Tables of simulation results

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Notes:

- Download the LaTeXsource from this link.
- Highlighted in red are the cells where the rejection rate is significantly different from the nominal level.

Simple random sampling

Type I errors ($n = 500$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	3	0.109	0.061	0.013
WaldVCF	1000	1000	3	0.109	0.059	0.013
WaldDiag,MM3	1000	1000	3	0.039	0.015	0.003
Pearson,MM3	1000	1000	3	0.105	0.049	0.012
RSS,MM3	1000	1000	3	0.108	0.050	0.012
Multn,MM3	1000	1000	3	0.105	0.049	0.012
1F 8V						
Wald	1000	1000	1	0.100	0.056	0.012
WaldVCF	1000	1000	1	0.100	0.054	0.012
WaldDiag,MM3	1000	1000	1	0.055	0.025	0.003
Pearson,MM3	1000	1000	1	0.092	0.054	0.016
RSS,MM3	1000	1000	1	0.095	0.061	0.015
Multn,MM3	1000	1000	1	0.098	0.051	0.012
1F 15V						
Wald	1000	1000	8	0.100	0.051	0.010
WaldVCF	1000	1000	8	0.098	0.051	0.010
WaldDiag,MM3	1000	1000	8	0.045	0.023	0.004
Pearson,MM3	1000	1000	8	0.111	0.054	0.008
RSS,MM3	1000	1000	8	0.097	0.053	0.009
Multn,MM3	1000	1000	8	0.111	0.054	0.008
2F 10V						
Wald	1000	1000	8	0.108	0.057	0.016
WaldVCF	1000	1000	8	0.101	0.054	0.015
WaldDiag,MM3	1000	1000	8	0.032	0.014	0.001
Pearson,MM3	1000	1000	8	0.093	0.048	0.011
RSS,MM3	1000	1000	8	0.097	0.044	0.011
Multn,MM3	1000	1000	8	0.094	0.048	0.011
3F 15V						
Wald	1000	1000	23	0.103	0.060	0.020
WaldVCF	1000	1000	23	0.095	0.056	0.016
WaldDiag,MM3	1000	1000	23	0.032	0.015	0.003
Pearson,MM3	1000	1000	23	0.089	0.044	0.013
RSS,MM3	1000	1000	23	0.086	0.042	0.014
Multn,MM3	1000	1000	23	0.090	0.045	0.013

Type I errors ($n = 1000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.107	0.067	0.010
WaldVCF	1000	1000	1	0.105	0.066	0.010
WaldDiag,MM3	1000	1000	1	0.073	0.030	0.006
Pearson,MM3	1000	1000	1	0.095	0.049	0.011
RSS,MM3	1000	1000	1	0.095	0.049	0.009
Multn,MM3	1000	1000	1	0.095	0.049	0.010
1F 8V						
Wald	1000	1000	2	0.091	0.047	0.017
WaldVCF	1000	1000	2	0.088	0.047	0.017
WaldDiag,MM3	1000	1000	2	0.065	0.031	0.008
Pearson,MM3	1000	1000	2	0.087	0.042	0.009
RSS,MM3	1000	1000	2	0.087	0.045	0.012
Multn,MM3	1000	1000	2	0.087	0.045	0.017
1F 15V						
Wald	1000	1000	13	0.093	0.049	0.005
WaldVCF	1000	1000	13	0.090	0.049	0.005
WaldDiag,MM3	1000	1000	13	0.075	0.037	0.005
Pearson,MM3	1000	1000	13	0.097	0.052	0.011
RSS,MM3	1000	1000	13	0.094	0.059	0.008
Multn,MM3	1000	1000	13	0.097	0.052	0.011
2F 10V						
Wald	1000	1000	6	0.109	0.054	0.009
WaldVCF	1000	1000	6	0.104	0.050	0.008
WaldDiag,MM3	1000	1000	6	0.050	0.018	0.002
Pearson,MM3	1000	1000	6	0.092	0.047	0.012
RSS,MM3	1000	1000	6	0.101	0.051	0.010
Multn,MM3	1000	1000	6	0.093	0.047	0.013
3F 15V						
Wald	1000	1000	30	0.103	0.045	0.006
WaldVCF	1000	1000	30	0.094	0.043	0.005
WaldDiag,MM3	1000	1000	30	0.043	0.017	0.001
Pearson,MM3	1000	1000	30	0.094	0.044	0.005
RSS,MM3	1000	1000	30	0.083	0.041	0.007
Multn,MM3	1000	1000	30	0.094	0.044	0.005

Type I errors ($n = 2500$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.091	0.059	0.009
WaldVCF	1000	1000	2	0.090	0.058	0.009
WaldDiag,MM3	1000	1000	2	0.075	0.034	0.008
Pearson,MM3	1000	1000	2	0.095	0.048	0.013
RSS,MM3	1000	1000	2	0.096	0.046	0.013
Multn,MM3	1000	1000	2	0.090	0.056	0.009
1F 8V						
Wald	1000	1000	1	0.106	0.051	0.013
WaldVCF	1000	1000	1	0.106	0.051	0.013
WaldDiag,MM3	1000	1000	1	0.092	0.051	0.007
Pearson,MM3	1000	1000	1	0.098	0.047	0.012
RSS,MM3	1000	1000	1	0.099	0.049	0.011
Multn,MM3	1000	1000	1	0.104	0.051	0.012
1F 15V						
Wald	1000	1000	14	0.095	0.053	0.012
WaldVCF	1000	1000	14	0.094	0.051	0.012
WaldDiag,MM3	1000	1000	14	0.082	0.035	0.007
Pearson,MM3	1000	1000	14	0.109	0.053	0.008
RSS,MM3	1000	1000	14	0.102	0.047	0.007
Multn,MM3	1000	1000	14	0.110	0.053	0.008
2F 10V						
Wald	1000	1000	21	0.102	0.047	0.009
WaldVCF	1000	1000	21	0.096	0.043	0.008
WaldDiag,MM3	1000	1000	21	0.086	0.037	0.007
Pearson,MM3	1000	1000	21	0.090	0.051	0.010
RSS,MM3	1000	1000	21	0.092	0.051	0.010
Multn,MM3	1000	1000	21	0.095	0.043	0.008
3F 15V						
Wald	1000	1000	51	0.104	0.058	0.014
WaldVCF	1000	1000	51	0.096	0.054	0.012
WaldDiag,MM3	1000	1000	51	0.073	0.034	0.006
Pearson,MM3	1000	1000	51	0.086	0.044	0.007
RSS,MM3	1000	1000	51	0.083	0.038	0.009
Multn,MM3	1000	1000	51	0.086	0.044	0.007

Type I errors ($n = 5000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.098	0.054	0.011
WaldVCF	1000	1000	1	0.096	0.054	0.010
WaldDiag,MM3	1000	1000	1	0.094	0.041	0.009
Pearson,MM3	1000	1000	1	0.109	0.048	0.009
RSS,MM3	1000	1000	1	0.101	0.056	0.010
Multn,MM3	1000	1000	1	0.108	0.048	0.009
1F 8V						
Wald	1000	1000	1	0.092	0.046	0.006
WaldVCF	1000	1000	1	0.092	0.045	0.004
WaldDiag,MM3	1000	1000	1	0.073	0.041	0.009
Pearson,MM3	1000	1000	1	0.090	0.042	0.007
RSS,MM3	1000	1000	1	0.093	0.043	0.010
Multn,MM3	1000	1000	1	0.092	0.045	0.004
1F 15V						
Wald	1000	1000	20	0.110	0.059	0.012
WaldVCF	1000	1000	20	0.108	0.057	0.012
WaldDiag,MM3	1000	1000	20	0.097	0.058	0.011
Pearson,MM3	1000	1000	20	0.088	0.045	0.007
RSS,MM3	1000	1000	20	0.101	0.051	0.009
Multn,MM3	1000	1000	20	0.088	0.045	0.007
2F 10V						
Wald	1000	1000	15	0.098	0.050	0.010
WaldVCF	1000	1000	15	0.089	0.048	0.009
WaldDiag,MM3	1000	1000	15	0.075	0.037	0.007
Pearson,MM3	1000	1000	15	0.098	0.049	0.011
RSS,MM3	1000	1000	15	0.107	0.051	0.012
Multn,MM3	1000	1000	15	0.098	0.049	0.011
3F 15V						
Wald	1000	1000	74	0.096	0.044	0.008
WaldVCF	1000	1000	74	0.088	0.042	0.007
WaldDiag,MM3	1000	1000	74	0.079	0.038	0.005
Pearson,MM3	1000	1000	74	0.101	0.039	0.004
RSS,MM3	1000	1000	74	0.096	0.041	0.002
Multn,MM3	1000	1000	74	0.100	0.039	0.004

