Summary Statistics

The summary statistics provided in the following tables are for the following:

- *Posterior*: This is the log joint posterior density function of all the parameters and time trees, which is calculated at every state in the MCMC. This means that for every state j in the MCMC, $f\left(\mathcal{T}^{(j)}, \boldsymbol{\eta}^{(j)}, \boldsymbol{\nu}^{(j)}, \mathbf{r}^{(j)}, \alpha^{(j)} | \mathbb{S}_{\mathcal{I}}, \mathbf{t}_{\mathcal{I}}, C, S\right)$ is calculated. η is the vector containing the parameters of the birth-death skyline model, where the parameters depend on which BDSKY model is utilised.
- *Likelihood*: This is the log phylogenetic likelihood of all the parameters and time trees, which is calculated at every state in the MCMC. This means that for every state j in the MCMC, $f\left(\mathbb{S}_{\mathcal{I}} | \mathcal{T}^{(j)}, \boldsymbol{\eta}^{(j)}, \boldsymbol{\nu}^{(j)}, \mathbf{r}^{(j)}, \alpha^{(j)}\right)$ is calculated.
- *Prior*: This is the log joint prior density function of all the parameters and time trees, which is calculated at every state in the MCMC. This means that for every state j in the MCMC, $f\left(\mathcal{T}^{(j)}, \boldsymbol{\eta}^{(j)}, \boldsymbol{\nu}^{(j)}, \mathbf{r}^{(j)}, \alpha^{(j)}\right)$ is calculated.
- *BDSKY*: This is the log density function of the birth-death skyline model, which is calculated at every state in the MCMC. This means that for every state j in the MCMC, $f\left(\mathcal{T}^{(j)} | \boldsymbol{\eta}^{(j)}, S\right)$ is calculated.
- *MRCA*: The MRCA of all the samples.
- τ_0: The time of origin.
- ρ_i: The sampling probability for $i = 1, ..., m$.
- s: The proportion of sampled individuals.
- δ: The becoming noninfectious rate, which can be converted into expected duration of infection in days as $365/\delta$.
- R_i: The effective reproductive number for $i = 1, ..., m$.
- r_{ij}: The rate of change from nucleotide i to nucleotide j for $i, j \in \{A, C, G, T\}$, $i \neq j$.
- α: The gamma shape parameter of rate heterogeneity.
- p_{inv}: The proportion of invariable sites.
- π_i: The stationary probability of nucleotide $i \in \{A, C, G, T\}$.
- *rate.mean*: Calculates $[\sum_{\langle i,j \rangle \in \mathcal{R}} r_j(t_i - t_j)]/[\sum_{\langle i,j \rangle \in \mathcal{R}}(t_i - t_j)]$, where $\langle i, j \rangle$ is the branch connecting node i to node j, r_j is the mutation rate at branch $\langle i, j \rangle$ and $t_i - t_j$ is the branch length of $\langle i, j \rangle$ proportional to time.
- *rate.variance*: Variance of the mutation rates.

- *ucldMean*: Calculates $\frac{1}{2n-2}\sum_j r_j$
- *ucldStdev*: The standard deviation S of the log rate in the uncorrelated log-normal molecular clock model
- c_v: The standard deviation divided by the mean of the mutation rate.

