Tables of simulation results

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Simple random sampling

Type I errors ($n = 500$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.098	0.053	0.014
WaldVCF	1000	1000	1	0.095	0.051	0.014
WaldDiag,MM3	1000	1000	1	0.051	0.026	0.000
Pearson,MM3	1000	1000	1	0.099	0.047	0.012
RSS,MM3	1000	1000	1	0.097	0.052	0.012
Multn,MM3	1000	1000	1	0.085	0.046	0.014
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	0.117	0.066	0.016
WaldVCF	1000	1000	8	0.112	0.061	0.015
WaldDiag,MM3	1000	1000	8	0.066	0.034	0.006
Pearson,MM3	1000	1000	8	0.099	0.056	0.015
RSS,MM3	1000	1000	8	0.107	0.060	0.019
Multn,MM3	1000	1000	8	0.112	0.060	0.014
2F 10V						
Wald	1000	1000	10	0.107	0.049	0.009
WaldVCF	1000	1000	10	0.102	0.049	0.008
WaldDiag,MM3	1000	1000	10	0.025	0.008	0.000
Pearson,MM3	1000	1000	10	0.096	0.042	0.005
RSS,MM3	1000	1000	10	0.089	0.039	0.004
Multn,MM3	1000	1000	10	0.091	0.043	0.006
3F 15V						
Wald	1000	1000	21	0.115	0.053	0.018
WaldVCF	1000	1000	21	0.108	0.050	0.018
WaldDiag,MM3	1000	1000	21	0.025	0.012	0.006
Pearson,MM3	1000	1000	21	0.082	0.036	0.009
RSS,MM3	1000	1000	21	0.089	0.036	0.008
Multn,MM3	1000	1000	21	0.094	0.044	0.015

Type I errors ($n = 1000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.094	0.044	0.011
WaldVCF	1000	1000	1	0.093	0.044	0.010
WaldDiag,MM3	1000	1000	1	0.055	0.023	0.002
Pearson,MM3	1000	1000	1	0.083	0.038	0.006
RSS,MM3	1000	1000	1	0.085	0.037	0.007
Multn,MM3	1000	1000	1	0.087	0.040	0.008
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	10	0.094	0.044	0.006
WaldVCF	1000	1000	10	0.093	0.041	0.005
WaldDiag,MM3	1000	1000	10	0.068	0.028	0.003
Pearson,MM3	1000	1000	10	0.082	0.033	0.003
RSS,MM3	1000	1000	10	0.074	0.036	0.004
Multn,MM3	1000	1000	10	0.092	0.041	0.006
2F 10V						
Wald	1000	1000	11	0.096	0.050	0.009
WaldVCF	1000	1000	11	0.092	0.044	0.009
WaldDiag,MM3	1000	1000	11	0.045	0.024	0.003
Pearson,MM3	1000	1000	11	0.100	0.044	0.006
RSS,MM3	1000	1000	11	0.092	0.046	0.005
Multn,MM3	1000	1000	11	0.088	0.039	0.009
3F 15V						
Wald	1000	1000	31	0.110	0.052	0.008
WaldVCF	1000	1000	31	0.101	0.045	0.006
WaldDiag,MM3	1000	1000	31	0.059	0.027	0.003
Pearson,MM3	1000	1000	31	0.094	0.047	0.009
RSS,MM3	1000	1000	31	0.093	0.045	0.009
Multn,MM3	1000	1000	31	0.091	0.043	0.006

Type I errors ($n = 2000$)

					Rejection rate		
sim	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Type I errors ($n = 3000$)