Type I errors ($n = 10000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.093	0.057	0.010
WaldVCF	1000	1000	2	0.092	0.056	0.010
WaldDiag,MM3	1000	1000	2	0.088	0.049	0.009
Pearson,MM3	1000	1000	2	0.105	0.053	0.013
RSS,MM3	1000	1000	2	0.101	0.056	0.012
Multn,MM3	1000	1000	2	0.092	0.056	0.010
1F 8V						
Wald	1000	1000	5	0.103	0.055	0.013
WaldVCF	1000	1000	5	0.102	0.055	0.013
WaldDiag,MM3	1000	1000	5	0.092	0.046	0.010
Pearson,MM3	1000	1000	5	0.112	0.059	0.015
RSS,MM3	1000	1000	5	0.104	0.055	0.015
Multn,MM3	1000	1000	5	0.100	0.054	0.013
1F 15V						
Wald	1000	1000	37	0.106	0.054	0.011
WaldVCF	1000	1000	37	0.104	0.053	0.010
WaldDiag,MM3	1000	1000	37	0.117	0.062	0.013
Pearson,MM3	1000	1000	37	0.091	0.049	0.011
RSS,MM3	1000	1000	37	0.094	0.047	0.013
Multn,MM3	1000	1000	37	0.104	0.053	0.010
2F 10V						
Wald	1000	1000	24	0.115	0.060	0.015
WaldVCF	1000	1000	24	0.108	0.059	0.011
WaldDiag,MM3	1000	1000	24	0.104	0.052	0.010
Pearson,MM3	1000	1000	24	0.106	0.051	0.015
RSS,MM3	1000	1000	24	0.104	0.053	0.015
Multn,MM3	1000	1000	24	0.108	0.058	0.011
3F 15V						
Wald	1000	1000	97	0.106	0.052	0.007
WaldVCF	1000	1000	97	0.088	0.043	0.006
WaldDiag,MM3	1000	1000	97	0.082	0.039	0.009
Pearson,MM3	1000	1000	97	0.091	0.045	0.011
RSS,MM3	1000	1000	97	0.090	0.043	0.008
Multn,MM3	1000	1000	97	0.087	0.042	0.006

Power ($n = 500$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.334	0.228	0.081
WaldVCF	1000	1000	0	0.332	0.225	0.079
WaldDiag,MM3	1000	1000	0	0.154	0.061	0.007
Pearson,MM3	1000	1000	0	0.354	0.220	0.069
RSS,MM3	1000	1000	0	0.357	0.236	0.075
Multn,MM3	1000	1000	0	0.317	0.203	0.058
1F 8V						
Wald	1000	1000	1	0.622	0.506	0.286
WaldVCF	1000	1000	1	0.617	0.503	0.283
WaldDiag,MM3	1000	1000	1	0.401	0.266	0.083
Pearson,MM3	1000	1000	1	0.373	0.240	0.077
RSS,MM3	1000	1000	1	0.441	0.322	0.129
Multn,MM3	1000	1000	1	0.616	0.497	0.279
1F 15V						
Wald	1000	1000	4	0.425	0.300	0.128
WaldVCF	1000	1000	4	0.416	0.292	0.121
WaldDiag,MM3	1000	1000	4	0.264	0.180	0.059
Pearson,MM3	1000	1000	4	0.551	0.437	0.242
RSS,MM3	1000	1000	4	0.552	0.442	0.229
Multn,MM3	1000	1000	4	0.412	0.286	0.119
2F 10V						
Wald	1000	1000	10	0.206	0.119	0.036
WaldVCF	1000	1000	10	0.194	0.110	0.033
WaldDiag,MM3	1000	1000	10	0.096	0.050	0.010
Pearson,MM3	1000	1000	10	0.233	0.141	0.039
RSS,MM3	1000	1000	10	0.237	0.137	0.043
Multn,MM3	1000	1000	10	0.179	0.097	0.027
3F 15V						
Wald	1000	999	26	0.218	0.137	0.043
WaldVCF	1000	999	26	0.199	0.127	0.035
WaldDiag,MM3	1000	999	26	0.111	0.054	0.012
Pearson,MM3	1000	999	26	0.255	0.173	0.072
RSS,MM3	1000	999	26	0.256	0.176	0.069
Multn,MM3	1000	999	26	0.184	0.112	0.027

Power ($n = 1000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.511	0.382	0.203
WaldVCF	1000	1000	0	0.508	0.382	0.203
WaldDiag,MM3	1000	1000	0	0.342	0.221	0.076
Pearson,MM3	1000	1000	0	0.545	0.422	0.229
RSS,MM3	1000	1000	0	0.560	0.428	0.244
Multn,MM3	1000	1000	0	0.497	0.374	0.194
1F 8V						
Wald	1000	1000	1	0.904	0.832	0.658
WaldVCF	1000	1000	1	0.901	0.831	0.657
WaldDiag,MM3	1000	1000	1	0.768	0.653	0.374
Pearson,MM3	1000	1000	1	0.629	0.474	0.224
RSS,MM3	1000	1000	1	0.762	0.639	0.365
Multn,MM3	1000	1000	1	0.898	0.827	0.655
1F 15V						
Wald	1000	1000	8	0.731	0.598	0.368
WaldVCF	1000	1000	8	0.721	0.586	0.360
WaldDiag,MM3	1000	1000	8	0.575	0.433	0.224
Pearson,MM3	1000	1000	8	0.877	0.792	0.592
RSS,MM3	1000	1000	8	0.877	0.776	0.581
Multn,MM3	1000	1000	8	0.720	0.582	0.361
2F 10V						
Wald	1000	1000	5	0.346	0.240	0.095
WaldVCF	1000	1000	5	0.330	0.234	0.085
WaldDiag,MM3	1000	1000	5	0.290	0.181	0.059
Pearson,MM3	1000	1000	5	0.412	0.303	0.137
RSS,MM3	1000	1000	5	0.431	0.332	0.164
Multn,MM3	1000	1000	5	0.324	0.227	0.085
3F 15V						
Wald	1000	1000	24	0.408	0.285	0.118
WaldVCF	1000	1000	24	0.400	0.269	0.105
WaldDiag,MM3	1000	1000	24	0.370	0.250	0.098
Pearson,MM3	1000	1000	24	0.483	0.365	0.204
RSS,MM3	1000	1000	24	0.499	0.396	0.227
Multn,MM3	1000	1000	24	0.386	0.262	0.096