BDSKY Serial

	Mean	**Variance**	**Median**	**95% Lower HPD**	**95% Upper HPD**	**ESS**
Prior	3992	27052	3999	3654	4293	218
MRCA	1.397	1.74E-04	1.394	1.380	1.424	5093
BDSKY	4118	32022	4126	3751	4445	218
τ_0	1.4572	5.18E-05	1.4571	1.4462	1.4739	6190
s	0.3831	2.02E-03	0.3828	0.2937	0.4696	506
δ	75.831	70.776	75.617	59.722	92.191	284
R_1	0.816	0.087	0.780	0.297	1.406	3130
R_2	0.874	0.082	0.847	0.356	1.441	9168
R_3	0.628	0.076	0.589	0.173	1.173	4723
R_4	0.631	0.076	0.595	0.147	1.167	6405
R_5	0.627	0.074	0.591	0.156	1.157	4602
R_6	0.901	0.160	0.843	0.192	1.689	2132
R_7	1.914	0.152	1.878	1.192	2.672	3251
R_8	1.266	0.023	1.259	0.995	1.583	2785
R_9	0.707	0.016	0.698	0.468	0.970	1491
R_{10}	1.459	0.029	1.449	1.126	1.784	4423
R_{11}	0.240	0.012	0.221	0.064	0.449	3166
R_{12}	0.633	0.074	0.595	0.161	1.140	4414
R_{13}	1.477	0.062	1.458	1.026	1.971	4420
R_{14}	1.260	0.014	1.253	1.046	1.499	3497
R_{15}	1.175	0.007	1.171	1.015	1.334	1741
r_{AC}	0.754	3.91E-01	0.612	0.010	1.924	9168
r_{AG}	1.486	8.20E-01	1.338	0.095	3.214	9168
r_{AT}	0.754	3.94E-01	0.609	0.010	1.951	8918
r_{CG}	0.751	3.87E-01	0.613	0.010	1.951	9168
r_{CT}	1.488	8.17E-01	1.344	0.062	3.151	9168
r_{GT}	0.767	4.02E-01	0.625	0.010	1.958	9168
α	0.997	1.0195	0.683	1.11E-03	3.018	9168
p_{inv}	0.199	2.64E-02	0.157	1.97E-05	0.526	9168
π_A	0.247	3.71E-02	0.202	1.30E-04	0.627	8551
π_C	0.253	3.80E-02	0.210	6.09E-05	0.636	9168

π_G	0.251	3.73E-02	0.207	3.31E-05	0.627	9168
π_T	0.249	3.75E-02	0.204	6.04E-05	0.634	8844
ucldMean	8.01E-04	6.71E-09	7.98E-04	6.51E-04	9.64E-04	9168
ucldStdev	0.2049	7.45E-02	0.099	0.000	0.778	9168
rate.mean	8.01E-04	6.99E-09	7.98E-04	6.41E-04	9.65E-04	9168
rate.variance	8.68E-08	5.98E-16	8.36E-08	4.31E-08	1.35E-07	9168
c_v	0.364	1.03E-03	0.363	0.302	0.427	9168

Table 1: Summary statistics of the prior samples of the parameters of the BD-SKY serial model.

	MAP	**Mean**	**Variance**	**Median**	**95% Lower HPD**	**95% Upper HPD**	**ESS**
Posterior	-58760	-58766	2500	-58765	-58865	-58672	268
Likelihood	-60548	-60551	635	-60551	-60600	-60500	212
Prior	1785	1785	2069	1786	1698	1873	169
MRCA	1.497	1.505	3.02E-03	1.498	1.413	1.612	4669
BDSKY	1808	1810	2181	1810	1721	1900	169
τ_0	2.151	2.1486	1.12E-04	2.1498	2.1263	2.1653	4710
s	0.063	0.0654	1.58E-04	0.0643	0.0432	0.0915	2267
δ	28.400	28.789	6.659	28.654	23.706	33.661	6521
R_1	0.891	0.984	0.171	0.938	0.261	1.804	9655
R_2	0.903	0.997	0.166	0.950	0.258	1.797	9470
R_3	0.892	0.996	0.166	0.953	0.294	1.832	9761
R_4	0.839	0.962	0.166	0.916	0.259	1.772	10266
R_5	1.275	1.395	0.215	1.370	0.469	2.283	6335
R_6	1.026	1.050	0.074	1.037	0.551	1.600	4908
R_7	0.710	0.829	0.145	0.773	0.177	1.555	886
R_8	1.079	1.156	0.087	1.135	0.604	1.756	984
R_9	1.753	1.778	0.029	1.766	1.459	2.117	657
R_{10}	1.090	1.097	0.005	1.096	0.957	1.222	4331
R_{11}	0.703	0.705	0.005	0.705	0.564	0.839	4551
R_{12}	1.211	1.221	0.007	1.218	1.067	1.382	3508
R_{13}	0.940	0.935	0.007	0.936	0.768	1.096	3047
R_{14}	1.165	1.165	0.003	1.164	1.050	1.280	2877
R_{15}	1.310	1.315	0.003	1.313	1.205	1.429	3941
r_{AC}	0.243	0.242	4.38E-04	0.242	0.201	0.282	10191
r_{AG}	1.224	1.215	3.44E-03	1.215	1.104	1.334	9650
r_{AT}	0.113	0.117	2.57E-04	0.117	0.087	0.149	10161
r_{CG}	0.242	0.241	4.78E-04	0.242	0.198	0.283	9975
r_{CT}	3.105	3.091	5.50E-03	3.091	2.948	3.236	10052
r_{GT}	1.091	1.094	3.00E-03	1.092	0.990	1.205	10266

