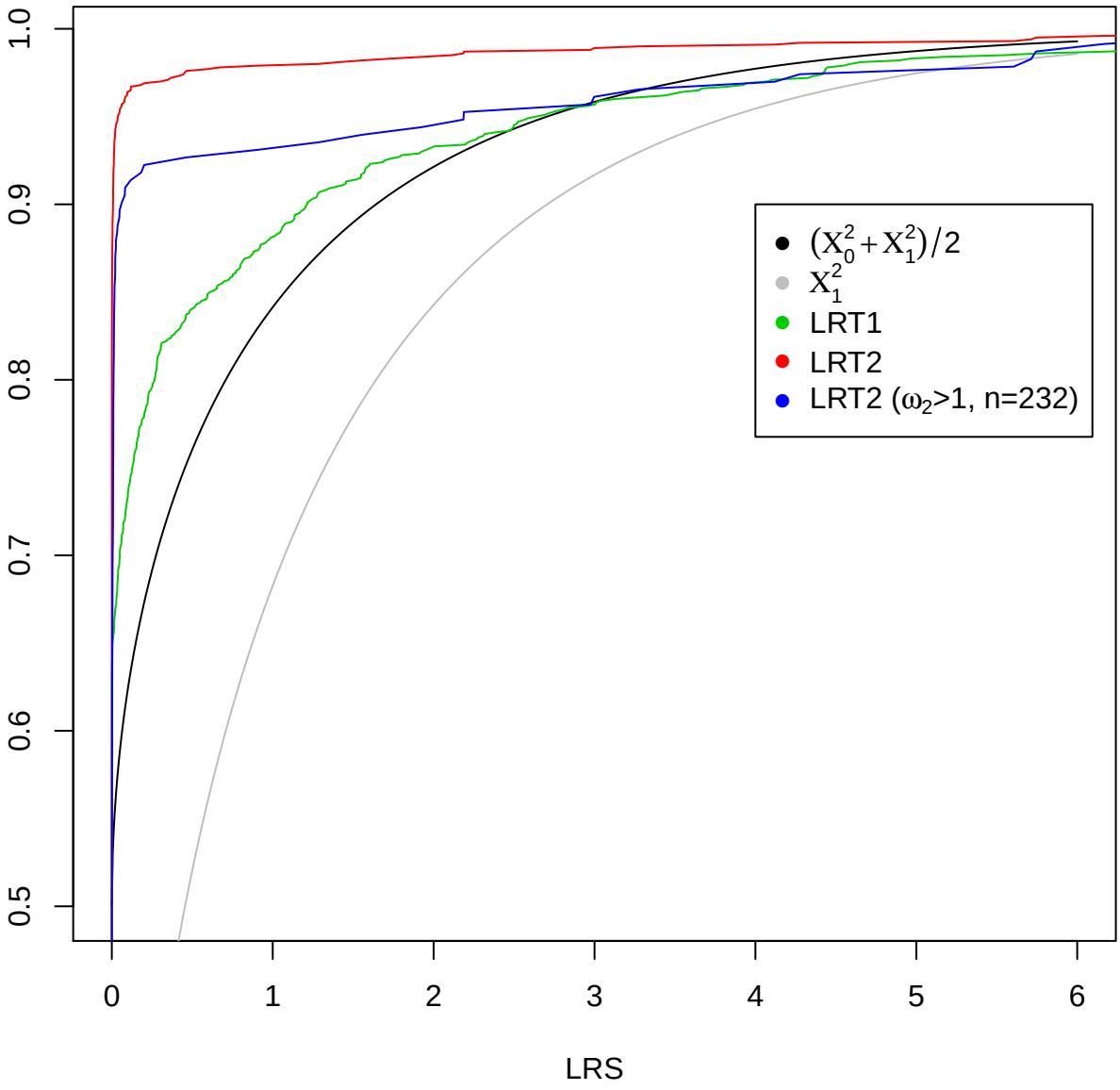
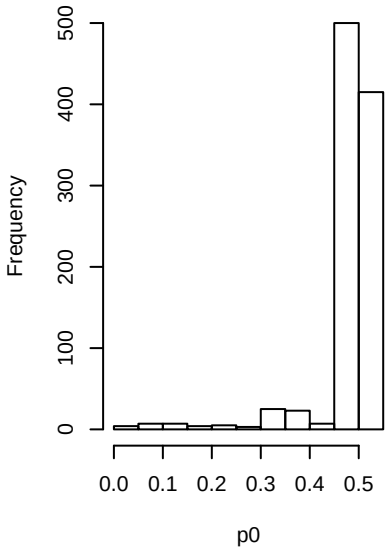
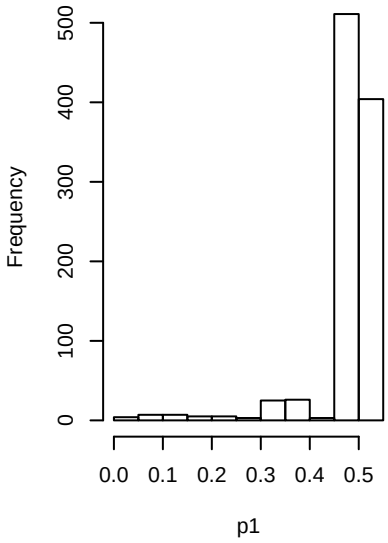
- Simulation under the null for branch-site model A
- 5000 codons
- Symmetric (ignoring branch lengths), 8-taxon tree with one foreground branch
  The total tree length is 6 (3 in previous sims) and now the foreground branch is 1/10th the length of the background branches.
  tree: (((A#1:0.0458015,B:0.458015):0.458015,(C:0.458015,D:0.458015):0.458015):0.458015,
  ((E:0.458015,F:0.458015):0.458015,(G:0.458015,H:0.458015):0.458015):0.458015);
- $\kappa = 2.0$ $p_0 = 0.5$ $p_1 = 0.5$ $\omega_0 = 0$

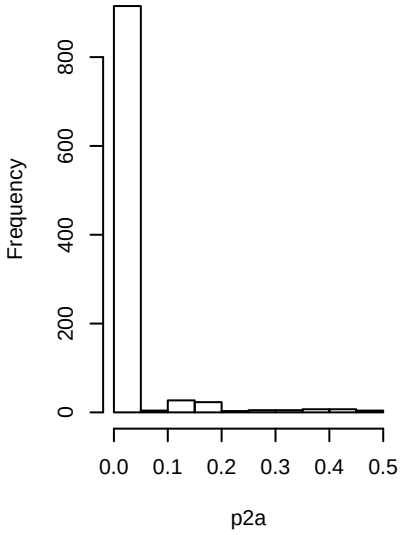
LR CDFs



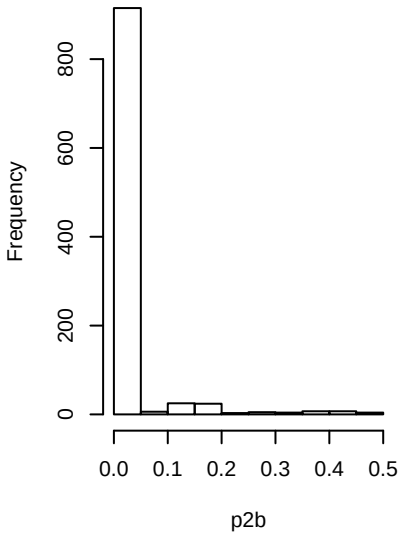