Power ($n = 2500$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.891	0.827	0.671
WaldVCF	1000	1000	1	0.890	0.827	0.670
WaldDiag,MM3	1000	1000	1	0.808	0.709	0.425
Pearson,MM3	1000	1000	1	0.902	0.844	0.688
RSS,MM3	1000	1000	1	0.918	0.854	0.712
Multn,MM3	1000	1000	1	0.890	0.826	0.668
1F 8V						
Wald	1000	1000	5	1.000	0.999	0.996
WaldVCF	1000	1000	5	1.000	0.999	0.996
WaldDiag,MM3	1000	1000	5	0.998	0.995	0.966
Pearson,MM3	1000	1000	5	0.980	0.955	0.831
RSS,MM3	1000	1000	5	0.994	0.985	0.946
Multn,MM3	1000	1000	5	1.000	0.998	0.996
1F 15V						
Wald	1000	1000	11	0.995	0.990	0.957
WaldVCF	1000	1000	11	0.995	0.988	0.956
WaldDiag,MM3	1000	1000	11	0.983	0.968	0.871
Pearson,MM3	1000	1000	11	1.000	0.998	0.995
RSS,MM3	1000	1000	11	1.000	1.000	0.994
Multn,MM3	1000	1000	11	0.995	0.988	0.956
2F 10V						
Wald	1000	1000	10	0.577	0.484	0.294
WaldVCF	1000	1000	10	0.560	0.466	0.278
WaldDiag,MM3	1000	1000	10	0.592	0.490	0.327
Pearson,MM3	1000	1000	10	0.668	0.560	0.402
RSS,MM3	1000	1000	10	0.698	0.601	0.438
Multn,MM3	1000	1000	10	0.565	0.473	0.284
3F 15V						
Wald	1000	1000	37	0.743	0.653	0.462
WaldVCF	1000	1000	37	0.730	0.636	0.439
WaldDiag,MM3	1000	1000	37	0.773	0.687	0.509
Pearson,MM3	1000	1000	37	0.814	0.745	0.605
RSS,MM3	1000	1000	37	0.847	0.783	0.640
Multn,MM3	1000	1000	37	0.732	0.637	0.443

Power ($n = 5000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.986	0.979	0.938
WaldVCF	1000	1000	1	0.986	0.979	0.938
WaldDiag,MM3	1000	1000	1	0.982	0.950	0.836
Pearson,MM3	1000	1000	1	0.985	0.979	0.942
RSS,MM3	1000	1000	1	0.987	0.982	0.948
Multn,MM3	1000	1000	1	0.986	0.978	0.938
1F 8V						
Wald	1000	1000	4	1.000	1.000	1.000
WaldVCF	1000	1000	4	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	4	1.000	1.000	1.000
Pearson,MM3	1000	1000	4	1.000	1.000	0.996
RSS,MM3	1000	1000	4	1.000	1.000	1.000
Multn,MM3	1000	1000	4	1.000	1.000	1.000
1F 15V						
Wald	1000	1000	19	1.000	1.000	1.000
WaldVCF	1000	1000	19	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	19	1.000	1.000	1.000
Pearson,MM3	1000	1000	19	1.000	1.000	1.000
RSS,MM3	1000	1000	19	1.000	1.000	1.000
Multn,MM3	1000	1000	19	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	12	0.801	0.730	0.598
WaldVCF	1000	1000	12	0.790	0.723	0.584
WaldDiag,MM3	1000	1000	12	0.814	0.751	0.610
Pearson,MM3	1000	1000	12	0.843	0.792	0.688
RSS,MM3	1000	1000	12	0.862	0.823	0.720
Multn,MM3	1000	1000	12	0.794	0.726	0.591
3F 15V						
Wald	1000	1000	45	0.929	0.890	0.805
WaldVCF	1000	1000	45	0.923	0.885	0.796
WaldDiag,MM3	1000	1000	45	0.947	0.916	0.834
Pearson,MM3	1000	1000	45	0.959	0.926	0.857
RSS,MM3	1000	1000	45	0.964	0.944	0.881
Multn,MM3	1000	1000	45	0.924	0.885	0.799

Power ($n = 10000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	0	1.000	0.999	0.995
WaldVCF	1000	1000	0	1.000	0.999	0.995
WaldDiag,MM3	1000	1000	0	0.999	0.996	0.989
Pearson,MM3	1000	1000	0	1.000	0.999	0.994
RSS,MM3	1000	1000	0	1.000	0.999	0.998
Multn,MM3	1000	1000	0	1.000	0.999	0.995
1F 8V						
Wald	1000	1000	4	1.000	1.000	1.000
WaldVCF	1000	1000	4	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	4	1.000	1.000	1.000
Pearson,MM3	1000	1000	4	1.000	1.000	1.000
RSS,MM3	1000	1000	4	1.000	1.000	1.000
Multn,MM3	1000	1000	4	1.000	1.000	1.000
1F 15V						
Wald	1000	1000	23	1.000	1.000	1.000
WaldVCF	1000	1000	23	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	23	1.000	1.000	1.000
Pearson,MM3	1000	1000	23	1.000	1.000	1.000
RSS,MM3	1000	1000	23	1.000	1.000	1.000
Multn,MM3	1000	1000	23	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	14	0.937	0.913	0.843
WaldVCF	1000	1000	14	0.932	0.906	0.833
WaldDiag,MM3	1000	1000	14	0.945	0.921	0.848
Pearson,MM3	1000	1000	14	0.946	0.929	0.866
RSS,MM3	1000	1000	14	0.954	0.941	0.895
Multn,MM3	1000	1000	14	0.932	0.910	0.839
3F 15V						
Wald	1000	1000	61	0.988	0.982	0.969
WaldVCF	1000	1000	61	0.987	0.981	0.965
WaldDiag,MM3	1000	1000	61	0.987	0.984	0.974
Pearson,MM3	1000	1000	61	0.992	0.986	0.978
RSS,MM3	1000	1000	61	0.992	0.991	0.980
Multn,MM3	1000	1000	61	0.987	0.981	0.967

Cluster sampling

Type I errors ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.100	0.056	0.012
WaldVCF	1000	1000	0	0.098	0.056	0.012
WaldDiag,MM3	1000	1000	0	0.034	0.006	0.000
Pearson,MM3	1000	1000	0	0.091	0.037	0.005
RSS,MM3	1000	1000	0	0.093	0.041	0.004
Multn,MM3	1000	1000	0	0.090	0.046	0.007
1F 8V						
Wald	1000	1000	3	0.132	0.070	0.012
WaldVCF	1000	1000	3	0.129	0.069	0.012
WaldDiag,MM3	1000	1000	3	0.072	0.034	0.002
Pearson,MM3	1000	1000	3	0.089	0.054	0.009
RSS,MM3	1000	1000	3	0.102	0.051	0.007
Multn,MM3	1000	1000	3	0.122	0.068	0.009
1F 15V						
Wald	1000	1000	11	0.134	0.068	0.015
WaldVCF	1000	1000	11	0.133	0.066	0.014
WaldDiag,MM3	1000	1000	11	0.080	0.038	0.010
Pearson,MM3	1000	1000	11	0.096	0.059	0.017
RSS,MM3	1000	1000	11	0.101	0.056	0.014
Multn,MM3	1000	1000	11	0.128	0.064	0.014
2F 10V						
Wald	1000	1000	12	0.112	0.060	0.015
WaldVCF	1000	1000	12	0.106	0.058	0.014
WaldDiag,MM3	1000	1000	12	0.028	0.008	0.000
Pearson,MM3	1000	1000	12	0.094	0.044	0.013
RSS,MM3	1000	1000	12	0.084	0.047	0.009
Multn,MM3	1000	1000	12	0.092	0.048	0.008
3F 15V						
Wald	1000	1000	38	0.129	0.067	0.017
WaldVCF	1000	1000	38	0.115	0.057	0.016
WaldDiag,MM3	1000	1000	38	0.035	0.017	0.004
Pearson,MM3	1000	1000	38	0.093	0.043	0.012
RSS,MM3	1000	1000	38	0.088	0.039	0.011
Multn,MM3	1000	1000	38	0.098	0.049	0.013