α	0.978	1.065	0.098	1.022	0.533	1.698	3109
p_{inv}	0.743	0.735	8.29E-04	0.738	0.680	0.790	2554
π_A	0.298	0.298	6.61E-06	0.298	0.294	0.303	9559
π_C	0.177	0.177	4.67E-06	0.177	0.173	0.182	9584
π_G	0.193	0.193	4.97E-06	0.193	0.188	0.197	9812
π_T	0.332	0.332	7.11E-06	0.332	0.327	0.337	9885
ucldMean	8.89E-04	9.09E-04	3.82E-09	9.06E-04	7.89E-04	1.03E-03	381
ucldStdev	1.158	1.157	4.90E-03	1.157	1.024	1.296	763
rate.mean	8.95E-04	8.97E-04	1.69E-09	8.97E-04	8.17E-04	9.78E-04	257
rate.variance	1.76E-06	2.03E-06	3.60E-13	1.94E-06	1.01E-06	3.19E-06	415
c_v	1.470	1.541	0.026	1.526	1.246	1.861	532

Table 2: Summary statistics of the posterior samples of the parameters of the BDSKY serial model.

BDSKY Multi-rho

	Mean	Variance	Median	95% Lower HPD	95% Upper HPD	ESS
Prior	5056	8674	5057	4877	5239	219
MRCA	0.874	0.000	0.873	0.867	0.883	3929
BDSKY	5260	11430	5263	5051	5468	219
τ_0	0.9078	1.05E-04	0.909	0.8918	0.922	1300
ρ_1	0.069	2.25E-03	0.058	2.28E-03	0.161	3170
ρ_2	0.082	2.98E-03	0.071	2.23E-03	0.186	3630
ρ_3	0.074	2.34E-03	0.064	4.64E-03	0.171	3263
ρ_4	0.080	2.82E-03	0.069	3.85E-03	0.184	3560
ρ_5	0.050	1.20E-03	0.042	1.31E-03	0.116	3557
ρ_6	0.061	1.81E-03	0.052	1.34E-03	0.143	3786
ρ_7	0.069	2.17E-03	0.060	1.65E-03	0.158	3456
ρ_8	0.069	2.21E-03	0.059	2.45E-03	0.159	3592
ρ_9	0.061	1.67E-03	0.052	1.70E-03	0.139	3450
ρ_{10}	0.054	1.39E-03	0.046	1.01E-03	0.125	3053
ρ_{11}	0.076	2.57E-03	0.065	2.71E-03	0.177	3573
ρ_{12}	0.073	2.36E-03	0.062	1.25E-03	0.166	3708
ρ_{13}	0.075	2.50E-03	0.065	2.67E-03	0.173	3607
ρ_{14}	0.081	3.03E-03	0.069	2.05E-03	0.185	3285
ρ_{15}	0.077	2.65E-03	0.067	3.14E-03	0.178	3274
ρ_{16}	0.067	2.07E-03	0.058	1.47E-03	0.155	3590
ρ_{17}	0.075	2.53E-03	0.064	3.51E-03	0.176	3718
ρ_{18}	0.071	2.34E-03	0.061	1.97E-03	0.162	3418
ρ_{19}	0.205	5.44E-03	0.198	0.0723	0.354	4606
ρ_{20}	0.081	2.98E-03	0.069	3.12E-03	0.191	3673
ρ_{21}	0.079	2.73E-03	0.068	4.28E-03	0.184	3532
ρ_{22}	0.085	3.14E-03	0.073	2.12E-03	0.192	3693
ρ_{23}	0.079	2.79E-03	0.068	6.11E-03	0.185	3335
ρ_{24}	0.083	3.00E-03	0.072	2.49E-03	0.189	3259
ρ_{25}	0.079	2.76E-03	0.068	3.51E-03	0.184	3664
ρ_{26}	0.081	2.92E-03	0.070	1.82E-03	0.186	3781
ρ_{27}	0.081	2.83E-03	0.070	1.55E-03	0.186	3805
ρ_{28}	0.081	2.83E-03	0.070	2.15E-03	0.183	3079
ρ_{29}	0.078	2.72E-03	0.067	4.44E-03	0.182	2903
ρ_{30}	0.079	2.78E-03	0.068	2.79E-03	0.184	3559
ρ_{31}	0.076	2.56E-03	0.064	2.46E-03	0.177	3578
ρ_{32}	0.072	2.36E-03	0.061	2.34E-03	0.169	3514
ρ_{33}	0.072	2.31E-03	0.061	2.83E-03	0.165	3543
ρ_{34}	0.069	2.18E-03	0.059	1.99E-03	0.159	3809

