Overview of figures and tables CIR_alpha_1_beta_1_sigma_2_x0_10

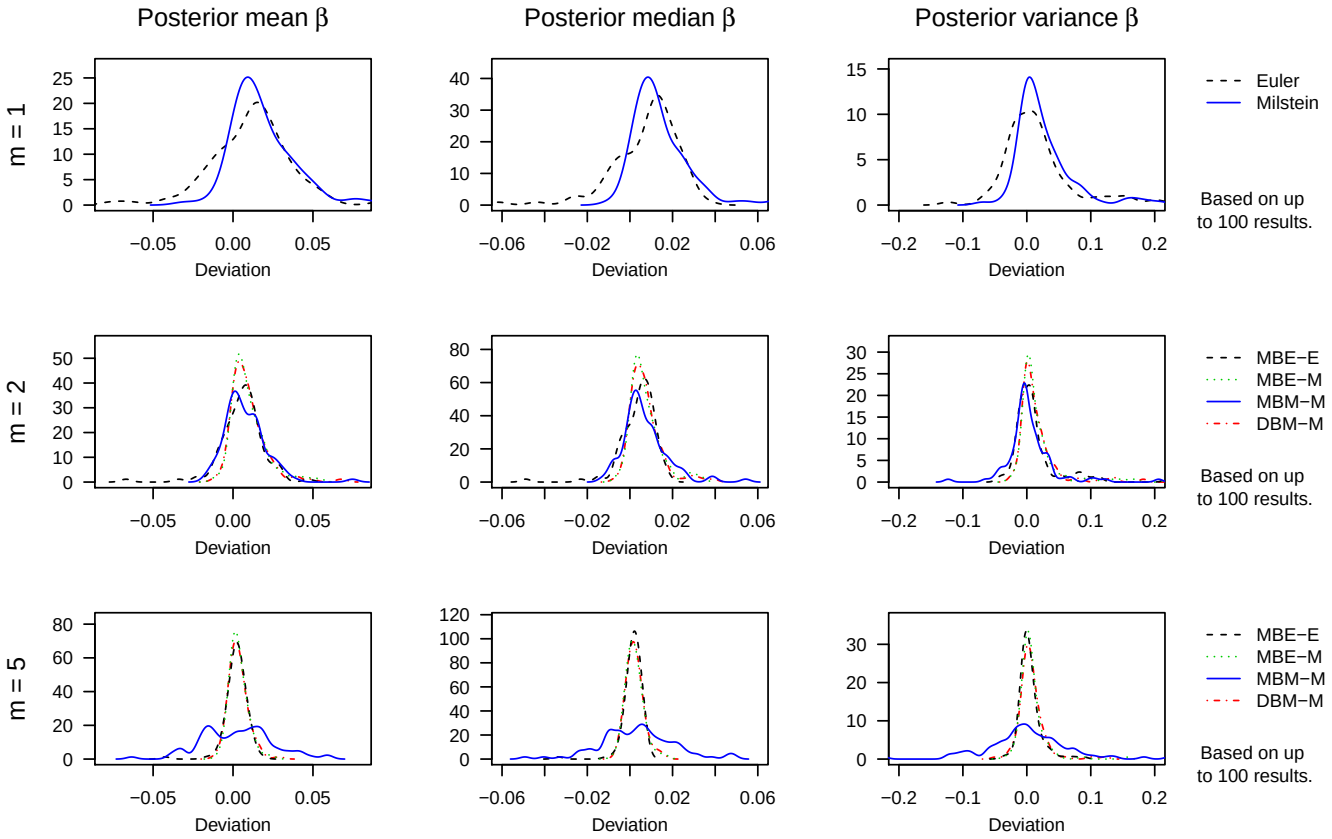
This document provides the same kind of figures and tables as the section "Results" of the article

Pieschner, Fuchs (2020) Bayesian inference for diffusion processes: using higher-order approximations for transition densities

for model and parameter combination CIR_alpha_1_beta_1_sigma_2_x0_10 and for different numbers M of observations.