Type I errors ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.116	0.059	0.012
WaldVCF	1000	1000	0	0.115	0.059	0.012
WaldDiag,MM3	1000	1000	0	0.073	0.034	0.001
Pearson,MM3	1000	1000	0	0.098	0.045	0.010
RSS,MM3	1000	1000	0	0.103	0.048	0.008
Multn,MM3	1000	1000	0	0.111	0.056	0.012
1F 8V						
Wald	1000	1000	1	0.102	0.054	0.015
WaldVCF	1000	1000	1	0.101	0.053	0.015
WaldDiag,MM3	1000	1000	1	0.093	0.036	0.008
Pearson,MM3	1000	1000	1	0.089	0.042	0.006
RSS,MM3	1000	1000	1	0.093	0.041	0.006
Multn,MM3	1000	1000	1	0.101	0.051	0.013
1F 15V						
Wald	1000	1000	14	0.128	0.069	0.014
WaldVCF	1000	1000	14	0.126	0.064	0.014
WaldDiag,MM3	1000	1000	14	0.096	0.043	0.006
Pearson,MM3	1000	1000	14	0.098	0.043	0.009
RSS,MM3	1000	1000	14	0.102	0.048	0.007
Multn,MM3	1000	1000	14	0.126	0.064	0.012
2F 10V						
Wald	1000	1000	6	0.113	0.055	0.012
WaldVCF	1000	1000	6	0.106	0.050	0.011
WaldDiag,MM3	1000	1000	6	0.054	0.023	0.006
Pearson,MM3	1000	1000	6	0.104	0.049	0.009
RSS,MM3	1000	1000	6	0.106	0.052	0.010
Multn,MM3	1000	1000	6	0.102	0.048	0.011
3F 15V						
Wald	1000	1000	29	0.153	0.088	0.015
WaldVCF	1000	1000	29	0.139	0.083	0.012
WaldDiag,MM3	1000	1000	29	0.081	0.035	0.005
Pearson,MM3	1000	1000	29	0.110	0.070	0.016
RSS,MM3	1000	1000	29	0.113	0.069	0.015
Multn,MM3	1000	1000	29	0.127	0.078	0.011

Type I errors ($n = 2500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.103	0.053	0.006
WaldVCF	1000	1000	1	0.101	0.053	0.006
WaldDiag,MM3	1000	1000	1	0.100	0.039	0.003
Pearson,MM3	1000	1000	1	0.104	0.051	0.010
RSS,MM3	1000	1000	1	0.103	0.048	0.011
Multn,MM3	1000	1000	1	0.099	0.053	0.006
1F 8V						
Wald	1000	1000	5	0.104	0.052	0.009
WaldVCF	1000	1000	5	0.102	0.052	0.009
WaldDiag,MM3	1000	1000	5	0.102	0.054	0.012
Pearson,MM3	1000	1000	5	0.093	0.046	0.014
RSS,MM3	1000	1000	5	0.099	0.043	0.012
Multn,MM3	1000	1000	5	0.100	0.052	0.009
1F 15V						
Wald	1000	1000	19	0.123	0.073	0.020
WaldVCF	1000	1000	19	0.121	0.072	0.020
WaldDiag,MM3	1000	1000	19	0.117	0.058	0.015
Pearson,MM3	1000	1000	19	0.104	0.055	0.011
RSS,MM3	1000	1000	19	0.108	0.054	0.015
Multn,MM3	1000	1000	19	0.121	0.072	0.019
2F 10V						
Wald	1000	1000	18	0.119	0.062	0.024
WaldVCF	1000	1000	18	0.112	0.059	0.023
WaldDiag,MM3	1000	1000	18	0.101	0.052	0.007
Pearson,MM3	1000	1000	18	0.111	0.061	0.012
RSS,MM3	1000	1000	18	0.111	0.053	0.015
Multn,MM3	1000	1000	18	0.108	0.059	0.022
3F 15V						
Wald	1000	1000	50	0.124	0.063	0.009
WaldVCF	1000	1000	50	0.114	0.052	0.005
WaldDiag,MM3	1000	1000	50	0.081	0.033	0.003
Pearson,MM3	1000	1000	50	0.092	0.042	0.012
RSS,MM3	1000	1000	50	0.095	0.042	0.008
Multn,MM3	1000	1000	50	0.111	0.049	0.006

Type I errors ($n = 5000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.108	0.052	0.013
WaldVCF	1000	1000	0	0.108	0.051	0.013
WaldDiag,MM3	1000	1000	0	0.088	0.045	0.012
Pearson,MM3	1000	1000	0	0.107	0.051	0.010
RSS,MM3	1000	1000	0	0.109	0.054	0.009
Multn,MM3	1000	1000	0	0.108	0.050	0.013
1F 8V						
Wald	1000	1000	9	0.104	0.049	0.010
WaldVCF	1000	1000	9	0.102	0.049	0.010
WaldDiag,MM3	1000	1000	9	0.103	0.050	0.014
Pearson,MM3	1000	1000	9	0.094	0.047	0.006
RSS,MM3	1000	1000	9	0.093	0.042	0.008
Multn,MM3	1000	1000	9	0.102	0.049	0.010
1F 15V						
Wald	1000	1000	33	0.129	0.063	0.020
WaldVCF	1000	1000	33	0.127	0.060	0.020
WaldDiag,MM3	1000	1000	33	0.121	0.064	0.021
Pearson,MM3	1000	1000	33	0.101	0.051	0.010
RSS,MM3	1000	1000	33	0.109	0.056	0.013
Multn,MM3	1000	1000	33	0.127	0.060	0.020
2F 10V						
Wald	1000	1000	26	0.134	0.062	0.012
WaldVCF	1000	1000	26	0.130	0.058	0.011
WaldDiag,MM3	1000	1000	26	0.105	0.057	0.012
Pearson,MM3	1000	1000	26	0.112	0.055	0.013
RSS,MM3	1000	1000	26	0.115	0.058	0.011
Multn,MM3	1000	1000	26	0.128	0.058	0.011
3F 15V						
Wald	1000	1000	52	0.121	0.057	0.013
WaldVCF	1000	1000	52	0.112	0.051	0.010
WaldDiag,MM3	1000	1000	52	0.107	0.054	0.010
Pearson,MM3	1000	1000	52	0.106	0.048	0.011
RSS,MM3	1000	1000	52	0.098	0.051	0.012
Multn,MM3	1000	1000	52	0.115	0.051	0.011

Type I errors ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	4	0.116	0.060	0.010
WaldVCF	1000	1000	4	0.116	0.060	0.010
WaldDiag,MM3	1000	1000	4	0.094	0.051	0.013
Pearson,MM3	1000	1000	4	0.103	0.055	0.011
RSS,MM3	1000	1000	4	0.107	0.058	0.009
Multn,MM3	1000	1000	4	0.116	0.059	0.010
1F 8V						
Wald	1000	1000	3	0.121	0.058	0.016
WaldVCF	1000	1000	3	0.118	0.057	0.016
WaldDiag,MM3	1000	1000	3	0.112	0.052	0.010
Pearson,MM3	1000	1000	3	0.107	0.051	0.015
RSS,MM3	1000	1000	3	0.108	0.056	0.017
Multn,MM3	1000	1000	3	0.119	0.057	0.016
1F 15V						
Wald	1000	1000	35	0.118	0.053	0.011
WaldVCF	1000	1000	35	0.115	0.051	0.011
WaldDiag,MM3	1000	1000	35	0.108	0.058	0.010
Pearson,MM3	1000	1000	35	0.079	0.040	0.004
RSS,MM3	1000	1000	35	0.089	0.042	0.006
Multn,MM3	1000	1000	35	0.116	0.050	0.011
2F 10V						
Wald	1000	1000	32	0.130	0.061	0.011
WaldVCF	1000	1000	32	0.123	0.057	0.010
WaldDiag,MM3	1000	1000	32	0.102	0.048	0.012
Pearson,MM3	1000	1000	32	0.102	0.051	0.008
RSS,MM3	1000	1000	32	0.111	0.050	0.013
Multn,MM3	1000	1000	32	0.123	0.056	0.010
3F 15V						
Wald	1000	1000	77	0.144	0.068	0.010
WaldVCF	1000	1000	77	0.133	0.062	0.009
WaldDiag,MM3	1000	1000	77	0.109	0.049	0.013
Pearson,MM3	1000	1000	77	0.115	0.056	0.009
RSS,MM3	1000	1000	77	0.122	0.056	0.014
Multn,MM3	1000	1000	77	0.115	0.056	0.009