MLEs under Alternative

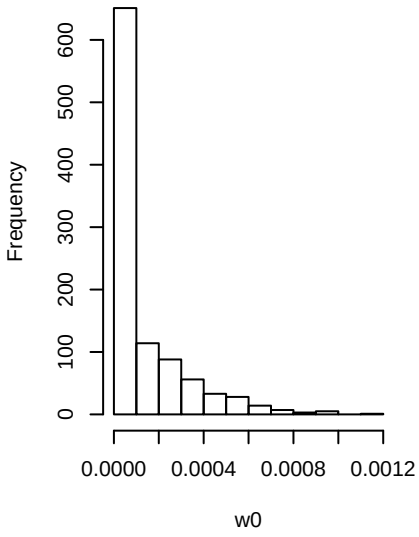


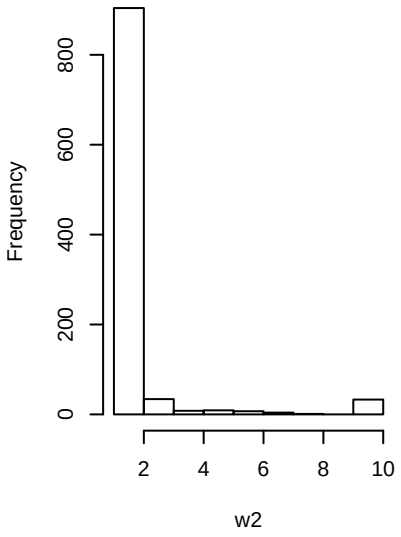




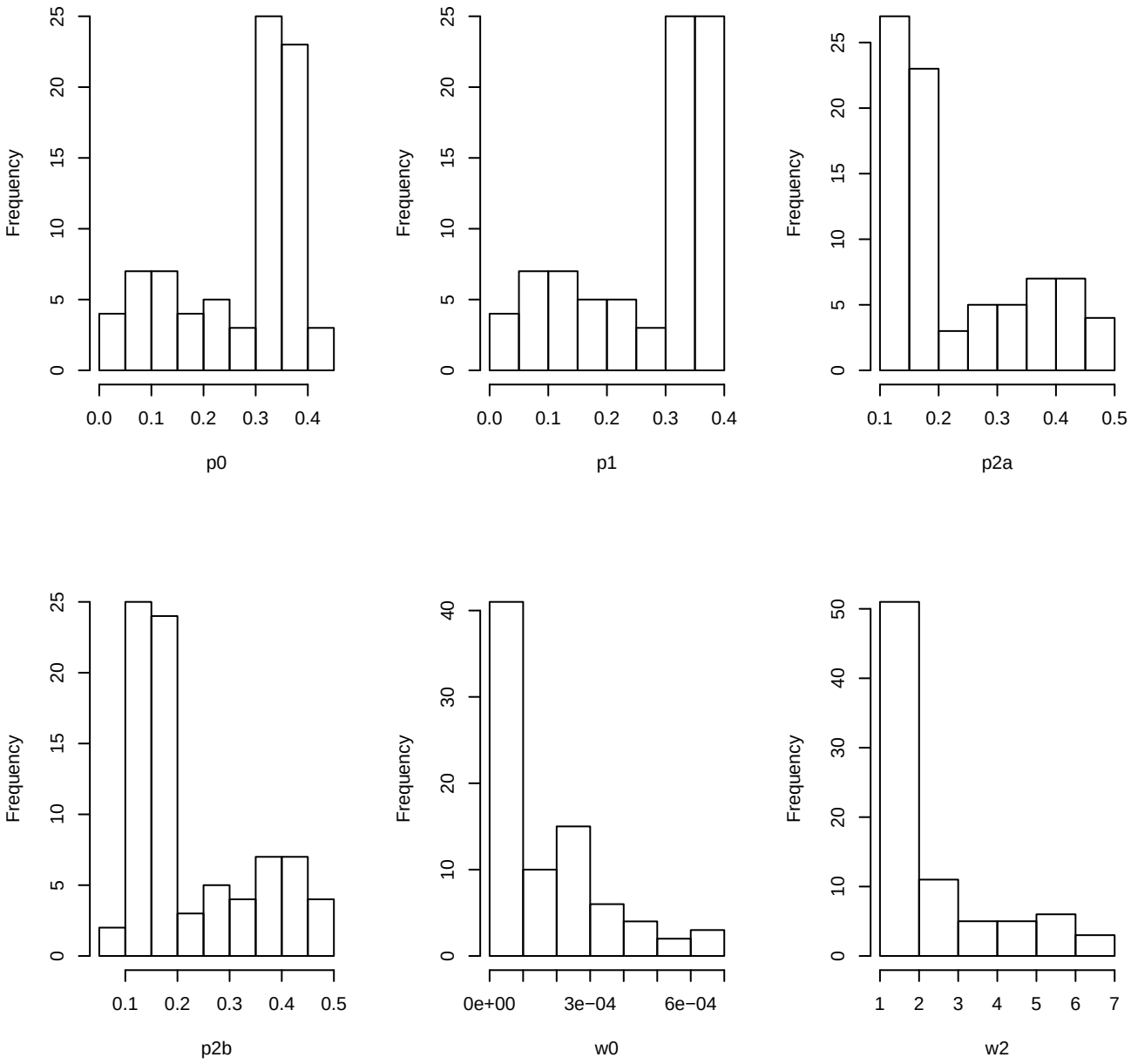
32 ω_2>= 10







These plots are for a subset of the data: $p2a > 0.1$ or $p2b > 0.1$.



```
> subset(params,w2>=10)
      p0       p1       p2a       p2b       w0          w2
0.50747  0.49227  0.00013  0.00013  0.00018   13.17148
0.48870  0.51093  0.00018  0.00019  0.00015  999.00000
0.50536  0.49464  0.00000  0.00000  0.00014   18.98596
0.50703  0.49296  0.00001  0.00001  0.00010   31.19575
0.50143  0.49633  0.00112  0.00111  0.00000   29.66478
0.50443  0.49555  0.00001  0.00001  0.00000   23.01739
