MrBayes старотовый экран



Nexus - комманды

```
nc [dmitry@dmitry-F80Q]:/
  Commands that should be in a NEXUS file (data
  block, trees block or taxa block) include:
  Begin
                 -- Denotes beginning of block in file
  Dimensions
                  -- Defines size of character matrix
  Fnd
                   -- Denotes end of a block in file
  Endblock
                   -- Alternative way of denoting end of a block
  Format
                   -- Defines character format in data block
  Matrix
                  -- Defines matrix of characters in data block
  Taxlabels
                   -- Defines taxon labels
  Translate
                   -- Defines alternative names for taxa
  Tree
                   -- Defines a tree
  Note that this program supports the use of the shortest unambiguous
  spelling of the above commands (e.g., "exe" instead of "execute").
MrBayes >
```

Входной файл 1

```
☐ mc [dmitry@dmitry-F80Q]:~/Data/renat
                                         1/1033 * *(0 /866741b) 0035 0x02[*]
#NEXUS
[created with the loop/stem utility]
begin data;
    --->dimensions ntax=64 nchar=11949:
      ->format datatype=dna gap=- missing=?:
                      4Замена 5Копия 6Пер~ть 7Поиск 8Уда~ть 9МенюМС10Выход
```

Входной файл 2

```
mc [dmitrv@dmitrv-F80O]:~/Data/renat
     ->2JX08-45 <---->ACGCTTAACAACAAAATCAGAGAAGAAGCAGACGCGTCAATTGCAAAACAAAAATGTAACACCCCTACAAT
----->[Define pairs for the doublet model]
               74:169, 75:168, 76:167, 77:166, 79:164, 87:156, 88:155, 89:154,
               90:153. 91:152. 92:151. 93:150. 94:149. 95:148. 109:136. 110:135...
               111:134, 112:133, 113:132, 114:131, 116:129, 117:128, 200:210, 201:209,
               232:274. 233:273. 234:272. 236:268. 237:267. 238:266. 245:259. 246:258...
               296:11808, 297:11807, 303:11806, 304:11805, 309:11801, 310:11800, 311:11799, 315
               358:376. 387:11571. 388:11570. 389:11569. 390:11568. 391:11567. 392:11566. 393:11
               436:493, 437:492, 438:491, 439:488, 440:487, 441:486, 442:485, 444:483,
               445:482, 447:480, 448:479, 454:472, 455:471, 456:470, 457:469, 459:468,
               507:11530, 508:11529, 509:11528, 510:11527, 511:11526, 512:11525, 513:11521, 514:
               531:718. 533:715. 534:714. 535:713. 537:710. 538:709. 539:708. 540:707...
               563:633, 564:632, 565:631, 566:630, 568:628, 569:627, 573:623, 574:622,
               642:650, 643:649, 644:648, 658:681, 659:680, 660:679, 661:678, 662:677,
            х~ить ЗБлок
                           4Замена 5Копия 6Пер~ить 7Поиск 8Улалить 9МенюМС 10Выхол
```

Входной файл - команды для MrBayes

```
mc [dmitry@dmitry-F80Q]:~/Data/renat
                 <u>11596 11597 11598 1</u>1599 11608 11609 11611 11612 11613 11614 11620 11621 11622
                 11634 11635 11636 11639 11640 11641 11642 11651 11652 11653 11654 11655 11656
                 11665 11671 11672 11673 11681 11682 11683 11684 11686 11687 11697 11698 11699
                 11709 11711 11712 11713 11714 11720 11721 11722 11729 11730 11731 11737 11738
                 11759 11760 11761 11762 11763 11786 11787 11788 11789 11791 11792 11793 11794
                 11808 11809 11810 11811 11812 11814 11815 11816 11820 11821 11822 11829 11830
----->set nowarn=ves:
 ----->[Define partitions]
----->set partition = smart:
Model taking into account possible co-evilution in stems ------1
----->lset applyto=(1) nucmodel=doublet:
 ----->mcmc nruns=2 nchains=1 ngen=2000000 file=loops.mb:
 ----->sumt burnin=10000:
 ----->sump burnin=10000;
 ----->sumt burnin=10000;
----->sump burnin=10000:
end:
1Помошь 2Сох~ить 3Блок
                           43амена 5Копия 6Пер~ить 7Поиск 8Удалить 9МенюМС
```