Power ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.250	0.155	0.052
WaldVCF	1000	1000	1	0.249	0.154	0.049
WaldDiag,MM3	1000	1000	1	0.106	0.036	0.003
Pearson,MM3	1000	1000	1	0.251	0.160	0.055
RSS,MM3	1000	1000	1	0.260	0.160	0.054
Multn,MM3	1000	1000	1	0.230	0.140	0.039
1F 8V						
Wald	1000	1000	4	0.604	0.500	0.287
WaldVCF	1000	1000	4	0.604	0.496	0.282
WaldDiag,MM3	1000	1000	4	0.409	0.297	0.092
Pearson,MM3	1000	1000	4	0.360	0.224	0.069
RSS,MM3	1000	1000	4	0.452	0.309	0.117
Multn,MM3	1000	1000	4	0.598	0.490	0.276
1F 15V						
Wald	1000	1000	11	0.633	0.492	0.271
WaldVCF	1000	1000	11	0.624	0.484	0.260
WaldDiag,MM3	1000	1000	11	0.455	0.319	0.130
Pearson,MM3	1000	1000	11	0.773	0.665	0.461
RSS,MM3	1000	1000	11	0.757	0.649	0.433
Multn,MM3	1000	1000	11	0.614	0.482	0.256
2F 10V						
Wald	999	998	17	0.571	0.463	0.267
WaldVCF	999	998	17	0.277	0.175	0.033
WaldDiag,MM3	999	998	17	0.156	0.073	0.009
Pearson,MM3	999	998	17	0.280	0.172	0.042
RSS,MM3	999	998	17	0.305	0.192	0.053
Multn,MM3	999	998	17	0.451	0.344	0.151
3F 15V						
Wald	1000	1000	32	0.190	0.108	0.023
WaldVCF	1000	1000	32	0.176	0.097	0.018
WaldDiag,MM3	1000	1000	32	0.071	0.024	0.002
Pearson,MM3	1000	1000	32	0.150	0.071	0.019
RSS,MM3	1000	1000	32	0.159	0.086	0.023
Multn,MM3	1000	1000	32	0.156	0.083	0.012

Power ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.318	0.218	0.080
WaldVCF	1000	1000	2	0.318	0.215	0.080
WaldDiag,MM3	1000	1000	2	0.195	0.107	0.020
Pearson,MM3	1000	1000	2	0.319	0.214	0.089
RSS,MM3	1000	1000	2	0.337	0.220	0.096
Multn,MM3	1000	1000	2	0.309	0.210	0.079
1F 8V						
Wald	1000	1000	1	0.918	0.883	0.724
WaldVCF	1000	1000	1	0.915	0.880	0.721
WaldDiag,MM3	1000	1000	1	0.823	0.678	0.417
Pearson,MM3	1000	1000	1	0.757	0.631	0.359
RSS,MM3	1000	1000	1	0.849	0.746	0.532
Multn,MM3	1000	1000	1	0.915	0.879	0.717
1F 15V						
Wald	1000	1000	7	0.805	0.710	0.518
WaldVCF	1000	1000	7	0.799	0.705	0.512
WaldDiag,MM3	1000	1000	7	0.674	0.547	0.301
Pearson,MM3	1000	1000	7	0.924	0.873	0.714
RSS,MM3	1000	1000	7	0.918	0.874	0.718
Multn,MM3	1000	1000	7	0.798	0.705	0.512
2F 10V						
Wald	1000	1000	8	0.413	0.279	0.129
WaldVCF	1000	1000	8	0.267	0.170	0.057
WaldDiag,MM3	1000	1000	8	0.251	0.153	0.031
Pearson,MM3	1000	1000	8	0.374	0.252	0.113
RSS,MM3	1000	1000	8	0.369	0.253	0.103
Multn,MM3	1000	1000	8	0.383	0.257	0.114
3F 15V						
Wald	1000	1000	30	0.639	0.496	0.253
WaldVCF	1000	1000	30	0.616	0.471	0.235
WaldDiag,MM3	1000	1000	30	0.624	0.493	0.274
Pearson,MM3	1000	1000	30	0.727	0.621	0.373
RSS,MM3	1000	1000	30	0.768	0.658	0.436
Multn,MM3	1000	1000	30	0.614	0.468	0.230

Power ($n = 2500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.956	0.921	0.822
WaldVCF	1000	1000	1	0.956	0.921	0.821
WaldDiag,MM3	1000	1000	1	0.882	0.791	0.558
Pearson,MM3	1000	1000	1	0.955	0.923	0.811
RSS,MM3	1000	1000	1	0.964	0.938	0.843
Multn,MM3	1000	1000	1	0.956	0.920	0.818
1F 8V						
Wald	1000	1000	3	1.000	1.000	1.000
WaldVCF	1000	1000	3	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	3	1.000	1.000	0.999
Pearson,MM3	1000	1000	3	1.000	1.000	1.000
RSS,MM3	1000	1000	3	1.000	1.000	1.000
Multn,MM3	1000	1000	3	1.000	1.000	1.000
1F 15V						
Wald	1000	1000	8	0.992	0.985	0.934
WaldVCF	1000	1000	8	0.991	0.985	0.932
WaldDiag,MM3	1000	1000	8	0.968	0.928	0.804
Pearson,MM3	1000	1000	8	1.000	1.000	0.998
RSS,MM3	1000	1000	8	1.000	1.000	0.998
Multn,MM3	1000	1000	8	0.991	0.985	0.931
2F 10V						
Wald	1000	1000	6	0.577	0.435	0.230
WaldVCF	1000	1000	6	0.533	0.392	0.190
WaldDiag,MM3	1000	1000	6	0.607	0.475	0.240
Pearson,MM3	1000	1000	6	0.812	0.718	0.514
RSS,MM3	1000	1000	6	0.780	0.693	0.501
Multn,MM3	1000	1000	6	0.568	0.432	0.229
3F 15V						
Wald	1000	1000	37	0.974	0.948	0.834
WaldVCF	1000	1000	37	0.968	0.944	0.813
WaldDiag,MM3	1000	1000	37	0.987	0.971	0.884
Pearson,MM3	1000	1000	37	0.991	0.985	0.943
RSS,MM3	1000	1000	37	0.994	0.990	0.965
Multn,MM3	1000	1000	37	0.967	0.943	0.815