M = 10

Density plots of discrepancies



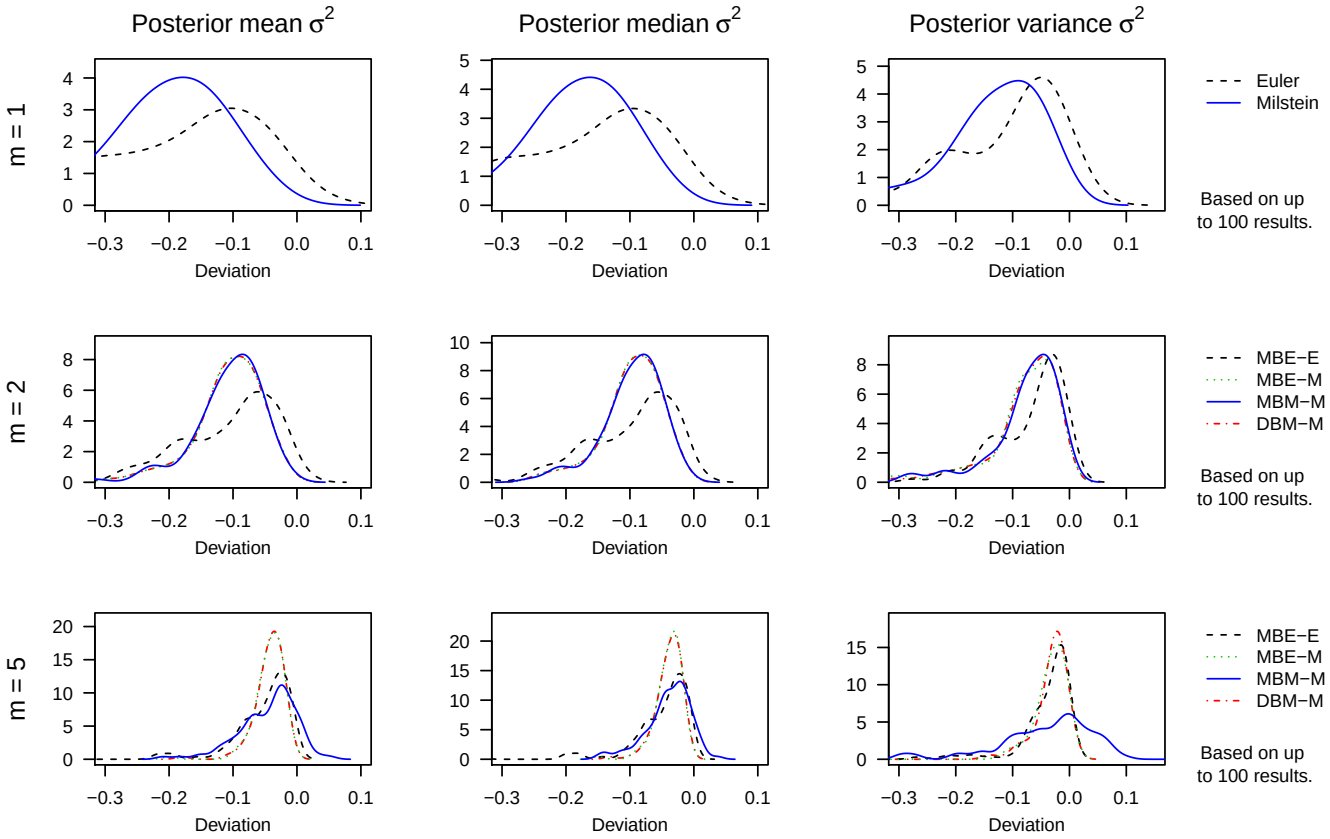

Posterior mean σ2
Posterior median σ2
Posterior variance σ2
m = 1
m = 2
m = 5
Deviation
Euler
Milstein
MBE−E
MBE−M
MBM−M
DBM−M
Based on up to 100 results.

