      1.0009750
## sigma_y[8]      1.0046280
## sigma_y[9]      1.0021611
## sigma_y[10]     1.0049235
## sigma_y[11]     1.0006736
## sigma_y[12]     1.0013835
## sigma_y[13]     1.0042578
## sigma_y[14]     1.0003185
## sigma_y[15]     1.0021233
## sigma_y[16]     1.0029162
## sigma_y[17]     1.0041482
## sigma_y[18]     1.0013874
## sigma_y[19]     1.0011350
## sigma_y[20]     1.0019934
## sigma_y[21]     1.0022405
## sigma_y[22]     1.0001743
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## sigma_y[24]     1.0091397
## sigma_y[25]     1.0011987
## sigma_y[26]     1.0045642
## sigma_y[27]     1.0013278
## sigma_y[28]     1.0007667
## sigma_y[29]     1.0018008
## sigma_y[30]     1.0003851
## sigma_y[31]     1.0001250
## sigma_y[32]     1.0013580
## sigma_y[33]     1.0016640
## sigma_y[34]     1.0024601
## sigma_y[35]     1.0058224
## sigma_y[36]     1.0025269
## sigma_y[37]     1.0033580
## sigma_y[38]     1.0055811
## sigma_y[39]     1.0028994
## sigma_y[40]     1.0017809
## sigma_y[41]     1.0155912
## sigma_y[42]     1.0049061

```

```

## sigma_y[43]      1.0016199
## sigma_y[44]      1.0019248
## sigma_y[45]      1.0021810
## sigma_y[46]      1.0008623
## sigma_y[47]      1.0021630
## sigma_y[48]      1.0006910
## sigma_y[49]      1.0020818
## sigma_y[50]      1.0008858
## sigma_y[51]      1.0087251
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## mu[1,3]          0.9997683
## mu[1,4]          0.9998946
## mu[1,5]          1.0021139
## mu[1,6]          1.0010753
## mu[1,7]          1.0013393
## mu[1,8]          1.0010830
## mu[1,9]          1.0013453
## mu[1,10]         1.0015599
## mu[1,11]         1.0019210
## mu[1,12]         1.0001944
## mu[1,13]         1.0013429
## mu[1,14]         1.0006693
## mu[1,15]         1.0027403
## mu[1,16]         0.9997018
## mu[1,17]         1.0007943
## mu[1,18]         0.9997433
## mu[1,19]         0.9996853
## mu[1,20]         0.9993567
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## mu[1,23]         1.0003794
## mu[1,24]         1.0024217
## mu[1,25]         1.0000184
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## mu[1,31]         0.9995730
## mu[1,32]         0.9992846
## mu[1,33]         0.9998612
## mu[1,34]         0.9999782
## mu[1,35]         1.0023828
## mu[1,36]         0.9999706
## mu[1,37]         0.9997502
## mu[1,38]         1.0016248
## mu[1,39]         1.0010108
## mu[1,40]         1.0001496
## mu[1,41]         1.0076155
## mu[1,42]         1.0003882
## mu[1,43]         0.9993907
## mu[1,44]         1.0001500
## mu[1,45]         1.0010602

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## mu[1,46]	1.0012041
## mu[1,47]	1.0014024
## mu[1,48]	1.0002585
## mu[1,49]	1.0007547
## mu[1,50]	1.0000886
## mu[1,51]	1.0017585
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## mu[2,4]	0.9994071
## mu[2,5]	0.9998290
## mu[2,6]	1.0002408
## mu[2,7]	1.0002595
## mu[2,8]	1.0033018
## mu[2,9]	0.9998813
## mu[2,10]	1.0017399
## mu[2,11]	1.0003462
## mu[2,12]	0.9999477
## mu[2,13]	1.0004251
## mu[2,14]	1.0000827
## mu[2,15]	1.0008044
## mu[2,16]	0.9994534
## mu[2,17]	0.9994682
## mu[2,18]	1.0006829
## mu[2,19]	0.9993811
## mu[2,20]	0.9994677
## mu[2,21]	1.0009870
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## mu[2,34]	0.9999195
## mu[2,35]	1.0005327
## mu[2,36]	0.9996487
## mu[2,37]	1.0015826
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## mu[2,48]	0.9995968