					Rejection rate		
sim	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Type I errors ($n = 5000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.096	0.049	0.006
WaldVCF	1000	1000	1	0.093	0.047	0.006
WaldDiag,MM3	1000	1000	1	0.080	0.032	0.007
Pearson,MM3	1000	1000	1	0.084	0.042	0.005
RSS,MM3	1000	1000	1	0.086	0.045	0.005
Multn,MM3	1000	1000	1	0.092	0.047	0.006
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	17	0.113	0.048	0.005
WaldVCF	1000	1000	17	0.109	0.045	0.005
WaldDiag,MM3	1000	1000	17	0.099	0.048	0.004
Pearson,MM3	1000	1000	17	0.099	0.050	0.004
RSS,MM3	1000	1000	17	0.105	0.049	0.003
Multn,MM3	1000	1000	17	0.109	0.045	0.005
2F 10V						
Wald	1000	1000	25	0.115	0.058	0.014
WaldVCF	1000	1000	25	0.107	0.054	0.014
WaldDiag,MM3	1000	1000	25	0.098	0.045	0.007
Pearson,MM3	1000	1000	25	0.092	0.038	0.006
RSS,MM3	1000	1000	25	0.088	0.042	0.006
Multn,MM3	1000	1000	25	0.106	0.053	0.013
3F 15V						
Wald	1000	1000	56	0.098	0.049	0.010
WaldVCF	1000	1000	56	0.087	0.043	0.008
WaldDiag,MM3	1000	1000	56	0.080	0.041	0.006
Pearson,MM3	1000	1000	56	0.097	0.043	0.013
RSS,MM3	1000	1000	56	0.101	0.042	0.012
Multn,MM3	1000	1000	56	0.087	0.042	0.007

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 ($n = 2000$)

					Rejection rate		
sim	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Power ($n = 3000$)

					Rejection rate		
sim	Name	No. repl.	Converged	Rank def.	10%	5%	1%

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

Stratified sampling

Type I errors ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.130	0.073	0.015
WaldVCF	1000	1000	2	0.128	0.073	0.015
WaldDiag,MM3	1000	1000	2	0.048	0.021	0.002
Pearson,MM3	1000	1000	2	0.119	0.068	0.010
RSS,MM3	1000	1000	2	0.120	0.067	0.011
Multn,MM3	1000	1000	2	0.111	0.064	0.011
1F 8V						
Wald	1000	1000	3	0.151	0.092	0.029
WaldVCF	1000	1000	3	0.149	0.091	0.029
WaldDiag,MM3	1000	1000	3	0.077	0.040	0.008
Pearson,MM3	1000	1000	3	0.166	0.091	0.024
RSS,MM3	1000	1000	3	0.165	0.098	0.025
Multn,MM3	1000	1000	3	0.144	0.087	0.029
1F 15V						
Wald	1000	1000	8	0.267	0.180	0.052
WaldVCF	1000	1000	8	0.263	0.175	0.051
WaldDiag,MM3	1000	1000	8	0.173	0.092	0.017
Pearson,MM3	1000	1000	8	0.309	0.214	0.090
RSS,MM3	1000	1000	8	0.317	0.224	0.089
Multn,MM3	1000	1000	8	0.260	0.174	0.051
2F 10V						
Wald	1000	1000	9	0.210	0.120	0.029
WaldVCF	1000	1000	9	0.201	0.110	0.028
WaldDiag,MM3	1000	1000	9	0.062	0.029	0.001
Pearson,MM3	1000	1000	9	0.181	0.095	0.020
RSS,MM3	1000	1000	9	0.193	0.102	0.023
Multn,MM3	1000	1000	9	0.190	0.104	0.023
3F 15V						
Wald	1000	1000	21	0.285	0.168	0.058
WaldVCF	1000	1000	21	0.265	0.157	0.051
WaldDiag,MM3	1000	1000	21	0.098	0.040	0.009
Pearson,MM3	1000	1000	21	0.241	0.141	0.037
RSS,MM3	1000	1000	21	0.247	0.151	0.037
Multn,MM3	1000	1000	21	0.244	0.141	0.049