Table of RMSE

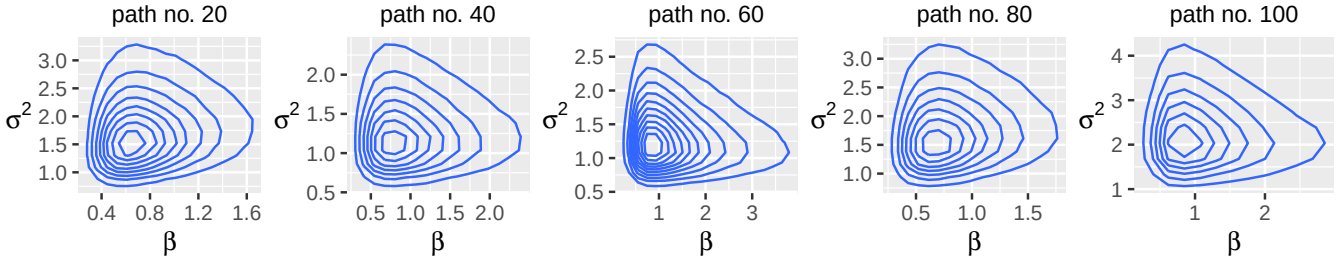
	mean_beta	median_beta	variance_beta	mean_sigma2	median_sigma2	variance_sigma2
Euler_m_1	0.027	0.017	0.074	0.289	0.267	0.227
Milstein_m_1	0.031	0.020	0.099	0.234	0.212	0.200
MBE-E_m_2	0.015	0.010	0.039	0.168	0.154	0.146
MBE-M_m_2	0.015	0.010	0.043	0.118	0.107	0.112
MBM-M_m_2	0.015	0.013	0.047	0.118	0.107	0.109
DBM-M_m_2	0.015	0.010	0.046	0.119	0.107	0.113
MBE-E_m_5	0.007	0.005	0.018	0.079	0.071	0.081
MBE-M_m_5	0.006	0.004	0.022	0.050	0.044	0.058
MBM-M_m_5	0.022	0.018	0.091	0.064	0.053	0.119
DBM-M_m_5	0.007	0.005	0.022	0.049	0.044	0.056

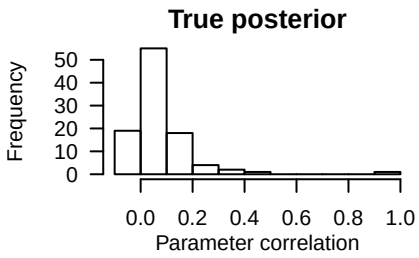
Table of performance measures

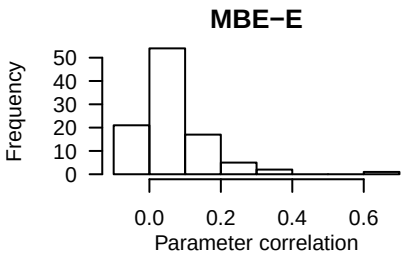
	numIter_mean	numIter_cv	multESS_mean	multESS_cv
Euler_m_1	24240659	0.14	2347148	0.16
Milstein_m_1	7769951	0.08	750905	0.11
MBE-E_m_2	8631493	0.05	544853	0.09
MBE-M_m_2	2946598	0.03	178500	0.11
MBM-M_m_2	209137	0.07	13415	0.14
DBM-M_m_2	2834793	0.05	177950	0.11
MBE-E_m_5	7038064	0.03	183744	0.09
MBE-M_m_5	1610654	0.02	39845	0.10
MBM-M_m_5	41151	0.08	986	0.19
DBM-M_m_5	1580017	0.04	40505	0.12

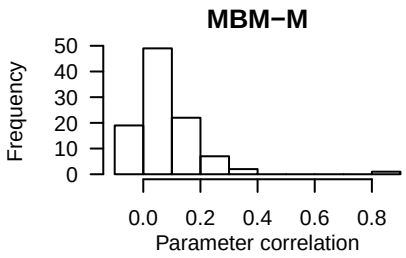
	ARpath_mean	ARpath_cv	ARparam_mean	ARparam_cv
Euler_m_1	0.503	0.03	NA	NA
Milstein_m_1	0.501	0.04	NA	NA
MBE-E_m_2	0.457	0.03	0.947	0.02
MBE-M_m_2	0.456	0.04	0.938	0.02
MBM-M_m_2	0.456	0.04	1.000	0.00
DBM-M_m_2	0.456	0.04	0.954	0.01
MBE-E_m_5	0.349	0.03	0.965	0.01
MBE-M_m_5	0.348	0.03	0.951	0.02
MBM-M_m_5	0.348	0.04	0.986	0.00
DBM-M_m_5	0.348	0.03	0.965	0.01