Power ($n = 5000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.983	0.969	0.916
WaldVCF	1000	1000	0	0.983	0.969	0.916
WaldDiag,MM3	1000	1000	0	0.967	0.937	0.757
Pearson,MM3	1000	1000	0	0.980	0.954	0.854
RSS,MM3	1000	1000	0	0.987	0.967	0.911
Multn,MM3	1000	1000	0	0.982	0.969	0.915
1F 8V						
Wald	1000	1000	1	1.000	1.000	1.000
WaldVCF	1000	1000	1	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	1	1.000	1.000	1.000
Pearson,MM3	1000	1000	1	1.000	0.999	0.996
RSS,MM3	1000	1000	1	1.000	1.000	1.000
Multn,MM3	1000	1000	1	1.000	1.000	1.000
1F 15V						
Wald	1000	1000	20	1.000	1.000	1.000
WaldVCF	1000	1000	20	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	20	1.000	1.000	1.000
Pearson,MM3	1000	1000	20	1.000	1.000	1.000
RSS,MM3	1000	1000	20	1.000	1.000	1.000
Multn,MM3	1000	1000	20	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	7	0.997	0.991	0.942
WaldVCF	1000	1000	7	0.995	0.989	0.934
WaldDiag,MM3	1000	1000	7	0.999	0.996	0.946
Pearson,MM3	1000	1000	7	0.999	0.998	0.995
RSS,MM3	1000	1000	7	0.999	0.999	0.996
Multn,MM3	1000	1000	7	0.997	0.990	0.943
3F 15V						
Wald	1000	1000	41	0.997	0.989	0.960
WaldVCF	1000	1000	41	0.997	0.986	0.958
WaldDiag,MM3	1000	1000	41	0.998	0.996	0.980
Pearson,MM3	1000	1000	41	0.998	0.997	0.980
RSS,MM3	1000	1000	41	0.999	0.999	0.993
Multn,MM3	1000	1000	41	0.997	0.986	0.957

Power ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	1	1	1
WaldVCF	1000	1000	1	1	1	1
WaldDiag,MM3	1000	1000	1	1	1	1
Pearson,MM3	1000	1000	1	1	1	1
RSS,MM3	1000	1000	1	1	1	1
Multn,MM3	1000	1000	1	1	1	1
1F 8V						
Wald	1000	1000	4	1	1	1
WaldVCF	1000	1000	4	1	1	1
WaldDiag,MM3	1000	1000	4	1	1	1
Pearson,MM3	1000	1000	4	1	1	1
RSS,MM3	1000	1000	4	1	1	1
Multn,MM3	1000	1000	4	1	1	1
1F 15V						
Wald	1000	1000	25	1	1	1
WaldVCF	1000	1000	25	1	1	1
WaldDiag,MM3	1000	1000	25	1	1	1
Pearson,MM3	1000	1000	25	1	1	1
RSS,MM3	1000	1000	25	1	1	1
Multn,MM3	1000	1000	25	1	1	1
2F 10V						
Wald	1000	1000	13	1	1	1
WaldVCF	1000	1000	13	1	1	1
WaldDiag,MM3	1000	1000	13	1	1	1
Pearson,MM3	1000	1000	13	1	1	1
RSS,MM3	1000	1000	13	1	1	1
Multn,MM3	1000	1000	13	1	1	1
3F 15V						
Wald	1000	1000	57	1	1	1
WaldVCF	1000	1000	57	1	1	1
WaldDiag,MM3	1000	1000	57	1	1	1
Pearson,MM3	1000	1000	57	1	1	1
RSS,MM3	1000	1000	57	1	1	1
Multn,MM3	1000	1000	57	1	1	1

Strat-clust sampling

Type I errors ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.111	0.054	0.012
WaldVCF	1000	1000	1	0.111	0.053	0.012
WaldDiag,MM3	1000	1000	1	0.048	0.019	0.000
Pearson,MM3	1000	1000	1	0.092	0.044	0.008
RSS,MM3	1000	1000	1	0.094	0.045	0.010
Multn,MM3	1000	1000	1	0.092	0.044	0.008
1F 8V						
Wald	1000	1000	2	0.134	0.071	0.022
WaldVCF	1000	1000	2	0.132	0.069	0.020
WaldDiag,MM3	1000	1000	2	0.074	0.039	0.005
Pearson,MM3	1000	1000	2	0.127	0.071	0.015
RSS,MM3	1000	1000	2	0.128	0.069	0.016
Multn,MM3	1000	1000	2	0.128	0.067	0.018
1F 15V						
Wald	1000	1000	10	0.156	0.091	0.029
WaldVCF	1000	1000	10	0.148	0.080	0.026
WaldDiag,MM3	1000	1000	10	0.094	0.050	0.012
Pearson,MM3	1000	1000	10	0.091	0.052	0.012
RSS,MM3	1000	1000	10	0.114	0.054	0.016
Multn,MM3	1000	1000	10	0.140	0.079	0.024
2F 10V						
Wald	1000	1000	9	0.121	0.064	0.015
WaldVCF	1000	1000	9	0.109	0.056	0.014
WaldDiag,MM3	1000	1000	9	0.033	0.006	0.002
Pearson,MM3	1000	1000	9	0.082	0.036	0.010
RSS,MM3	1000	1000	9	0.080	0.038	0.007
Multn,MM3	1000	1000	9	0.099	0.048	0.009
3F 15V						
Wald	1000	1000	20	0.107	0.062	0.010
WaldVCF	1000	1000	20	0.092	0.054	0.008
WaldDiag,MM3	1000	1000	20	0.036	0.010	0.000
Pearson,MM3	1000	1000	20	0.075	0.036	0.007
RSS,MM3	1000	1000	20	0.072	0.037	0.003
Multn,MM3	1000	1000	20	0.084	0.048	0.006

Type I errors ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.085	0.042	0.009
WaldVCF	1000	1000	0	0.084	0.042	0.009
WaldDiag,MM3	1000	1000	0	0.058	0.018	0.002
Pearson,MM3	1000	1000	0	0.087	0.043	0.006
RSS,MM3	1000	1000	0	0.089	0.039	0.007
Multn,MM3	1000	1000	0	0.087	0.043	0.006
1F 8V						
Wald	1000	1000	4	0.131	0.052	0.011
WaldVCF	1000	1000	4	0.128	0.052	0.011
WaldDiag,MM3	1000	1000	4	0.085	0.046	0.003
Pearson,MM3	1000	1000	4	0.123	0.071	0.015
RSS,MM3	1000	1000	4	0.138	0.073	0.012
Multn,MM3	1000	1000	4	0.125	0.050	0.011
1F 15V						
Wald	1000	1000	6	0.119	0.062	0.021
WaldVCF	1000	1000	6	0.112	0.059	0.020
WaldDiag,MM3	1000	1000	6	0.096	0.049	0.013
Pearson,MM3	1000	1000	6	0.088	0.044	0.008
RSS,MM3	1000	1000	6	0.087	0.043	0.012
Multn,MM3	1000	1000	6	0.113	0.058	0.020
2F 10V						
Wald	1000	1000	10	0.117	0.061	0.009
WaldVCF	1000	1000	10	0.107	0.055	0.009
WaldDiag,MM3	1000	1000	10	0.061	0.024	0.003
Pearson,MM3	1000	1000	10	0.088	0.050	0.013
RSS,MM3	1000	1000	10	0.092	0.048	0.011
Multn,MM3	1000	1000	10	0.103	0.053	0.009
3F 15V						
Wald	1000	1000	21	0.116	0.057	0.013
WaldVCF	1000	1000	21	0.102	0.051	0.012
WaldDiag,MM3	1000	1000	21	0.053	0.029	0.005
Pearson,MM3	1000	1000	21	0.079	0.040	0.011
RSS,MM3	1000	1000	21	0.086	0.036	0.011
Multn,MM3	1000	1000	21	0.095	0.050	0.010