Type I errors ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.113	0.056	0.014
WaldVCF	1000	1000	2	0.112	0.055	0.014
WaldDiag,MM3	1000	1000	2	0.070	0.035	0.002
Pearson,MM3	1000	1000	2	0.114	0.061	0.011
RSS,MM3	1000	1000	2	0.114	0.059	0.007
Multn,MM3	1000	1000	2	0.104	0.050	0.011
1F 8V						
Wald	1000	1000	3	0.178	0.113	0.025
WaldVCF	1000	1000	3	0.176	0.112	0.025
WaldDiag,MM3	1000	1000	3	0.126	0.060	0.010
Pearson,MM3	1000	1000	3	0.189	0.114	0.026
RSS,MM3	1000	1000	3	0.202	0.118	0.037
Multn,MM3	1000	1000	3	0.175	0.111	0.025
1F 15V						
Wald	1000	1000	17	0.262	0.159	0.056
WaldVCF	1000	1000	17	0.258	0.157	0.054
WaldDiag,MM3	1000	1000	17	0.183	0.099	0.026
Pearson,MM3	1000	1000	17	0.315	0.197	0.076
RSS,MM3	1000	1000	17	0.318	0.201	0.079
Multn,MM3	1000	1000	17	0.255	0.155	0.054
2F 10V						
Wald	1000	1000	8	0.192	0.115	0.031
WaldVCF	1000	1000	8	0.184	0.108	0.029
WaldDiag,MM3	1000	1000	8	0.107	0.045	0.007
Pearson,MM3	1000	1000	8	0.181	0.107	0.024
RSS,MM3	1000	1000	8	0.182	0.108	0.024
Multn,MM3	1000	1000	8	0.179	0.106	0.026
3F 15V						
Wald	1000	1000	27	0.309	0.193	0.065
WaldVCF	1000	1000	27	0.297	0.180	0.061
WaldDiag,MM3	1000	1000	27	0.155	0.088	0.017
Pearson,MM3	1000	1000	27	0.257	0.165	0.053
RSS,MM3	1000	1000	27	0.260	0.177	0.059
Multn,MM3	1000	1000	27	0.287	0.177	0.055

Type I errors ($n = 2000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Type I errors ($n = 3000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Type I errors ($n = 5000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.134	0.069	0.017
WaldVCF	1000	1000	2	0.134	0.068	0.017
WaldDiag,MM3	1000	1000	2	0.114	0.065	0.013
Pearson,MM3	1000	1000	2	0.134	0.061	0.017
RSS,MM3	1000	1000	2	0.136	0.063	0.017
Multn,MM3	1000	1000	2	0.134	0.068	0.016
1F 8V						
Wald	1000	1000	3	0.169	0.097	0.026
WaldVCF	1000	1000	3	0.167	0.095	0.024
WaldDiag,MM3	1000	1000	3	0.129	0.063	0.010
Pearson,MM3	1000	1000	3	0.182	0.104	0.027
RSS,MM3	1000	1000	3	0.182	0.113	0.033
Multn,MM3	1000	1000	3	0.164	0.094	0.024
1F 15V						
Wald	1000	1000	20	0.286	0.165	0.054
WaldVCF	1000	1000	20	0.283	0.164	0.054
WaldDiag,MM3	1000	1000	20	0.222	0.121	0.039
Pearson,MM3	1000	1000	20	0.330	0.213	0.080
RSS,MM3	1000	1000	20	0.345	0.225	0.075
Multn,MM3	1000	1000	20	0.283	0.163	0.054
2F 10V						
Wald	1000	1000	22	0.219	0.137	0.040
WaldVCF	1000	1000	22	0.207	0.128	0.037
WaldDiag,MM3	1000	1000	22	0.166	0.089	0.015
Pearson,MM3	1000	1000	22	0.182	0.112	0.030
RSS,MM3	1000	1000	22	0.204	0.126	0.030
Multn,MM3	1000	1000	22	0.206	0.128	0.038
3F 15V						
Wald	1000	1000	62	0.315	0.199	0.066
WaldVCF	1000	1000	62	0.300	0.186	0.061
WaldDiag,MM3	1000	1000	62	0.226	0.126	0.038
Pearson,MM3	1000	1000	62	0.294	0.178	0.055
RSS,MM3	1000	1000	62	0.294	0.188	0.057
Multn,MM3	1000	1000	62	0.297	0.184	0.059