Работа программы

```
mc [dmitry@dmitry-F80Q]:~/Data/renat
        Chain 3 -- -1777.393537 -- 41.533077
        Chain 4 -- -1808.374908 -- 41.533077
     Using a relative burnin of 25.0 % for diagnostics
     Chain results (500000 generations requested):
         0 -- [-1795.659] (-1781.329) (-1741.670) (-1797.612) * [-1730.201] (-1771.454) (-1777.3
94) (-1808.375)
       500 -- (-1431.199) (-1426.961) (-1444.689) [-1424.099] * (-1433.346) (-1413.450) [-1416.8
70] (-1413.578) -- 0:16:38
      1000 -- (-1389.280) (-1411.758) [-1399.630] (-1418.725) * (-1396.991) (-1416.413) [-1374.4
631 (-1381.750) -- 0:16:37
      1500 -- [-1365.174] (-1387.890) (-1363.084) (-1374.242) * (-1355.240) (-1389.716) [-1347.3
75] (-1349.238) -- 0:16:36
      2000 -- (-1331,495) (-1380,664) [-1334,979] (-1349,584) * (-1345,539) (-1358,087) (-1346,2
49) [-1332.884] -- 0:16:35
      2500 -- (-1315.563) (-1324.580) [-1323.708] (-1326.693) * (-1341.673) (-1338.132) [-1311.1
17] (-1319.454) -- 0:16:34
      3000 -- [-1312.270] (-1296.969) (-1323.540) (-1307.936) * (-1325.058) (-1332.783) (-1304.5
17) [-1286.098] -- 0:16:33
      3500 -- (-1285, 361) [-1286, 797] (-1300, 200) (-1298, 024) * (-1323, 671) (-1314, 144) (-1290, 5
74) [-1279.597] -- 0:16:32
      4000 -- [-1273.000] (-1292.349) (-1290.957) (-1286.588) * (-1300.242) (-1301.603) (-1288.7
19) [-1278.337] -- 0:16:31
      4500 -- [-1259.029] (-1272.175) (-1280.718) (-1282.459) * (-1279.207) [-1272.463] (-1277.3
66) (-1265.798) -- 0:16:30
      5000 -- [-1248.841] (-1266.956) (-1276.093) (-1273.178) * (-1277.992) [-1270.027] (-1274.7
05) (-1263.001) -- 0:16:29
     Average standard deviation of split frequencies: 0.108030
      5500 -- [-1246.005] (-1274.674) (-1268.075) (-1269.107) * (-1287.618) (-1264.607) [-1261.7]
771 (-1265,167) -- 0:16:28
```

завершение анализа

```
mc idmitrv@dmitrv-F80O1:~/Data/renat
587) [-1242.723] -- 0:00:14
      493500 -- [-1238.924] (-1253.936) (-1237.608) (-1243.823) * (-1234.175) [-1233.514] (-1238.
244) (-1235.872) -- 0:00:13
      494000 -- [-1235,492] (-1238,025) (-1247,655) (-1251,338) * (-1240,197) (-1244,204) (-1236,
716) [-1236.304] -- 0:00:12
      494500 -- (-1234.804) (-1245.597) [-1235.088] (-1246.440) * (-1230.840) (-1244.946) [-1240.
5941 (-1237.807) -- 0:00:11
      495000 -- (-1230.552) (-1239.078) [-1238.693] (-1256.402) * [-1234.853] (-1254.510) (-1236.
884) (-1235, 106) -- 0:00:10
      Average standard deviation of split frequencies: 0.007306
      495500 -- (-1242.760) (-1238.937) [-1241.213] (-1243.814) * (-1238.797) (-1239.914) (-1244.
720) [-1235.012] -- 0:00:09
      496000 -- (-1241.200) [-1232.956] (-1243.373) (-1245.550) * (-1232.398) (-1266.981) [-1242.
5301 (-1234.680) -- 0:00:08
      496500 -- (-1231.555) [-1234.590] (-1235.161) (-1244.621) * [-1240.347] (-1240.433) (-1245.
935) (-1234.435) -- 0:00:07
      497000 -- (-1237.697) (-1233.934) [-1234.630] (-1250.061) * (-1238.360) (-1237.671) (-1247.
628) [-1231.662] -- 0:00:06
      497500 -- (-1250.320) [-1234.912] (-1244.369) (-1250.735) * (-1230.575) [-1231.433] (-1244.
598) (-1237.339) -- 0:00:05
      498000 -- (-1254,175) (-1243,721) (-1241,866) [-1244,773] * [-1238,031] (-1239,060) (-1251,
927) (-1233.847) -- 0:00:04
      498500 -- (-1246.839) (-1239.467) (-1235.916) [-1246.559] * [-1236.945] (-1238.356) (-1246.
444) (-1238,486) -- 0:00:03
      499000 -- (-1238.776) (-1241.762) (-1243.222) [-1244.091] * (-1251.189) [-1236.644] (-1244.
418) (-1246.113) -- 0:00:02
      499500 -- (-1239.531) [-1244.638] (-1246.311) (-1239.048) * (-1244.222) (-1237.778) (-1254.
480) [-1240.568] -- 0:00:01
      500000 -- [-1230.194] (-1236.677) (-1234.771) (-1237.302) * (-1236.631) (-1241.170) (-1243.
139) [-1239.183] -- 0:00:00
      Average standard deviation of split frequencies: 0.007532
      Continue with analysis? (yes/no):
```