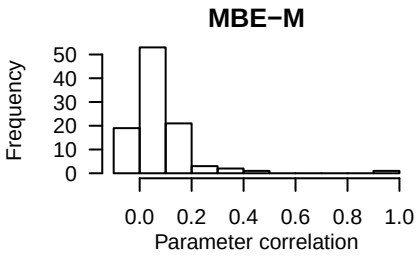
Parameter correlations

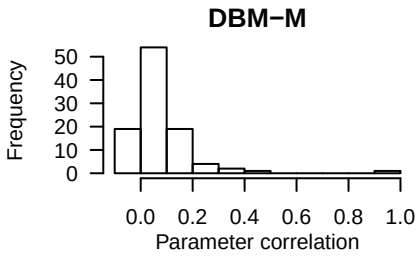












M = 20

Density plots of discrepancies

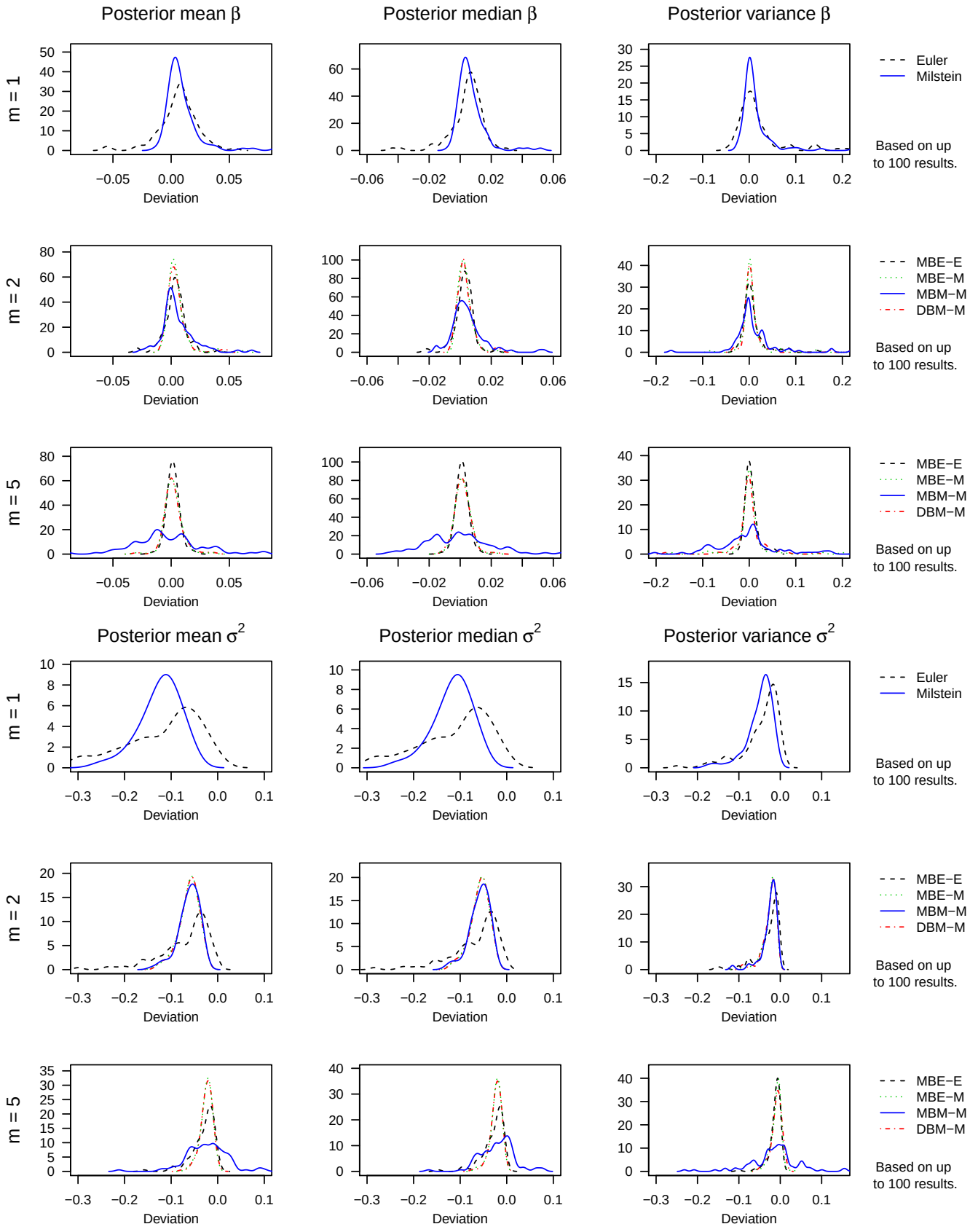


Table of RMSE

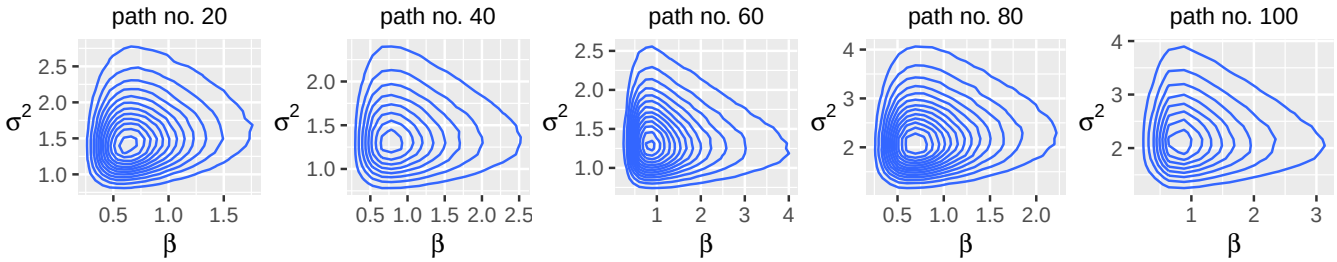
	mean_beta	median_beta	variance_beta	mean_sigma2	median_sigma2	variance_sigma2
Euler_m_1	0.018	0.012	0.048	0.160	0.153	0.067
Milstein_m_1	0.017	0.011	0.059	0.131	0.123	0.060
MBE-E_m_2	0.010	0.006	0.026	0.091	0.086	0.042
MBE-M_m_2	0.010	0.006	0.041	0.066	0.062	0.031
MBM-M_m_2	0.015	0.012	0.046	0.066	0.062	0.033
DBM-M_m_2	0.010	0.006	0.033	0.065	0.062	0.031
MBE-E_m_5	0.005	0.004	0.014	0.040	0.038	0.019
MBE-M_m_5	0.008	0.005	0.038	0.027	0.026	0.016
MBM-M_m_5	0.031	0.020	0.110	0.051	0.042	0.061
DBM-M_m_5	0.009	0.005	0.032	0.027	0.026	0.016

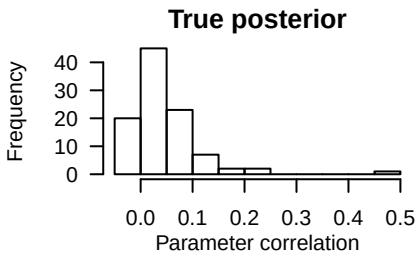