Type I errors ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	3	0.148	0.086	0.011
WaldVCF	1000	1000	3	0.147	0.086	0.011
WaldDiag,MM3	1000	1000	3	0.132	0.069	0.010
Pearson,MM3	1000	1000	3	0.152	0.079	0.021
RSS,MM3	1000	1000	3	0.153	0.079	0.021
Multn,MM3	1000	1000	3	0.147	0.085	0.011
1F 8V						
Wald	1000	1000	5	0.156	0.089	0.032
WaldVCF	1000	1000	5	0.155	0.088	0.031
WaldDiag,MM3	1000	1000	5	0.138	0.071	0.015
Pearson,MM3	1000	1000	5	0.183	0.123	0.041
RSS,MM3	1000	1000	5	0.190	0.116	0.043
Multn,MM3	1000	1000	5	0.155	0.088	0.030
1F 15V						
Wald	1000	1000	36	0.255	0.158	0.058
WaldVCF	1000	1000	36	0.250	0.158	0.055
WaldDiag,MM3	1000	1000	36	0.226	0.124	0.033
Pearson,MM3	1000	1000	36	0.310	0.199	0.060
RSS,MM3	1000	1000	36	0.321	0.200	0.075
Multn,MM3	1000	1000	36	0.248	0.157	0.055
2F 10V						
Wald	1000	1000	38	0.189	0.108	0.028
WaldVCF	1000	1000	38	0.181	0.104	0.023
WaldDiag,MM3	1000	1000	38	0.156	0.095	0.021
Pearson,MM3	1000	1000	38	0.185	0.101	0.023
RSS,MM3	1000	1000	38	0.187	0.100	0.026
Multn,MM3	1000	1000	38	0.179	0.104	0.025
3F 15V						
Wald	1000	1000	83	0.295	0.170	0.057
WaldVCF	1000	1000	83	0.266	0.156	0.047
WaldDiag,MM3	1000	1000	83	0.217	0.116	0.029
Pearson,MM3	1000	1000	83	0.270	0.163	0.051
RSS,MM3	1000	1000	83	0.271	0.168	0.054
Multn,MM3	1000	1000	83	0.264	0.154	0.046

Power ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.326	0.218	0.082
WaldVCF	1000	1000	2	0.325	0.216	0.080
WaldDiag,MM3	1000	1000	2	0.152	0.073	0.009
Pearson,MM3	1000	1000	2	0.329	0.223	0.090
RSS,MM3	1000	1000	2	0.331	0.230	0.088
Multn,MM3	1000	1000	2	0.306	0.192	0.062
1F 8V						
Wald	1000	1000	1	0.795	0.680	0.451
WaldVCF	1000	1000	1	0.790	0.672	0.441
WaldDiag,MM3	1000	1000	1	0.578	0.413	0.159
Pearson,MM3	1000	1000	1	0.555	0.402	0.173
RSS,MM3	1000	1000	1	0.668	0.504	0.266
Multn,MM3	1000	1000	1	0.789	0.668	0.435
1F 15V						
Wald	1000	1000	8	0.688	0.543	0.299
WaldVCF	1000	1000	8	0.678	0.532	0.293
WaldDiag,MM3	1000	1000	8	0.510	0.359	0.157
Pearson,MM3	1000	1000	8	0.755	0.638	0.395
RSS,MM3	1000	1000	8	0.756	0.642	0.411
Multn,MM3	1000	1000	8	0.668	0.529	0.291
2F 10V						
Wald	1000	1000	5	0.260	0.167	0.053
WaldVCF	1000	1000	5	0.250	0.163	0.052
WaldDiag,MM3	1000	1000	5	0.110	0.064	0.010
Pearson,MM3	1000	1000	5	0.214	0.124	0.039
RSS,MM3	1000	1000	5	0.238	0.148	0.042
Multn,MM3	1000	1000	5	0.235	0.148	0.044
3F 15V						
Wald	1000	1000	28	0.704	0.584	0.342
WaldVCF	1000	1000	28	0.685	0.555	0.312
WaldDiag,MM3	1000	1000	28	0.504	0.355	0.120
Pearson,MM3	1000	1000	28	0.737	0.626	0.389
RSS,MM3	1000	1000	28	0.756	0.644	0.404
Multn,MM3	1000	1000	28	0.656	0.515	0.265

