

表 5.2: 在模型(5.6)的设置下, Langevin-Hastings 算法和 HMC 算法的比较

| | true(init) | mean | var | 2.5% | 25% | 50% | 75% | 97.5% | N | time(s) |
|------------|------------|-------|-------|--------|--------|-------|-------|-------|-----|---------|
| α | 0.5(1.201) | 0.527 | 0.418 | -0.759 | 0.189 | 0.514 | 0.855 | 1.864 | 36 | 642.66 |
| ϕ | 0.2(0.420) | 0.401 | 0.052 | 0.100 | 0.240 | 0.360 | 0.520 | 0.960 | | |
| σ^2 | 2.0(1.038) | 1.311 | 0.660 | 0.365 | 0.766 | 1.081 | 1.584 | 3.562 | | |
| α | 0.5(1.211) | 0.866 | 1.517 | -1.610 | 0.059 | 0.870 | 1.666 | 3.159 | 64 | 883.76 |
| ϕ | 0.2(0.480) | 0.682 | 0.073 | 0.300 | 0.480 | 0.640 | 0.820 | 1.380 | | |
| σ^2 | 2.0(2.232) | 3.932 | 2.594 | 1.667 | 2.800 | 3.642 | 4.744 | 7.740 | | |
| α | 0.5(0.189) | 0.323 | 0.657 | -1.449 | -0.124 | 0.416 | 0.812 | 1.831 | 100 | 1223.28 |
| ϕ | 0.2(0.540) | 0.617 | 0.085 | 0.220 | 0.400 | 0.560 | 0.785 | 1.320 | | |
| σ^2 | 2.0(1.395) | 1.479 | 0.498 | 0.545 | 0.941 | 1.352 | 1.822 | 3.195 | | |
| α | 0.5(0.335) | 0.483 | 0.310 | -0.608 | 0.094 | 0.488 | 0.851 | 1.613 | 36 | 11.25 |
| ϕ | 0.2(0.066) | 0.631 | 0.036 | 0.362 | 0.501 | 0.602 | 0.722 | 1.090 | | |
| σ^2 | 2.0(0.347) | 1.370 | 0.298 | 0.455 | 0.977 | 1.317 | 1.714 | 2.566 | | |
| α | 0.5(1.021) | 0.498 | 0.402 | -0.775 | 0.082 | 0.534 | 0.917 | 1.798 | 64 | 113.04 |
| ϕ | 0.2(0.370) | 0.385 | 0.003 | 0.285 | 0.343 | 0.380 | 0.422 | 0.509 | | |
| σ^2 | 2.0(2.610) | 2.473 | 0.292 | 1.585 | 2.102 | 2.416 | 2.804 | 3.734 | | |
| α | 0.5(0.613) | 0.400 | 0.297 | -0.723 | 0.062 | 0.415 | 0.767 | 1.412 | 100 | 272.58 |
| ϕ | 0.2(0.294) | 0.299 | 0.005 | 0.181 | 0.243 | 0.289 | 0.343 | 0.465 | | |
| σ^2 | 2.0(1.724) | 1.146 | 0.206 | 0.525 | 0.824 | 1.037 | 1.395 | 2.282 | | |