Type I errors ($n = 2500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.118	0.067	0.016
WaldVCF	1000	1000	1	0.116	0.067	0.015
WaldDiag,MM3	1000	1000	1	0.098	0.045	0.009
Pearson,MM3	1000	1000	1	0.115	0.055	0.011
RSS,MM3	1000	1000	1	0.119	0.058	0.013
Multn,MM3	1000	1000	1	0.115	0.055	0.011
1F 8V						
Wald	1000	1000	6	0.101	0.041	0.009
WaldVCF	1000	1000	6	0.100	0.041	0.009
WaldDiag,MM3	1000	1000	6	0.097	0.052	0.014
Pearson,MM3	1000	1000	6	0.091	0.046	0.008
RSS,MM3	1000	1000	6	0.090	0.048	0.009
Multn,MM3	1000	1000	6	0.091	0.046	0.008
1F 15V						
Wald	1000	1000	19	0.085	0.047	0.010
WaldVCF	1000	1000	19	0.085	0.046	0.010
WaldDiag,MM3	1000	1000	19	0.088	0.045	0.006
Pearson,MM3	1000	1000	19	0.085	0.036	0.007
RSS,MM3	1000	1000	19	0.083	0.037	0.011
Multn,MM3	1000	1000	19	0.085	0.036	0.007
2F 10V						
Wald	1000	1000	14	0.126	0.060	0.014
WaldVCF	1000	1000	14	0.119	0.055	0.013
WaldDiag,MM3	1000	1000	14	0.097	0.045	0.004
Pearson,MM3	1000	1000	14	0.103	0.058	0.013
RSS,MM3	1000	1000	14	0.107	0.061	0.013
Multn,MM3	1000	1000	14	0.116	0.055	0.013
3F 15V						
Wald	1000	1000	47	0.114	0.059	0.013
WaldVCF	1000	1000	47	0.098	0.055	0.010
WaldDiag,MM3	1000	1000	47	0.082	0.035	0.007
Pearson,MM3	1000	1000	47	0.103	0.049	0.009
RSS,MM3	1000	1000	47	0.095	0.050	0.008
Multn,MM3	1000	1000	47	0.096	0.054	0.010

Type I errors ($n = 5000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	4	0.104	0.052	0.012
WaldVCF	1000	1000	4	0.103	0.052	0.012
WaldDiag,MM3	1000	1000	4	0.094	0.051	0.009
Pearson,MM3	1000	1000	4	0.098	0.052	0.015
RSS,MM3	1000	1000	4	0.102	0.055	0.013
Multn,MM3	1000	1000	4	0.098	0.052	0.015
1F 8V						
Wald	1000	1000	2	0.104	0.051	0.013
WaldVCF	1000	1000	2	0.104	0.051	0.013
WaldDiag,MM3	1000	1000	2	0.112	0.053	0.013
Pearson,MM3	1000	1000	2	0.098	0.056	0.014
RSS,MM3	1000	1000	2	0.104	0.053	0.011
Multn,MM3	1000	1000	2	0.098	0.056	0.014
1F 15V						
Wald	1000	1000	27	0.134	0.067	0.014
WaldVCF	1000	1000	27	0.130	0.065	0.014
WaldDiag,MM3	1000	1000	27	0.128	0.065	0.012
Pearson,MM3	1000	1000	27	0.107	0.052	0.008
RSS,MM3	1000	1000	27	0.111	0.048	0.010
Multn,MM3	1000	1000	27	0.107	0.052	0.008
2F 10V						
Wald	1000	1000	22	0.111	0.063	0.010
WaldVCF	1000	1000	22	0.107	0.062	0.010
WaldDiag,MM3	1000	1000	22	0.092	0.041	0.009
Pearson,MM3	1000	1000	22	0.081	0.040	0.010
RSS,MM3	1000	1000	22	0.083	0.042	0.010
Multn,MM3	1000	1000	22	0.106	0.059	0.010
3F 15V						
Wald	1000	1000	57	0.114	0.060	0.008
WaldVCF	1000	1000	57	0.108	0.050	0.007
WaldDiag,MM3	1000	1000	57	0.088	0.040	0.008
Pearson,MM3	1000	1000	57	0.106	0.044	0.011
RSS,MM3	1000	1000	57	0.102	0.047	0.010
Multn,MM3	1000	1000	57	0.108	0.049	0.007

Type I errors ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.110	0.054	0.015
WaldVCF	1000	1000	1	0.106	0.053	0.015
WaldDiag,MM3	1000	1000	1	0.106	0.048	0.008
Pearson,MM3	1000	1000	1	0.103	0.050	0.018
RSS,MM3	1000	1000	1	0.110	0.047	0.017
Multn,MM3	1000	1000	1	0.103	0.050	0.018
1F 8V						
Wald	1000	1000	5	0.114	0.058	0.014
WaldVCF	1000	1000	5	0.113	0.056	0.014
WaldDiag,MM3	1000	1000	5	0.125	0.059	0.014
Pearson,MM3	1000	1000	5	0.104	0.054	0.014
RSS,MM3	1000	1000	5	0.096	0.051	0.014
Multn,MM3	1000	1000	5	0.104	0.053	0.014
1F 15V						
Wald	1000	1000	33	0.117	0.065	0.015
WaldVCF	1000	1000	33	0.117	0.062	0.015
WaldDiag,MM3	1000	1000	33	0.120	0.070	0.021
Pearson,MM3	1000	1000	33	0.093	0.050	0.011
RSS,MM3	1000	1000	33	0.095	0.050	0.011
Multn,MM3	1000	1000	33	0.092	0.050	0.011
2F 10V						
Wald	1000	1000	30	0.125	0.069	0.014
WaldVCF	1000	1000	30	0.118	0.061	0.012
WaldDiag,MM3	1000	1000	30	0.106	0.052	0.017
Pearson,MM3	1000	1000	30	0.105	0.048	0.011
RSS,MM3	1000	1000	30	0.106	0.052	0.009
Multn,MM3	1000	1000	30	0.116	0.062	0.012
3F 15V						
Wald	1000	1000	81	0.122	0.067	0.018
WaldVCF	1000	1000	81	0.109	0.058	0.016
WaldDiag,MM3	1000	1000	81	0.114	0.049	0.011
Pearson,MM3	1000	1000	81	0.100	0.051	0.007
RSS,MM3	1000	1000	81	0.103	0.048	0.007
Multn,MM3	1000	1000	81	0.109	0.059	0.016

Power ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.310	0.207	0.076
WaldVCF	1000	1000	0	0.307	0.207	0.075
WaldDiag,MM3	1000	1000	0	0.137	0.064	0.006
Pearson,MM3	1000	1000	0	0.319	0.206	0.085
RSS,MM3	1000	1000	0	0.323	0.204	0.088
Multn,MM3	1000	1000	0	0.290	0.181	0.061
1F 8V						
Wald	1000	1000	0	0.686	0.552	0.310
WaldVCF	1000	1000	0	0.684	0.547	0.306
WaldDiag,MM3	1000	1000	0	0.454	0.306	0.105
Pearson,MM3	1000	1000	0	0.415	0.272	0.098
RSS,MM3	1000	1000	0	0.510	0.368	0.163
Multn,MM3	1000	1000	0	0.677	0.542	0.299
1F 15V						
Wald	1000	1000	5	0.550	0.418	0.201
WaldVCF	1000	1000	5	0.540	0.410	0.196
WaldDiag,MM3	1000	1000	5	0.352	0.224	0.084
Pearson,MM3	1000	1000	5	0.684	0.565	0.363
RSS,MM3	1000	1000	5	0.678	0.565	0.358
Multn,MM3	1000	1000	5	0.535	0.401	0.194
2F 10V						
Wald	1000	998	13	0.390	0.280	0.121
WaldVCF	1000	998	13	0.171	0.091	0.017
WaldDiag,MM3	1000	998	13	0.073	0.029	0.002
Pearson,MM3	1000	998	13	0.112	0.051	0.009
RSS,MM3	1000	998	13	0.115	0.052	0.008
Multn,MM3	1000	998	13	0.329	0.234	0.102
3F 15V						
Wald	1000	999	20	0.334	0.231	0.085
WaldVCF	1000	999	20	0.321	0.214	0.074
WaldDiag,MM3	1000	999	20	0.178	0.097	0.021
Pearson,MM3	1000	999	20	0.408	0.287	0.112
RSS,MM3	1000	999	20	0.412	0.290	0.114
Multn,MM3	1000	999	20	0.295	0.187	0.061