Power ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.413	0.302	0.130
WaldVCF	1000	1000	2	0.411	0.300	0.130
WaldDiag,MM3	1000	1000	2	0.278	0.161	0.039
Pearson,MM3	1000	1000	2	0.395	0.273	0.108
RSS,MM3	1000	1000	2	0.426	0.289	0.122
Multn,MM3	1000	1000	2	0.400	0.295	0.122
1F 8V						
Wald	1000	1000	2	0.958	0.919	0.787
WaldVCF	1000	1000	2	0.958	0.919	0.784
WaldDiag,MM3	1000	1000	2	0.880	0.784	0.513
Pearson,MM3	1000	1000	2	0.840	0.744	0.468
RSS,MM3	1000	1000	2	0.903	0.824	0.619
Multn,MM3	1000	1000	2	0.958	0.918	0.785
1F 15V						
Wald	1000	1000	8	0.872	0.794	0.615
WaldVCF	1000	1000	8	0.868	0.787	0.608
WaldDiag,MM3	1000	1000	8	0.802	0.704	0.487
Pearson,MM3	1000	1000	8	0.942	0.891	0.755
RSS,MM3	1000	1000	8	0.943	0.894	0.764
Multn,MM3	1000	1000	8	0.867	0.786	0.610
2F 10V						
Wald	1000	1000	9	0.481	0.352	0.140
WaldVCF	1000	1000	9	0.465	0.327	0.125
WaldDiag,MM3	1000	1000	9	0.361	0.237	0.074
Pearson,MM3	1000	1000	9	0.446	0.316	0.124
RSS,MM3	1000	1000	9	0.515	0.379	0.173
Multn,MM3	1000	1000	9	0.458	0.323	0.118
3F 15V						
Wald	1000	1000	31	0.460	0.337	0.143
WaldVCF	1000	1000	31	0.440	0.314	0.132
WaldDiag,MM3	1000	1000	31	0.333	0.213	0.071
Pearson,MM3	1000	1000	31	0.463	0.335	0.151
RSS,MM3	1000	1000	31	0.503	0.379	0.185
Multn,MM3	1000	1000	31	0.430	0.307	0.126

Power ($n = 2000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Power ($n = 3000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Power ($n = 5000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.986	0.972	0.896
WaldVCF	1000	1000	0	0.986	0.972	0.896
WaldDiag,MM3	1000	1000	0	0.949	0.899	0.729
Pearson,MM3	1000	1000	0	0.991	0.980	0.922
RSS,MM3	1000	1000	0	0.991	0.984	0.935
Multn,MM3	1000	1000	0	0.986	0.972	0.895
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	1.000	1.000
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	11	1.000	1.000	1.000
WaldVCF	1000	1000	11	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	11	1.000	1.000	0.997
Pearson,MM3	1000	1000	11	1.000	1.000	1.000
RSS,MM3	1000	1000	11	1.000	1.000	1.000
Multn,MM3	1000	1000	11	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	12	0.927	0.866	0.685
WaldVCF	1000	1000	12	0.917	0.857	0.658
WaldDiag,MM3	1000	1000	12	0.921	0.856	0.642
Pearson,MM3	1000	1000	12	0.938	0.889	0.720
RSS,MM3	1000	1000	12	0.953	0.912	0.781
Multn,MM3	1000	1000	12	0.922	0.861	0.675
3F 15V						
Wald	1000	1000	37	0.908	0.853	0.695
WaldVCF	1000	1000	37	0.895	0.838	0.669
WaldDiag,MM3	1000	1000	37	0.938	0.885	0.751
Pearson,MM3	1000	1000	37	0.947	0.892	0.788
RSS,MM3	1000	1000	37	0.949	0.912	0.812
Multn,MM3	1000	1000	37	0.899	0.839	0.677

Power ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.999	0.998	0.986
WaldVCF	1000	1000	0	0.999	0.998	0.986
WaldDiag,MM3	1000	1000	0	0.995	0.988	0.926
Pearson,MM3	1000	1000	0	0.999	0.998	0.981
RSS,MM3	1000	1000	0	0.999	0.998	0.983
Multn,MM3	1000	1000	0	0.999	0.998	0.986
1F 8V						
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 15V						
Wald	1000	1000	18	1.000	1.000	1.000
WaldVCF	1000	1000	18	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	18	1.000	1.000	1.000
Pearson,MM3	1000	1000	18	1.000	1.000	1.000
RSS,MM3	1000	1000	18	1.000	1.000	1.000
Multn,MM3	1000	1000	18	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	18	0.996	0.983	0.946
WaldVCF	1000	1000	18	0.993	0.982	0.940
WaldDiag,MM3	1000	1000	18	0.991	0.978	0.921
Pearson,MM3	1000	1000	18	0.998	0.993	0.971
RSS,MM3	1000	1000	18	0.999	0.998	0.983
Multn,MM3	1000	1000	18	0.994	0.982	0.943
3F 15V						
Wald	1000	1000	65	1.000	1.000	1.000
WaldVCF	1000	1000	65	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	65	1.000	1.000	1.000
Pearson,MM3	1000	1000	65	1.000	1.000	1.000
RSS,MM3	1000	1000	65	1.000	1.000	1.000
Multn,MM3	1000	1000	65	1.000	1.000	1.000