Table of performance measures

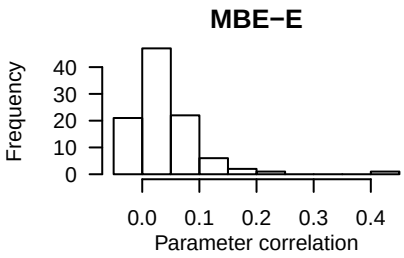
	numIter_mean	numIter_cv	multESS_mean	multESS_cv
Euler_m_1	23461023	0.11	2422521	0.14
Milstein_m_1	4685450	0.03	480549	0.08
MBE-E_m_2	8482241	0.06	422034	0.10
MBE-M_m_2	1944229	0.05	94071	0.10
MBM-M_m_2	186588	0.06	9429	0.13
DBM-M_m_2	1905354	0.04	95262	0.10
MBE-E_m_5	6851197	0.05	114344	0.10
MBE-M_m_5	966579	0.04	15599	0.13
MBM-M_m_5	37648	0.12	574	0.25
DBM-M_m_5	906791	0.08	14881	0.14

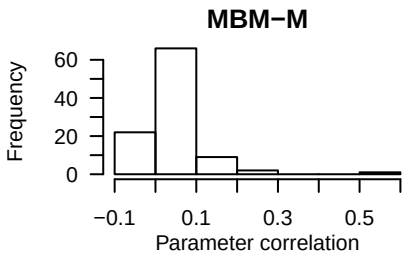
	ARpath_mean	ARpath_cv	ARparam_mean	ARparam_cv
Euler_m_1	0.443	0.03	NA	NA
Milstein_m_1	0.442	0.03	NA	NA
MBE-E_m_2	0.384	0.03	0.964	0.01
MBE-M_m_2	0.383	0.03	0.957	0.01
MBM-M_m_2	0.383	0.03	1.000	0.00
DBM-M_m_2	0.383	0.03	0.968	0.01
MBE-E_m_5	0.272	0.03	0.976	0.01
MBE-M_m_5	0.272	0.03	0.965	0.01
MBM-M_m_5	0.272	0.03	0.993	0.00
DBM-M_m_5	0.272	0.03	0.975	0.01