Power ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.487	0.373	0.181
WaldVCF	1000	1000	0	0.487	0.372	0.180
WaldDiag,MM3	1000	1000	0	0.336	0.197	0.051
Pearson,MM3	1000	1000	0	0.508	0.404	0.196
RSS,MM3	1000	1000	0	0.520	0.418	0.212
Multn,MM3	1000	1000	0	0.481	0.362	0.171
1F 8V						
Wald	1000	1000	1	0.787	0.691	0.439
WaldVCF	1000	1000	1	0.785	0.689	0.436
WaldDiag,MM3	1000	1000	1	0.614	0.474	0.202
Pearson,MM3	1000	1000	1	0.497	0.347	0.148
RSS,MM3	1000	1000	1	0.625	0.462	0.222
Multn,MM3	1000	1000	1	0.781	0.686	0.432
1F 15V						
Wald	1000	1000	4	0.794	0.694	0.457
WaldVCF	1000	1000	4	0.786	0.688	0.455
WaldDiag,MM3	1000	1000	4	0.712	0.569	0.316
Pearson,MM3	1000	1000	4	0.896	0.837	0.673
RSS,MM3	1000	1000	4	0.894	0.846	0.669
Multn,MM3	1000	1000	4	0.784	0.689	0.453
2F 10V						
Wald	1000	1000	6	0.643	0.511	0.269
WaldVCF	1000	1000	6	0.507	0.358	0.143
WaldDiag,MM3	1000	1000	6	0.543	0.400	0.173
Pearson,MM3	1000	1000	6	0.633	0.521	0.297
RSS,MM3	1000	1000	6	0.639	0.512	0.288
Multn,MM3	1000	1000	6	0.611	0.478	0.245
3F 15V						
Wald	1000	1000	30	0.440	0.312	0.125
WaldVCF	1000	1000	30	0.425	0.294	0.113
WaldDiag,MM3	1000	1000	30	0.356	0.236	0.074
Pearson,MM3	1000	1000	30	0.556	0.431	0.226
RSS,MM3	1000	1000	30	0.577	0.460	0.239
Multn,MM3	1000	1000	30	0.412	0.285	0.109

Power ($n = 2500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.886	0.813	0.607
WaldVCF	1000	1000	2	0.886	0.813	0.607
WaldDiag,MM3	1000	1000	2	0.778	0.650	0.383
Pearson,MM3	1000	1000	2	0.919	0.857	0.697
RSS,MM3	1000	1000	2	0.924	0.860	0.702
Multn,MM3	1000	1000	2	0.884	0.811	0.604
1F 8V						
Wald	1000	1000	0	1.000	1.000	0.996
WaldVCF	1000	1000	0	1.000	1.000	0.996
WaldDiag,MM3	1000	1000	0	0.997	0.996	0.952
Pearson,MM3	1000	1000	0	0.978	0.948	0.790
RSS,MM3	1000	1000	0	0.997	0.986	0.938
Multn,MM3	1000	1000	0	1.000	1.000	0.996
1F 15V						
Wald	1000	1000	15	1.000	0.998	0.989
WaldVCF	1000	1000	15	1.000	0.998	0.988
WaldDiag,MM3	1000	1000	15	0.997	0.990	0.958
Pearson,MM3	1000	1000	15	1.000	1.000	1.000
RSS,MM3	1000	1000	15	1.000	1.000	1.000
Multn,MM3	1000	1000	15	1.000	0.998	0.988
2F 10V						
Wald	1000	1000	15	0.801	0.701	0.459
WaldVCF	1000	1000	15	0.790	0.684	0.440
WaldDiag,MM3	1000	1000	15	0.780	0.651	0.373
Pearson,MM3	1000	1000	15	0.745	0.616	0.365
RSS,MM3	1000	1000	15	0.822	0.724	0.495
Multn,MM3	1000	1000	15	0.746	0.616	0.367
3F 15V						
Wald	1000	1000	41	0.794	0.693	0.457
WaldVCF	1000	1000	41	0.774	0.674	0.429
WaldDiag,MM3	1000	1000	41	0.835	0.719	0.446
Pearson,MM3	1000	1000	41	0.897	0.822	0.632
RSS,MM3	1000	1000	41	0.933	0.886	0.736
Multn,MM3	1000	1000	41	0.779	0.680	0.433

Power ($n = 5000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	0	1.000	1.000	1.000
WaldVCF	1000	1000	0	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	0	1.000	1.000	1.000
Pearson,MM3	1000	1000	0	1.000	1.000	1.000
RSS,MM3	1000	1000	0	1.000	1.000	1.000
Multn,MM3	1000	1000	0	1.000	1.000	1.000
1F 8V						
Wald	1000	1000	2	1.000	1.000	1.000
WaldVCF	1000	1000	2	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	2	1.000	1.000	1.000
Pearson,MM3	1000	1000	2	1.000	1.000	1.000
RSS,MM3	1000	1000	2	1.000	1.000	1.000
Multn,MM3	1000	1000	2	1.000	1.000	1.000
1F 15V						
Wald	1000	1000	21	1.000	1.000	1.000
WaldVCF	1000	1000	21	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	21	1.000	1.000	1.000
Pearson,MM3	1000	1000	21	1.000	1.000	1.000
RSS,MM3	1000	1000	21	1.000	1.000	1.000
Multn,MM3	1000	1000	21	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	16	0.961	0.924	0.792
WaldVCF	1000	1000	16	0.954	0.909	0.763
WaldDiag,MM3	1000	1000	16	0.953	0.902	0.727
Pearson,MM3	1000	1000	16	0.940	0.878	0.692
RSS,MM3	1000	1000	16	0.969	0.937	0.827
Multn,MM3	1000	1000	16	0.963	0.924	0.793
3F 15V						
Wald	1000	1000	38	0.869	0.783	0.563
WaldVCF	1000	1000	38	0.855	0.764	0.531
WaldDiag,MM3	1000	1000	38	0.937	0.877	0.684
Pearson,MM3	1000	1000	38	0.939	0.889	0.742
RSS,MM3	1000	1000	38	0.955	0.918	0.792
Multn,MM3	1000	1000	38	0.860	0.767	0.540

Power ($n = 10000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	0	1.000	0.998	0.998
WaldVCF	1000	1000	0	1.000	0.998	0.998
WaldDiag,MM3	1000	1000	0	0.998	0.997	0.973
Pearson,MM3	1000	1000	0	1.000	0.999	0.996
RSS,MM3	1000	1000	0	1.000	0.999	0.998
Multn,MM3	1000	1000	0	1.000	0.998	0.998
1F 8V						
Wald	1000	1000	3	1.000	1.000	1.000
WaldVCF	1000	1000	3	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	3	1.000	1.000	1.000
Pearson,MM3	1000	1000	3	1.000	1.000	1.000
RSS,MM3	1000	1000	3	1.000	1.000	1.000
Multn,MM3	1000	1000	3	1.000	1.000	1.000
1F 15V						
Wald	1000	1000	13	1.000	1.000	1.000
WaldVCF	1000	1000	13	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	13	1.000	1.000	1.000
Pearson,MM3	1000	1000	13	1.000	1.000	1.000
RSS,MM3	1000	1000	13	1.000	1.000	1.000
Multn,MM3	1000	1000	13	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	15	1.000	0.999	0.999
WaldVCF	1000	1000	15	1.000	0.999	0.999
WaldDiag,MM3	1000	1000	15	1.000	1.000	0.999
Pearson,MM3	1000	1000	15	1.000	1.000	0.999
RSS,MM3	1000	1000	15	1.000	1.000	0.999
Multn,MM3	1000	1000	15	1.000	1.000	0.999
3F 15V						
Wald	1000	1000	51	1.000	1.000	1.000
WaldVCF	1000	1000	51	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	51	1.000	1.000	1.000
Pearson,MM3	1000	1000	51	1.000	1.000	1.000
RSS,MM3	1000	1000	51	1.000	1.000	1.000
Multn,MM3	1000	1000	51	1.000	1.000	1.000