## mu[2,49]	1.0009759
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## mu[2,51]	1.0032458
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## mu[3,7]	1.0000775
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## mu[3,9]	1.0000253
## mu[3,10]	0.9992698
## mu[3,11]	1.0000234
## mu[3,12]	1.0007771
## mu[3,13]	1.0002179
## mu[3,14]	1.0001606
## mu[3,15]	1.0031376
## mu[3,16]	0.9995904
## mu[3,17]	0.9997438
## mu[3,18]	1.0002799
## mu[3,19]	0.9994798
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## mu[3,30]	0.9999979
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## mu[3,38]	0.9997351
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## mu[3,43]	1.0008616
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## mu[3,46]	1.0004437
## mu[3,47]	0.9996971
## mu[3,48]	0.9994914
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## mu[3,50]	1.0013354
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## mu[4,1]	0.9995535
## mu[4,2]	0.9997585
## mu[4,3]	0.9994298
## mu[4,4]	0.9998201
## mu[4,5]	1.0008305
## mu[4,6]	1.0017335
## mu[4,7]	1.0003626
## mu[4,8]	0.9999792
## mu[4,9]	1.0007794
## mu[4,10]	1.0008824
## mu[4,11]	1.0001615
## mu[4,12]	1.0008152
## mu[4,13]	0.9997150
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## mu[4,15]	1.0046066
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## mu[4,17]	0.9997735
## mu[4,18]	0.9995295
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## mu[4,25]	1.0002633
## mu[4,26]	0.9998523
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## mu[4,29]	0.9999988
## mu[4,30]	0.9998672
## mu[4,31]	1.0000109
## mu[4,32]	1.0000154
## mu[4,33]	1.0012610
## mu[4,34]	0.9994032
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## mu[4,38]	1.0008016
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## mu[4,40]	0.9999559
## mu[4,41]	1.0031444
## mu[4,42]	0.9999861
## mu[4,43]	0.9999957
## mu[4,44]	1.0000323
## mu[4,45]	1.0014794
## mu[4,46]	0.9999435
## mu[4,47]	0.9995414
## mu[4,48]	0.9992390
## mu[4,49]	0.9995558
## mu[4,50]	1.0007089
## mu[4,51]	1.0048612
## mu[5,1]	0.9993817
## mu[5,2]	0.9998323
## mu[5,3]	0.9998035