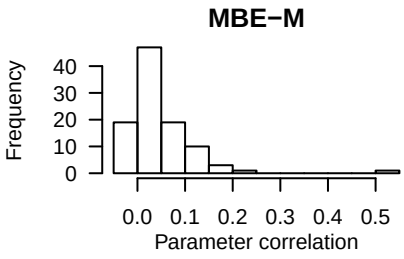
Parameter correlations

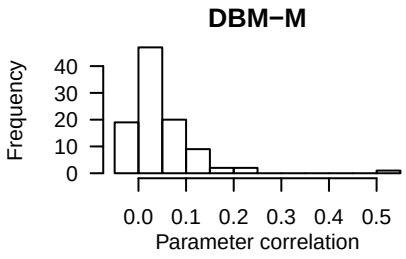












M = 50

Density plots of discrepancies

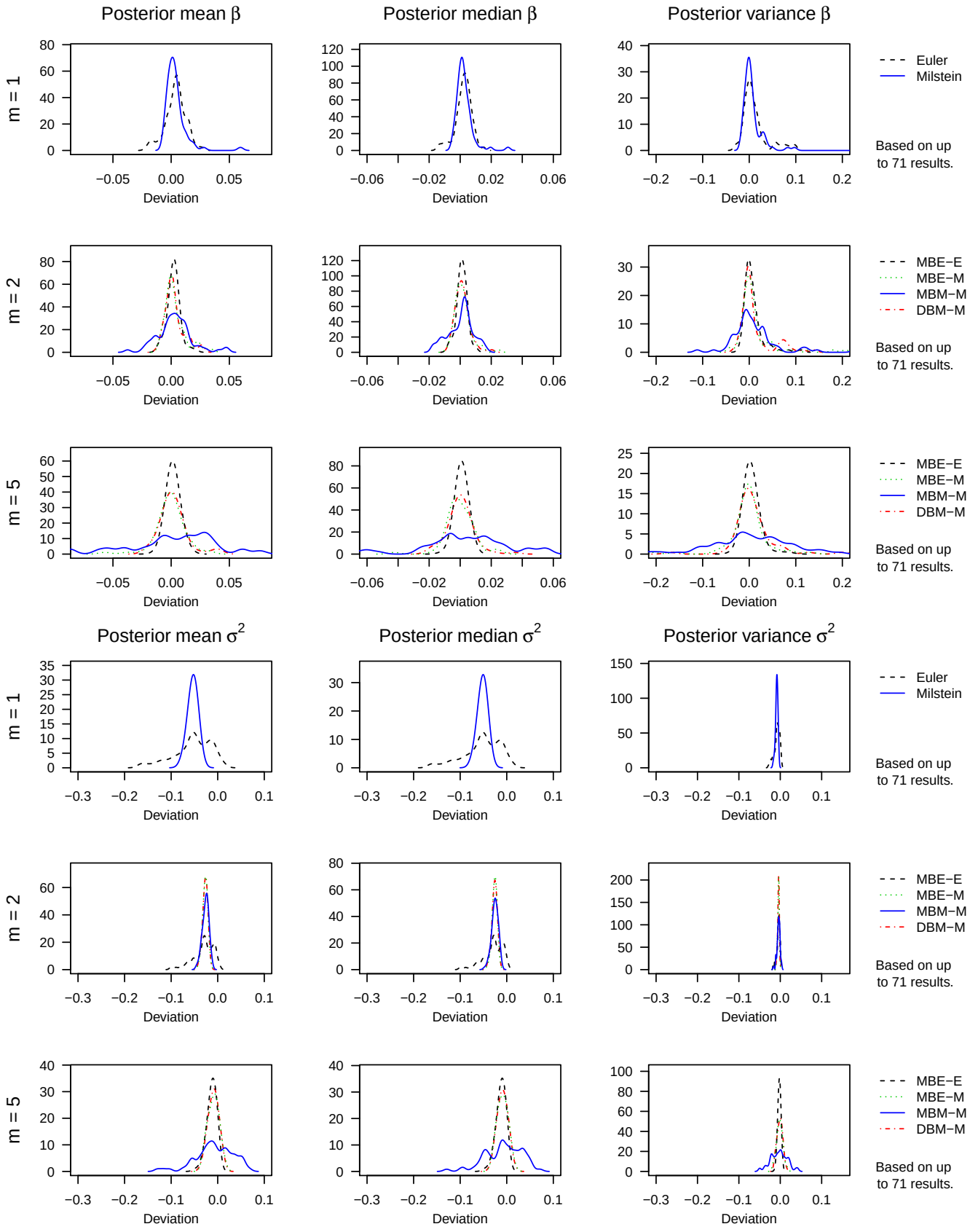


Table of RMSE

	mean_beta	median_beta	variance_beta	mean_sigma2	median_sigma2	variance_sigma2
Euler_m_1	0.010	0.006	0.030	0.068	0.067	0.011
Milstein_m_1	0.010	0.006	0.039	0.054	0.053	0.009
MBE-E_m_2	0.006	0.003	0.023	0.038	0.037	0.006
MBE-M_m_2	0.010	0.006	0.043	0.027	0.026	0.005
MBM-M_m_2	0.015	0.008	0.067	0.027	0.026	0.006
DBM-M_m_2	0.009	0.005	0.036	0.027	0.027	0.005
MBE-E_m_5	0.005	0.003	0.017	0.016	0.016	0.003
MBE-M_m_5	0.013	0.009	0.062	0.014	0.014	0.007
MBM-M_m_5	0.043	0.032	0.127	0.041	0.040	0.020
DBM-M_m_5	0.012	0.009	0.043	0.014	0.014	0.006

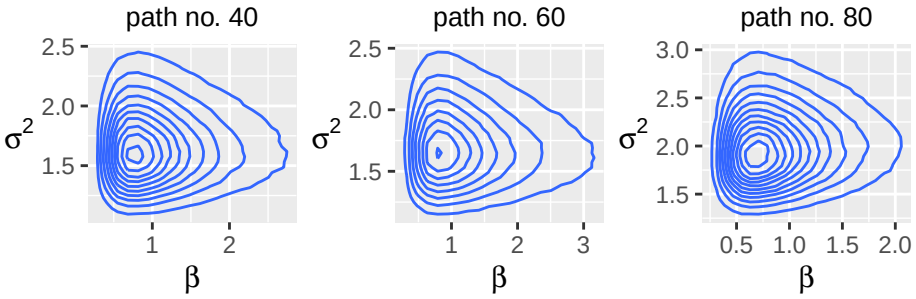
Table of performance measures

	numIter_mean	numIter_cv	multESS_mean	multESS_cv