Тестируемые предположения

SHapept	OUTIOIM/Exhousuriai/Lived
Ratecorrpr	Uniform/Fixed
Pinvarpr	Uniform/Fixed
Covswitchpr	Uniform/Exponential/Fixed
Symdirihyperpr	Uniform/Exponential/Fixed
Topologypr	Uniform/Constraints/Fixed
Brlenspr	Unconstrained/Clock/Fixed
Treeagepr	Exponential/Gamma/Fixed
Speciationpr	Uniform/Exponential/Fixed

Uniform(0.0,1.0)
Uniform(0.0,1.0)
Uniform(0.0,1.0)
Uniform(0.0,100.0)
Fixed(Infinity)
Uniform
Unconstrained:Exp(10.0)
Exponential(1.0)
Exponential(1.0)

constraints

>constraint golovanogi = golova nogi

>constraint nogolovanogi negative = golova nogi

включить топологическое ограничение:

>prset topologypr = constraints(golovanogi)

>mcmc

>sumr

>prset topologypr = constraints(nogolovanogi)

>mcmo

>sump

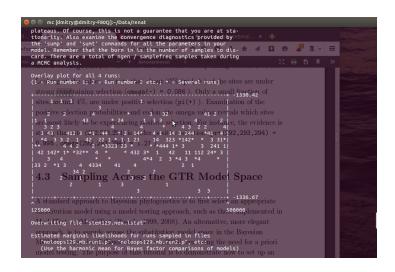
constraints

```
>constraint golovanogi = golova nogi
>constraint nogolovanogi negative = golova nogi
включить топологическое ограничение:
>prset topologypr = constraints(golovanogi)
>mcmc
>sump
>prset topologypr = constraints(nogolovanogi)
>mcmc
>sump
```

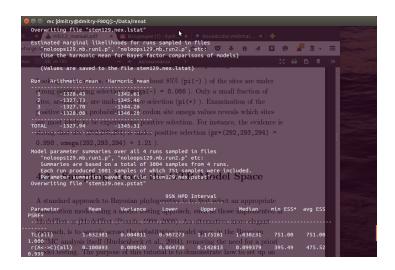
constraints

```
>constraint golovanogi = golova nogi
>constraint nogolovanogi negative = golova nogi
включить топологическое ограничение:
>prset topologypr = constraints(golovanogi)
>mcmc
>sump
>prset topologypr = constraints(nogolovanogi)
>mcmc
>sump
```

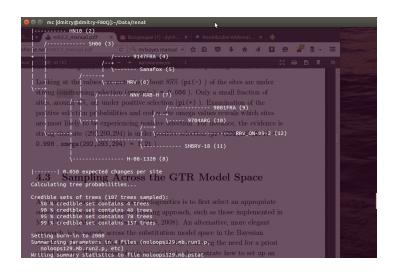
Оценка качества анализа



Результат



Дерево



BEAUTI & BEAST