0.50697  0.49303  0.00000  0.00000  0.00000   25.81588
0.49460  0.50540  0.00000  0.00000  0.00000   32.79931
0.50356  0.49543  0.00051  0.00050  0.00001   24.28210
0.49409  0.50588  0.00001  0.00001  0.00010   18.14854
0.50834  0.49107  0.00030  0.00029  0.00021   88.60212
0.49282  0.50643  0.00037  0.00038  0.00047   51.18785
0.49817  0.49918  0.00132  0.00132  0.00000   11.99442
0.49402  0.50556  0.00021  0.00021  0.00000   84.47536
0.49262  0.50688  0.00025  0.00025  0.00000   88.04776
0.49682  0.50233  0.00042  0.00043  0.00044   25.17260
0.49262  0.50701  0.00018  0.00019  0.00000  999.00000
0.50329  0.49504  0.00084  0.00083  0.00000   16.14985
0.50071  0.49894  0.00017  0.00017  0.00012   11.50677
0.50274  0.49725  0.00000  0.00000  0.00000   31.59949
0.49707  0.50183  0.00055  0.00055  0.00000   14.07986
0.49205  0.50784  0.00005  0.00006  0.00029   19.42556
0.49596  0.50404  0.00000  0.00000  0.00008   25.18345
0.50983  0.49017  0.00000  0.00000  0.00000   13.22519
0.50971  0.49029  0.00000  0.00000  0.00000   23.99565
0.50285  0.49618  0.00049  0.00048  0.00000   19.15881
0.49745  0.50112  0.00072  0.00072  0.00004   28.66388
0.50350  0.49596  0.00027  0.00027  0.00012   45.51805
0.50193  0.49782  0.00012  0.00012  0.00012   12.18804
0.50254  0.49746  0.00000  0.00000  0.00000   21.39871
0.49759  0.50167  0.00037  0.00037  0.00000   58.96461
0.49359  0.50550  0.00045  0.00046  0.00000   64.16664
```