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 ($n = 2000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Type I errors ($n = 3000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

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	88	0.134	0.075	0.011
WaldVCF	1000	1000	88	0.121	0.066	0.010
WaldDiag,MM3	1000	1000	88	0.104	0.051	0.010
Pearson,MM3	1000	1000	88	0.095	0.048	0.006
RSS,MM3	1000	1000	88	0.099	0.051	0.010
Multn,MM3	1000	1000	88	0.121	0.067	0.010

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	1000	999	10	0.202	0.104	0.021
WaldVCF	1000	999	10	0.191	0.096	0.021
WaldDiag,MM3	1000	999	10	0.080	0.034	0.005
Pearson,MM3	1000	999	10	0.215	0.123	0.041
RSS,MM3	1000	999	10	0.219	0.123	0.033
Multn,MM3	1000	999	10	0.162	0.079	0.017
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	15	0.399	0.295	0.117
WaldVCF	1000	1000	15	0.385	0.277	0.110
WaldDiag,MM3	1000	1000	15	0.343	0.224	0.079
Pearson,MM3	1000	1000	15	0.432	0.313	0.139
RSS,MM3	1000	1000	15	0.492	0.362	0.183
Multn,MM3	1000	1000	15	0.381	0.274	0.106
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 ($n = 2000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Power ($n = 3000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

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	15	1.000	0.997	0.988
WaldVCF	1000	1000	15	1.000	0.997	0.982
WaldDiag,MM3	1000	1000	15	0.999	0.998	0.989
Pearson,MM3	1000	1000	15	1.000	1.000	0.998
RSS,MM3	1000	1000	15	1.000	1.000	1.000
Multn,MM3	1000	1000	15	1.000	0.997	0.982
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 ($n = 10000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
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	1.000	1.000
RSS,MM3	1000	1000	1	1.000	1.000	1.000
Multn,MM3	1000	1000	1	1.000	1.000	1.000
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	25	1.000	1.000	1.000
WaldVCF	1000	1000	25	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	25	1.000	1.000	1.000
Pearson,MM3	1000	1000	25	1.000	1.000	1.000
RSS,MM3	1000	1000	25	1.000	1.000	1.000
Multn,MM3	1000	1000	25	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	13	0.980	0.955	0.854
WaldVCF	1000	1000	13	0.979	0.953	0.838
WaldDiag,MM3	1000	1000	13	0.977	0.939	0.833
Pearson,MM3	1000	1000	13	0.997	0.988	0.941
RSS,MM3	1000	1000	13	0.997	0.995	0.967
Multn,MM3	1000	1000	13	0.979	0.954	0.845
3F 15V						
Wald	1000	1000	57	1.000	1.000	1.000
WaldVCF	1000	1000	57	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	57	1.000	1.000	1.000
Pearson,MM3	1000	1000	57	1.000	1.000	1.000
RSS,MM3	1000	1000	57	1.000	1.000	1.000
Multn,MM3	1000	1000	57	1.000	1.000	1.000

Strat-clust sampling

Type I errors ($n = 500$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.121	0.070	0.014
WaldVCF	1000	1000	2	0.119	0.069	0.014
WaldDiag,MM3	1000	1000	2	0.058	0.020	0.000
Pearson,MM3	1000	1000	2	0.112	0.055	0.011
RSS,MM3	1000	1000	2	0.109	0.053	0.007
Multn,MM3	1000	1000	2	0.108	0.060	0.011
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	15	0.171	0.092	0.022
WaldVCF	1000	1000	15	0.169	0.088	0.022
WaldDiag,MM3	1000	1000	15	0.088	0.036	0.007
Pearson,MM3	1000	1000	15	0.190	0.105	0.024
RSS,MM3	1000	1000	15	0.190	0.097	0.024
Multn,MM3	1000	1000	15	0.167	0.087	0.021
2F 10V						
Wald	1000	1000	10	0.161	0.088	0.025
WaldVCF	1000	1000	10	0.155	0.086	0.023
WaldDiag,MM3	1000	1000	10	0.046	0.020	0.002
Pearson,MM3	1000	1000	10	0.133	0.069	0.020
RSS,MM3	1000	1000	10	0.135	0.081	0.019
Multn,MM3	1000	1000	10	0.137	0.078	0.019
3F 15V						
Wald	1000	1000	36	0.178	0.100	0.020
WaldVCF	1000	1000	36	0.163	0.085	0.018
WaldDiag,MM3	1000	1000	36	0.038	0.015	0.002
Pearson,MM3	1000	1000	36	0.132	0.084	0.026
RSS,MM3	1000	1000	36	0.137	0.077	0.020
Multn,MM3	1000	1000	36	0.148	0.066	0.016