ρ_{35}	0.063	1.80E-03	0.054	2.58E-03	0.147	3643
ρ_{36}	0.057	1.50E-03	0.048	1.97E-03	0.132	2123
ρ_{37}	0.068	2.17E-03	0.057	2.74E-03	0.159	3062
ρ_{38}	0.060	1.71E-03	0.051	1.42E-03	0.142	3016
ρ_{39}	0.052	1.23E-03	0.045	1.90E-03	0.122	3515
ρ_{40}	0.053	1.36E-03	0.044	2.59E-03	0.127	3170
ρ_{41}	0.055	1.48E-03	0.046	1.73E-03	0.130	3322
ρ_{42}	0.051	1.25E-03	0.043	1.06E-03	0.118	3368
ρ_{43}	0.031	4.55E-04	0.026	1.01E-03	0.074	3326
ρ_{44}	0.080	2.75E-03	0.068	4.50E-03	0.186	3032
ρ_{45}	0.060	1.79E-03	0.050	2.24E-03	0.142	3273
ρ_{46}	0.049	1.18E-03	4.18E-02	9.47E-04	0.116	2897
ρ_{47}	3.98E-02	7.48E-04	3.41E-02	8.21E-04	0.094	3441
ρ_{48}	6.26E-02	1.72E-03	5.35E-02	1.76E-03	0.143	3590
ρ_{49}	6.49E-02	1.85E-03	5.66E-02	2.49E-03	0.148	3654
ρ_{50}	4.12E-02	8.25E-04	3.48E-02	7.22E-04	0.097	3048
ρ_{51}	3.52E-02	5.98E-04	2.97E-02	7.63E-04	0.083	2764
ρ_{52}	3.22E-02	5.20E-04	2.71E-02	1.13E-03	0.077	2865
ρ_{53}	4.35E-02	8.85E-04	3.71E-02	1.16E-03	0.101	3331
ρ_{54}	5.04E-02	1.21E-03	4.29E-02	9.00E-04	0.119	3550
ρ_{55}	4.81E-02	1.11E-03	4.09E-02	7.59E-04	0.111	3455
ρ_{56}	6.09E-02	1.75E-03	5.20E-02	2.13E-03	0.143	3208
ρ_{57}	4.02E-02	7.93E-04	3.38E-02	1.88E-03	0.096	2565
ρ_{58}	7.38E-02	2.45E-03	6.37E-02	1.84E-03	0.170	3203
ρ_{59}	3.45E-02	6.14E-04	2.87E-02	1.26E-03	0.083	3046
ρ_{60}	3.43E-02	5.72E-04	2.92E-02	8.17E-04	0.080	3309
ρ_{61}	2.03E-02	2.05E-04	1.71E-02	3.55E-04	0.048	3053
ρ_{62}	3.46E-02	5.97E-04	2.88E-02	8.26E-04	0.083	3123
ρ_{63}	4.60E-02	1.02E-03	3.88E-02	1.34E-03	0.109	3291
ρ_{64}	3.75E-02	6.81E-04	3.19E-02	1.24E-03	0.087	2743
ρ_{65}	6.72E-02	2.08E-03	5.80E-02	2.00E-03	0.157	3206
ρ_{66}	0.338	5.61E-03	0.334	0.198	0.490	3889
s	0.569	1.12E-03	0.568	0.503	0.632	1921
δ	158.699	146.757	158.509	136.015	183.702	347
R_1	1.632	0.101	1.600	1.081	2.292	2722
R_2	0.443	0.050	0.402	0.093	0.872	4113
R_3	1.791	0.109	1.766	1.145	2.417	2413
R_4	1.304	0.041	1.289	0.933	1.714	2026
R_5	1.164	0.073	1.140	0.668	1.699	2103
R_6	0.794	0.058	0.770	0.357	1.277	5782
R_7	1.417	0.044	1.400	1.035	1.838	2604
R_8	0.603	0.083	0.545	0.155	1.170	2391