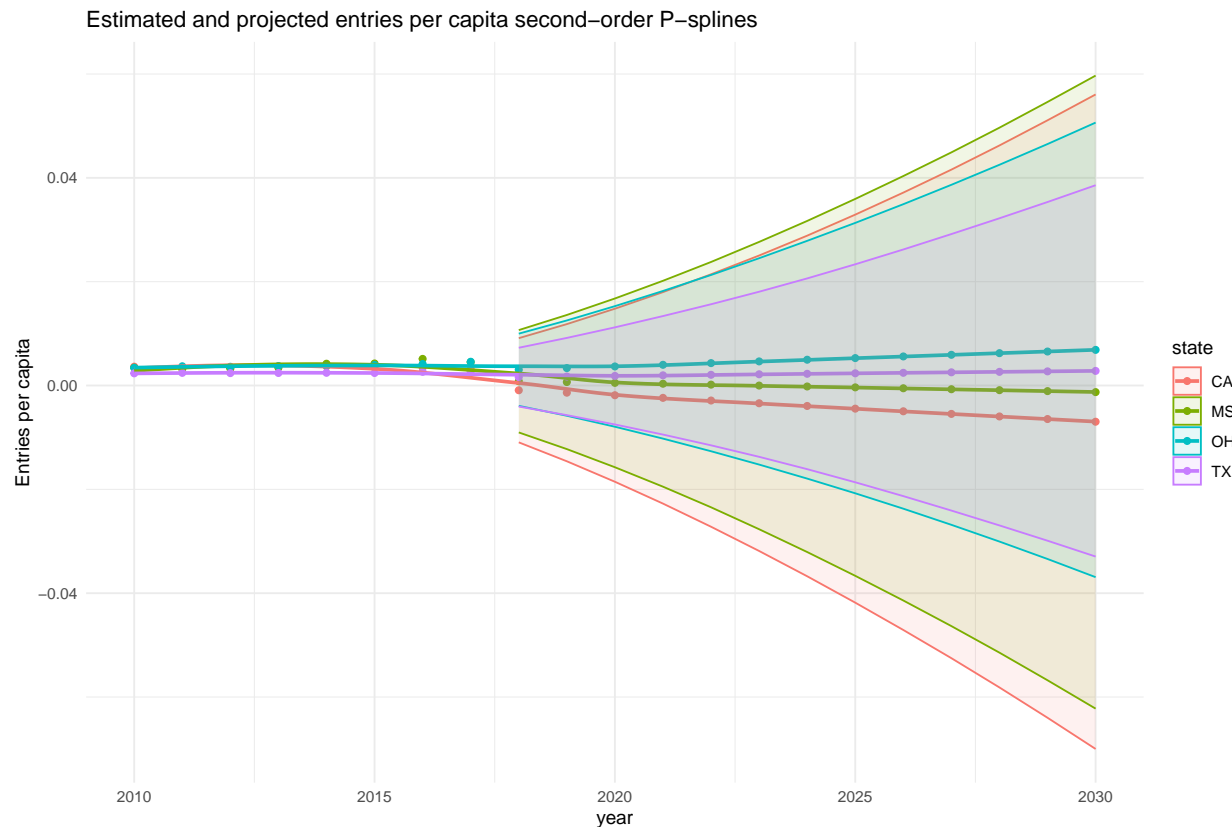
## mu[5,4]	0.9996733
## mu[5,5]	1.0005161
## mu[5,6]	1.0005729
## mu[5,7]	0.9999831
## mu[5,8]	1.0010587
## mu[5,9]	1.0002852
## mu[5,10]	1.0011458
## mu[5,11]	0.9998204
## mu[5,12]	1.0002384
## mu[5,13]	0.9993492
## mu[5,14]	0.9996485
## mu[5,15]	1.0027346
## mu[5,16]	0.9997513
## mu[5,17]	0.9996265
## mu[5,18]	0.9992789
## mu[5,19]	0.9996446
## mu[5,20]	0.9998633
## mu[5,21]	1.0004436
## mu[5,22]	0.9994782
## mu[5,23]	1.0003721
## mu[5,24]	1.0006954
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## mu[5,26]	0.9992155
## mu[5,27]	1.0022133
## mu[5,28]	1.0002268
## mu[5,29]	0.9997800
## mu[5,30]	1.0001264
## mu[5,31]	1.0001859
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## mu[5,33]	1.0010432
## mu[5,34]	0.9992783
## mu[5,35]	0.9999595
## mu[5,36]	0.9999298
## mu[5,37]	1.0007006
## mu[5,38]	1.0007922
## mu[5,39]	0.9996842
## mu[5,40]	0.9996614
## mu[5,41]	0.9995733
## mu[5,42]	1.0005024
## mu[5,43]	0.9997689
## mu[5,44]	1.0001793
## mu[5,45]	1.0009990
## mu[5,46]	0.9994325
## mu[5,47]	1.0004298
## mu[5,48]	0.9991600
## mu[5,49]	0.9998647
## mu[5,50]	0.9998353
## mu[5,51]	1.0046237
## mu[6,1]	1.0001980
## mu[6,2]	0.9996492
## mu[6,3]	1.0000305
## mu[6,4]	0.9998830
## mu[6,5]	1.0008100
## mu[6,6]	1.0009987

## mu[6,7]	0.9996908
## mu[6,8]	1.0005330
## mu[6,9]	1.0012433
## mu[6,10]	1.0001356
## mu[6,11]	0.9994608
## mu[6,12]	1.0000362
## mu[6,13]	0.9994360
## mu[6,14]	1.0001083
## mu[6,15]	1.0004327
## mu[6,16]	0.9999538
## mu[6,17]	0.9998921
## mu[6,18]	1.0001965
## mu[6,19]	1.0005395
## mu[6,20]	1.0003528
## mu[6,21]	0.9996775
## mu[6,22]	0.9994498
## mu[6,23]	1.0015164
## mu[6,24]	1.0001966
## mu[6,25]	0.9999957
## mu[6,26]	0.9997521
## mu[6,27]	1.0019105
## mu[6,28]	0.9999165
## mu[6,29]	0.9998084
## mu[6,30]	1.0007536
## mu[6,31]	0.9998094
## mu[6,32]	0.9997415
## mu[6,33]	1.0006308
## mu[6,34]	0.9996273
## mu[6,35]	0.9994101
## mu[6,36]	0.9994570
## mu[6,37]	1.0018430
## mu[6,38]	0.9998330
## mu[6,39]	0.9995628
## mu[6,40]	0.9997014
## mu[6,41]	1.0027353
## mu[6,42]	1.0011046
## mu[6,43]	0.9998867
## mu[6,44]	0.9999233
## mu[6,45]	0.9996517
## mu[6,46]	0.9994169
## mu[6,47]	1.0016277
## mu[6,48]	0.9993728
## mu[6,49]	0.9996019
## mu[6,50]	1.0004583
## mu[6,51]	1.0023662
## mu[7,1]	1.0009338
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## mu[7,4]	0.9994421
## mu[7,5]	1.0002166
## mu[7,6]	1.0038196
## mu[7,7]	0.9999427
## mu[7,8]	0.9999474
## mu[7,9]	1.0012680