Type I errors ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.113	0.066	0.016
WaldVCF	1000	1000	2	0.111	0.066	0.016
WaldDiag,MM3	1000	1000	2	0.073	0.030	0.008
Pearson,MM3	1000	1000	2	0.104	0.068	0.020
RSS,MM3	1000	1000	2	0.105	0.062	0.025
Multn,MM3	1000	1000	2	0.109	0.065	0.016
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	12	0.133	0.068	0.023
WaldVCF	1000	1000	12	0.131	0.068	0.023
WaldDiag,MM3	1000	1000	12	0.088	0.044	0.013
Pearson,MM3	1000	1000	12	0.179	0.100	0.027
RSS,MM3	1000	1000	12	0.174	0.089	0.021
Multn,MM3	1000	1000	12	0.130	0.068	0.023
2F 10V						
Wald	1000	1000	14	0.147	0.080	0.029
WaldVCF	1000	1000	14	0.141	0.076	0.025
WaldDiag,MM3	1000	1000	14	0.080	0.041	0.005
Pearson,MM3	1000	1000	14	0.135	0.073	0.020
RSS,MM3	1000	1000	14	0.141	0.071	0.020
Multn,MM3	1000	1000	14	0.134	0.074	0.023
3F 15V						
Wald	1000	1000	37	0.182	0.100	0.025
WaldVCF	1000	1000	37	0.172	0.089	0.023
WaldDiag,MM3	1000	1000	37	0.084	0.043	0.008
Pearson,MM3	1000	1000	37	0.160	0.089	0.018
RSS,MM3	1000	1000	37	0.165	0.089	0.020
Multn,MM3	1000	1000	37	0.162	0.085	0.022

Type I errors ($n = 2000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Type I errors ($n = 3000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Type I errors ($n = 5000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.126	0.074	0.018
WaldVCF	1000	1000	2	0.125	0.074	0.018
WaldDiag,MM3	1000	1000	2	0.108	0.051	0.007
Pearson,MM3	1000	1000	2	0.128	0.071	0.020
RSS,MM3	1000	1000	2	0.133	0.062	0.018
Multn,MM3	1000	1000	2	0.125	0.074	0.018
1F 8V						
Wald	1000	1000	4	0.130	0.067	0.017
WaldVCF	1000	1000	4	0.128	0.065	0.017
WaldDiag,MM3	1000	1000	4	0.113	0.057	0.014
Pearson,MM3	1000	1000	4	0.146	0.078	0.018
RSS,MM3	1000	1000	4	0.153	0.083	0.018
Multn,MM3	1000	1000	4	0.128	0.065	0.017
1F 15V						
Wald	1000	1000	34	0.173	0.097	0.021
WaldVCF	1000	1000	34	0.172	0.095	0.020
WaldDiag,MM3	1000	1000	34	0.145	0.083	0.020
Pearson,MM3	1000	1000	34	0.192	0.105	0.031
RSS,MM3	1000	1000	34	0.199	0.107	0.028
Multn,MM3	1000	1000	34	0.173	0.094	0.020
2F 10V						
Wald	1000	1000	30	0.138	0.076	0.024
WaldVCF	1000	1000	30	0.133	0.070	0.024
WaldDiag,MM3	1000	1000	30	0.111	0.061	0.018
Pearson,MM3	1000	1000	30	0.131	0.077	0.022
RSS,MM3	1000	1000	30	0.148	0.071	0.026
Multn,MM3	1000	1000	30	0.131	0.068	0.022
3F 15V						
Wald	1000	1000	64	0.183	0.103	0.029
WaldVCF	1000	1000	64	0.169	0.096	0.026
WaldDiag,MM3	1000	1000	64	0.133	0.069	0.017
Pearson,MM3	1000	1000	64	0.160	0.088	0.023
RSS,MM3	1000	1000	64	0.161	0.094	0.025
Multn,MM3	1000	1000	64	0.169	0.096	0.026