R_9	0.463	0.042	0.437	0.111	0.848	6234
R_{10}	0.461	0.043	0.430	0.130	0.879	7246
R_{11}	1.154	0.152	1.166	0.390	1.862	2556
R_{12}	1.345	0.082	1.324	0.819	1.924	2978
R_{13}	1.571	0.073	1.544	1.069	2.092	1476
R_{14}	1.048	0.032	1.037	0.714	1.407	1158
R_{15}	1.451	0.024	1.441	1.162	1.756	685
r_{AC}	0.760	3.83E-01	0.624	0.010	1.946	7189
r_{AG}	1.476	7.98E-01	1.349	0.072	3.216	7246
r_{AT}	0.779	4.00E-01	0.644	0.010	1.990	7246
r_{CG}	0.765	3.75E-01	0.629	0.010	1.909	7246
r_{CT}	1.456	7.67E-01	1.329	0.074	3.096	7018
r_{GT}	0.764	3.75E-01	0.629	0.010	1.934	6798
α	0.987	0.9533	0.688	0.001	2.903	7246
p_{inv}	0.197	2.60E-02	0.156	0.000	0.519	7130
π_A	0.250	3.76E-02	0.207	0.000	0.637	7246
π_C	0.250	3.72E-02	0.207	0.000	0.623	7121
π_G	0.252	3.69E-02	0.212	0.000	0.626	7018
π_T	0.247	3.69E-02	0.201	0.000	0.626	7037
ucldMean	7.98E-04	6.59E-09	7.93E-04	6.36E-04	9.55E-04	7006
ucldStdev	0.205	8.03E-02	0.101	0.000	0.776	7246
rate.mean	7.98E-04	7.13E-09	7.92E-04	6.33E-04	9.61E-04	6494
rate.variance	1.09E-07	2.39E-14	2.36E-08	5.20E-09	4.54E-07	13
c_v	0.329	0.0617	0.1887	0.1113	0.8193	12

Table 3: Summary statistics of the prior densities of the parameters of the BDSKY multi-rho model.

	MAP	**Mean**	**Variance**	**Median**	**95% Lower HPD**	**95% Upper HPD**	**ESS**
Posterior	-58453	-58449	2149	-58449	-58543	-58360	209
Likelihood	-60300	-60302	694	-60302	-60353	-60250	189
Prior	1854	1853	1777	1854	1771	1935	114
MRCA	1.086	1.117	0.006	1.104	0.984	1.263	721
BDSKY M.	1830	1833	1844	1833	1748	1915	122
τ_0	2.151	2.1521	3.38E-04	2.151	2.138	2.163	430
ρ_1	0.008	0.014	1.04E-04	0.012	1.77E-04	0.033	3650
ρ_2	0.006	0.012	7.66E-05	0.010	4.99E-04	0.030	2734
ρ_3	0.007	0.013	7.77E-05	0.011	3.30E-04	0.029	3870
ρ_4	0.005	0.013	8.07E-05	0.011	3.65E-04	0.030	3703
ρ_5	0.006	0.011	6.16E-05	0.009	2.25E-04	0.027	3615
ρ_6	0.007	0.012	7.56E-05	0.010	2.03E-04	0.030	4063