## mu[7,10]	0.9999013
## mu[7,11]	0.9997392
## mu[7,12]	1.0003762
## mu[7,13]	1.0002275
## mu[7,14]	1.0002206
## mu[7,15]	1.0005944
## mu[7,16]	1.0003003
## mu[7,17]	1.0003290
## mu[7,18]	0.9999492
## mu[7,19]	0.9998637
## mu[7,20]	1.0001686
## mu[7,21]	0.9997458
## mu[7,22]	0.9998278
## mu[7,23]	1.0013719
## mu[7,24]	1.0018999
## mu[7,25]	0.9995951
## mu[7,26]	1.0002358
## mu[7,27]	1.0009648
## mu[7,28]	0.9993826
## mu[7,29]	1.0001390
## mu[7,30]	1.0011498
## mu[7,31]	0.9995564
## mu[7,32]	1.0000643
## mu[7,33]	1.0001380
## mu[7,34]	1.0001152
## mu[7,35]	0.9994558
## mu[7,36]	0.9993304
## mu[7,37]	1.0029897
## mu[7,38]	1.0001077
## mu[7,39]	0.9999925
## mu[7,40]	0.9998897
## mu[7,41]	1.0018044
## mu[7,42]	1.0010526
## mu[7,43]	0.9993708
## mu[7,44]	1.0000055
## mu[7,45]	0.9991688
## mu[7,46]	0.9998834
## mu[7,47]	1.0006301
## mu[7,48]	0.9994333
## mu[7,49]	0.9993106
## mu[7,50]	1.0007670
## mu[7,51]	1.0002016
## mu[8,1]	1.0009297
## mu[8,2]	1.0002242
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## mu[8,4]	0.9996976
## mu[8,5]	1.0016715
## mu[8,6]	1.0033021
## mu[8,7]	1.0005251
## mu[8,8]	0.9998537
## mu[8,9]	0.9998172
## mu[8,10]	1.0011637
## mu[8,11]	1.0001386
## mu[8,12]	0.9996773

## mu[8,13]	1.0011802
## mu[8,14]	1.0003999
## mu[8,15]	1.0008444
## mu[8,16]	1.0000802
## mu[8,17]	1.0008899
## mu[8,18]	1.0004123
## mu[8,19]	1.0002284
## mu[8,20]	0.9994518
## mu[8,21]	0.9997284
## mu[8,22]	1.0003451
## mu[8,23]	1.0000077
## mu[8,24]	0.9994193
## mu[8,25]	0.9996467
## mu[8,26]	1.0009424
## mu[8,27]	1.0006655
## mu[8,28]	1.0002884
## mu[8,29]	1.0010318
## mu[8,30]	1.0006633
## mu[8,31]	1.0004076
## mu[8,32]	0.9994752
## mu[8,33]	1.0002146
## mu[8,34]	1.0016445
## mu[8,35]	0.9994817
## mu[8,36]	1.0015780
## mu[8,37]	1.0016592
## mu[8,38]	1.0003677
## mu[8,39]	0.9998068
## mu[8,40]	0.9996257
## mu[8,41]	1.0000992
## mu[8,42]	1.0028450
## mu[8,43]	0.9994934
## mu[8,44]	1.0002885
## mu[8,45]	0.9994087
## mu[8,46]	1.0012356
## mu[8,47]	0.9998257
## mu[8,48]	0.9994862
## mu[8,49]	0.9995841
## mu[8,50]	1.0003369
## mu[8,51]	0.9992357
## lp_--	1.0067066

Question 3: Project forward entries per capita to 2030. Pick 4 states and plot the results (with 95% CIs). Note the code to do this in R is in the lecture slides.



Question 4 (bonus) P-Splines are quite useful in structural time series models, when you are using a model of the form

$$f(y_t) = \text{systematic part} + \text{time-specific deviations}$$

where the systematic part is model with a set of covariates for example, and P-splines are used to smooth data-driven deviations over time. Consider adding covariates to the model you ran above. What are some potential issues that may happen in estimation? Can you think of an additional constraint to add to the model that would overcome these issues?

Adding covariates would potentially reduce bias but increase variance. Since P-spline extrapolates recent trends into the future, which relies on the difference between the last two splines to smooth data-driven deviations over time, resulting in projections that are out of range of the observed sample and even negative. To overcome these issues, we can place non-negative, monotonicity or shape constraints on P-spline smoothings.