Type I errors ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.115	0.056	0.015
WaldVCF	1000	1000	2	0.113	0.056	0.014
WaldDiag,MM3	1000	1000	2	0.112	0.054	0.012
Pearson,MM3	1000	1000	2	0.110	0.062	0.013
RSS,MM3	1000	1000	2	0.112	0.061	0.015
Multn,MM3	1000	1000	2	0.114	0.056	0.014
1F 8V						
Wald	1000	1000	5	0.125	0.059	0.015
WaldVCF	1000	1000	5	0.123	0.059	0.015
WaldDiag,MM3	1000	1000	5	0.103	0.053	0.011
Pearson,MM3	1000	1000	5	0.136	0.078	0.019
RSS,MM3	1000	1000	5	0.139	0.076	0.016
Multn,MM3	1000	1000	5	0.123	0.059	0.015
1F 15V						
Wald	1000	1000	33	0.113	0.063	0.012
WaldVCF	1000	1000	33	0.110	0.062	0.012
WaldDiag,MM3	1000	1000	33	0.112	0.058	0.015
Pearson,MM3	1000	1000	33	0.154	0.089	0.021
RSS,MM3	1000	1000	33	0.146	0.080	0.018
Multn,MM3	1000	1000	33	0.110	0.062	0.012
2F 10V						
Wald	1000	1000	25	0.170	0.098	0.028
WaldVCF	1000	1000	25	0.166	0.093	0.026
WaldDiag,MM3	1000	1000	25	0.153	0.078	0.019
Pearson,MM3	1000	1000	25	0.141	0.075	0.032
RSS,MM3	1000	1000	25	0.156	0.085	0.029
Multn,MM3	1000	1000	25	0.165	0.093	0.026
3F 15V						
Wald	1000	1000	85	0.182	0.108	0.032
WaldVCF	1000	1000	85	0.168	0.094	0.031
WaldDiag,MM3	1000	1000	85	0.126	0.077	0.024
Pearson,MM3	1000	1000	85	0.170	0.102	0.024
RSS,MM3	1000	1000	85	0.172	0.106	0.027
Multn,MM3	1000	1000	85	0.164	0.093	0.030

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	8	0.184	0.108	0.033
WaldVCF	1000	998	8	0.173	0.102	0.030
WaldDiag,MM3	1000	998	8	0.063	0.029	0.004
Pearson,MM3	1000	998	8	0.162	0.095	0.026
RSS,MM3	1000	998	8	0.168	0.093	0.031
Multn,MM3	1000	998	8	0.160	0.092	0.024
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	7	0.563	0.440	0.216
WaldVCF	1000	1000	7	0.540	0.403	0.189
WaldDiag,MM3	1000	1000	7	0.468	0.318	0.115
Pearson,MM3	1000	1000	7	0.503	0.373	0.157
RSS,MM3	1000	1000	7	0.550	0.428	0.210
Multn,MM3	1000	1000	7	0.534	0.399	0.189
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 ($n = 2000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Power ($n = 3000$)

					Rejection rate		
1F 5V							
1F 8V							
1F 15V							
2F 10V							
3F 15V							
	Name	No. repl.	Converged	Rank def.	10%	5%	1%

Power ($n = 5000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 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	9	0.441	0.313	0.142
WaldVCF	1000	1000	9	0.422	0.296	0.129
WaldDiag,MM3	1000	1000	9	0.475	0.331	0.135
Pearson,MM3	1000	1000	9	0.565	0.445	0.224
RSS,MM3	1000	1000	9	0.597	0.469	0.259
Multn,MM3	1000	1000	9	0.424	0.300	0.134
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	18	1.000	1.000	1.000
WaldVCF	1000	1000	18	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	18	1.000	1.000	1.000
Pearson,MM3	1000	1000	18	1.000	1.000	1.000
RSS,MM3	1000	1000	18	1.000	1.000	1.000
Multn,MM3	1000	1000	18	1.000	1.000	1.000
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