ρ_7	0.006	0.013	8.43E-05	0.011	2.88E-04	0.031	3760
ρ_8	0.006	0.014	9.64E-05	0.012	3.83E-04	0.033	3805
ρ_9	0.009	0.016	1.27E-04	0.013	2.38E-04	0.038	3464
ρ_{10}	0.010	0.016	1.31E-04	0.014	1.70E-04	0.039	3775
ρ_{11}	0.011	0.023	2.76E-04	0.020	4.46E-04	0.055	3142
ρ_{12}	0.016	0.027	3.57E-04	0.023	8.41E-04	0.064	4189
ρ_{13}	0.014	0.029	4.00E-04	0.024	5.56E-04	0.068	4006
ρ_{14}	0.016	0.031	4.69E-04	0.026	5.96E-04	0.073	3681
ρ_{15}	0.018	0.033	5.30E-04	0.028	1.39E-03	0.078	3355
ρ_{16}	0.018	0.033	5.14E-04	0.028	9.97E-04	0.078	3950
ρ_{17}	0.020	0.036	6.36E-04	0.030	6.08E-04	0.086	3367
ρ_{18}	0.019	0.037	6.70E-04	0.032	1.35E-03	0.089	3877
ρ_{19}	0.100	0.112	1.97E-03	0.106	0.0362	0.203	5714
ρ_{20}	0.023	0.042	8.51E-04	0.036	4.64E-04	0.100	4088
ρ_{21}	0.020	0.042	8.49E-04	0.035	6.63E-04	0.098	3718
ρ_{22}	0.022	0.044	9.75E-04	0.037	1.05E-03	0.103	3508
ρ_{23}	0.027	0.045	9.37E-04	0.038	2.15E-03	0.107	3715
ρ_{24}	0.027	0.043	8.89E-04	0.037	1.06E-03	0.102	3496
ρ_{25}	0.017	0.033	5.22E-04	0.027	5.22E-04	0.077	3671
ρ_{26}	0.016	0.032	5.12E-04	0.027	6.96E-04	0.076	3732
ρ_{27}	0.016	0.032	4.80E-04	0.027	7.74E-04	0.074	3571
ρ_{28}	0.019	0.031	4.83E-04	0.026	5.47E-04	0.072	3778
ρ_{29}	0.014	0.026	3.23E-04	0.022	4.96E-04	0.061	3946
ρ_{30}	0.012	0.025	3.28E-04	0.021	5.06E-04	0.060	3679
ρ_{31}	0.012	0.024	2.85E-04	0.020	8.94E-04	0.057	3715
ρ_{32}	0.013	0.023	2.75E-04	0.020	4.31E-04	0.055	3757
ρ_{33}	0.012	0.022	2.55E-04	0.018	1.76E-04	0.053	3889
ρ_{34}	0.011	0.021	2.26E-04	0.018	5.06E-04	0.051	3929
ρ_{35}	0.010	0.020	1.96E-04	0.017	5.17E-04	0.047	4032
ρ_{36}	0.010	0.020	1.88E-04	0.016	5.17E-04	0.046	4029
ρ_{37}	0.010	0.020	2.03E-04	0.017	3.62E-04	0.048	3671
ρ_{38}	0.008	0.019	1.78E-04	0.016	5.28E-04	0.045	4313
ρ_{39}	0.009	0.018	1.67E-04	0.015	3.92E-04	0.043	3480
ρ_{40}	0.010	0.018	1.58E-04	0.015	8.11E-04	0.043	4215
ρ_{41}	0.010	0.019	1.84E-04	0.016	5.57E-04	0.046	3190
ρ_{42}	0.010	0.018	1.65E-04	0.016	4.09E-04	0.044	3769
ρ_{43}	0.010	0.017	1.49E-04	0.015	4.68E-04	0.042	3950
ρ_{44}	0.012	0.023	2.66E-04	0.019	3.68E-04	0.055	3830
ρ_{45}	0.007	0.012	7.54E-05	0.010	3.30E-04	0.029	3898
ρ_{46}	0.005	0.012	7.26E-05	9.85E-03	1.61E-04	0.028	3836
ρ_{47}	0.005	9.12E-03	4.25E-05	7.63E-03	1.90E-04	0.022	3818
ρ_{48}	0.005	9.63E-03	4.57E-05	8.11E-03	2.22E-04	0.023	4133