Euler_m_1	23058561	0.08	2232636	0.11
Milstein_m_1	2218768	0.07	213333	0.10
MBE-E_m_2	7772105	0.05	238753	0.10
MBE-M_m_2	946014	0.05	28058	0.11
MBM-M_m_2	167027	0.04	5005	0.13
DBM-M_m_2	964354	0.05	29219	0.11
MBE-E_m_5	6004468	0.06	52645	0.12
MBE-M_m_5	439282	0.05	3739	0.16
MBM-M_m_5	35401	0.08	318	0.39
DBM-M_m_5	435053	0.07	3729	0.16

	ARpath_mean	ARpath_cv	ARparam_mean	ARparam_cv
Euler_m_1	0.344	0.03	NA	NA
Milstein_m_1	0.343	0.03	NA	NA
MBE-E_m_2	0.279	0.03	0.978	0.01
MBE-M_m_2	0.279	0.03	0.973	0.01
MBM-M_m_2	0.279	0.03	1.000	0.00
DBM-M_m_2	0.279	0.03	0.979	0.00
MBE-E_m_5	0.184	0.03	0.985	0.00
MBE-M_m_5	0.184	0.03	0.978	0.01
MBM-M_m_5	0.184	0.03	0.997	0.00
DBM-M_m_5	0.184	0.03	0.985	0.00

Parameter correlations

```
## Error in gzfile(file, "rb") : cannot open the connection
## Error in gzfile(file, "rb") : cannot open the connection
```




```
## NULL
```