ρ_{49}	0.004	7.76E-03	3.06E-05	6.53E-03	1.66E-04	0.019	3375
ρ_{50}	0.004	7.18E-03	2.73E-05	5.97E-03	1.24E-04	0.018	3986
ρ_{51}	0.003	7.10E-03	2.47E-05	6.11E-03	2.84E-04	0.017	4183
ρ_{52}	0.003	7.24E-03	2.63E-05	6.08E-03	1.79E-04	0.018	2807
ρ_{53}	0.005	7.44E-03	2.80E-05	6.19E-03	2.66E-04	0.018	3859
ρ_{54}	0.003	7.63E-03	3.00E-05	6.31E-03	1.52E-04	0.018	3871
ρ_{55}	0.004	7.38E-03	2.87E-05	6.11E-03	2.12E-04	0.018	3583
ρ_{56}	0.004	7.60E-03	2.90E-05	6.39E-03	1.99E-04	0.018	3597
ρ_{57}	0.003	6.45E-03	2.19E-05	5.32E-03	8.77E-05	0.016	3264
ρ_{58}	0.003	5.35E-03	1.44E-05	4.48E-03	1.70E-04	0.013	3861
ρ_{59}	0.002	4.68E-03	1.10E-05	3.93E-03	6.52E-05	0.011	3702
ρ_{60}	0.002	4.87E-03	1.20E-05	4.07E-03	9.37E-05	0.012	3823
ρ_{61}	0.002	4.51E-03	1.08E-05	3.73E-03	8.96E-05	0.011	3666
ρ_{62}	0.003	4.94E-03	1.31E-05	4.13E-03	1.11E-04	0.012	3414
ρ_{63}	0.003	5.07E-03	1.31E-05	4.26E-03	6.64E-05	0.012	3733
ρ_{64}	0.003	4.95E-03	1.30E-05	4.06E-03	1.33E-04	0.012	3537
ρ_{65}	0.002	4.90E-03	1.24E-05	4.04E-03	4.45E-05	0.012	3497
ρ_{66}	0.031	0.036	1.09E-04	0.034	0.018	0.057	4207
s	0.262	0.263	9.60E-04	0.262	0.203	0.324	5479
δ	18.679	19.053	1.657	18.994	16.650	21.643	479
R_1	0.656	0.952	0.233	0.866	0.186	1.896	13430
R_2	0.714	0.957	0.223	0.880	0.196	1.890	12137
R_3	0.709	0.955	0.222	0.876	0.213	1.889	13705
R_4	0.672	0.960	0.226	0.876	0.201	1.905	13701
R_5	0.682	0.956	0.229	0.874	0.196	1.909	13705
R_6	0.686	0.964	0.236	0.878	0.194	1.941	13137
R_7	0.741	0.995	0.237	0.919	0.207	1.969	11872
R_8	0.783	1.015	0.209	0.948	0.245	1.907	4197
R_9	2.263	2.286	0.090	2.268	1.708	2.865	502
R_{10}	0.959	0.961	0.010	0.957	0.768	1.148	1921
R_{11}	0.651	0.659	0.011	0.655	0.456	0.862	4292
R_{12}	1.544	1.570	0.022	1.561	1.287	1.867	2729
R_{13}	0.759	0.778	0.020	0.776	0.509	1.051	695
R_{14}	1.133	1.133	0.008	1.132	0.956	1.309	1190
R_{15}	1.347	1.357	0.007	1.355	1.196	1.525	3333
r_{AC}	0.243	0.244	4.42E-04	0.244	0.200	0.283	13377
r_{AG}	1.226	1.222	3.40E-03	1.221	1.107	1.335	11685
r_{AT}	0.108	0.112	2.46E-04	0.112	0.083	0.144	13394
r_{CG}	0.243	0.243	4.74E-04	0.244	0.200	0.285	13705
r_{CT}	3.093	3.088	5.55E-03	3.089	2.938	3.232	13705
r_{GT}	1.083	1.091	2.93E-03	1.090	0.987	1.198	12969
α	0.956	1.066	0.1026	1.022	0.515	1.694	6493

p_{inv}	0.749	0.742	8.10E-04	0.744	0.685	0.794	5451
π_A	0.299	0.299	6.90E-06	0.299	0.294	0.304	13432
π_C	0.177	0.177	4.76E-06	0.177	0.173	0.181	13705
π_G	0.193	0.193	5.11E-06	0.193	0.188	0.197	13030
π_T	0.332	0.332	7.31E-06	0.332	0.327	0.337	13705
ucldMean	1.15E-03	1.15E-03	5.48E-09	1.15E-03	1.02E-03	1.30E-03	438
ucldStdev	1.229	1.228	3.82E-03	1.227	1.112	1.354	1791
rate.mean	1.11E-03	1.11E-03	2.19E-09	1.11E-03	1.01E-03	1.20E-03	158
rate.variance	3.72E-06	4.33E-06	1.51E-12	4.13E-06	2.27E-06	6.79E-06	621
c_v	1.650	1.696	0.0278	1.6829	1.3917	2.0323	753

Table 4: Summary statistics of the posterior densities of the parameters of the BDSKY multi-rho model.