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	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	0.098	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 15V						
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
2F 10V						
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
3F 15V						
Wald	1000	1000	23	0.116	0.068	0.009
WaldVCF	1000	1000	23	0.114	0.066	0.008
WaldDiag,MM3	1000	1000	23	0.094	0.046	0.008
Pearson,MM3	1000	1000	23	0.111	0.050	0.007
RSS,MM3	1000	1000	23	0.117	0.056	0.007
Multn,MM3	1000	1000	23	0.114	0.066	0.008

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	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	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 15V						
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
2F 10V						
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
3F 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

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	1	0.142	0.083	0.020
WaldVCF	1000	1000	1	0.130	0.083	0.017
WaldDiag,MM3	1000	1000	1	0.119	0.055	0.016
Pearson,MM3	1000	1000	1	0.140	0.083	0.021
RSS,MM3	1000	1000	1	0.143	0.078	0.021
Multn,MM3	1000	1000	1	0.137	0.083	0.018
1F 8V						
Wald	1000	1000	1	0.155	0.099	0.030
WaldVCF	1000	1000	1	0.126	0.073	0.019
WaldDiag,MM3	1000	1000	1	0.056	0.027	0.002
Pearson,MM3	1000	1000	1	0.109	0.060	0.009
RSS,MM3	1000	1000	1	0.109	0.062	0.009
Multn,MM3	1000	1000	1	0.133	0.080	0.021
1F 15V						
Wald	1000	1000	6	0.178	0.106	0.030
WaldVCF	1000	1000	6	0.149	0.090	0.023
WaldDiag,MM3	1000	1000	6	0.121	0.070	0.012
Pearson,MM3	1000	1000	6	0.156	0.088	0.022
RSS,MM3	1000	1000	6	0.158	0.095	0.023
Multn,MM3	1000	1000	6	0.169	0.104	0.029
2F 10V						
Wald	1000	1000	6	0.337	0.232	0.100
WaldVCF	1000	1000	6	0.173	0.100	0.026
WaldDiag,MM3	1000	1000	6	0.091	0.038	0.010
Pearson,MM3	1000	1000	6	0.175	0.090	0.026
RSS,MM3	1000	1000	6	0.157	0.096	0.024
Multn,MM3	1000	1000	6	0.275	0.170	0.064
3F 15V						
Wald	1000	1000	13	0.383	0.262	0.085
WaldVCF	1000	1000	13	0.280	0.156	0.045
WaldDiag,MM3	1000	1000	13	0.180	0.091	0.014
Pearson,MM3	1000	1000	13	0.302	0.179	0.053
RSS,MM3	1000	1000	13	0.308	0.187	0.055
Multn,MM3	1000	1000	13	0.400	0.271	0.096

Type I errors ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.126	0.079	0.022
WaldVCF	1000	1000	1	0.111	0.066	0.015
WaldDiag,MM3	1000	1000	1	0.074	0.037	0.007
Pearson,MM3	1000	1000	1	0.099	0.051	0.019
RSS,MM3	1000	1000	1	0.094	0.052	0.018
Multn,MM3	1000	1000	1	0.115	0.072	0.017
1F 8V						
Wald	1000	1000	2	0.261	0.162	0.052
WaldVCF	1000	1000	2	0.185	0.108	0.027
WaldDiag,MM3	1000	1000	2	0.117	0.051	0.012
Pearson,MM3	1000	1000	2	0.173	0.103	0.029
RSS,MM3	1000	1000	2	0.185	0.099	0.022
Multn,MM3	1000	1000	2	0.239	0.150	0.043
1F 15V						
Wald	1000	1000	12	0.620	0.501	0.267
WaldVCF	1000	1000	12	0.333	0.203	0.057
WaldDiag,MM3	1000	1000	12	0.162	0.079	0.012
Pearson,MM3	1000	1000	12	0.286	0.173	0.051
RSS,MM3	1000	1000	12	0.292	0.174	0.046
Multn,MM3	1000	1000	12	0.614	0.482	0.260
2F 10V						
Wald	1000	1000	10	0.294	0.202	0.068
WaldVCF	1000	1000	10	0.221	0.134	0.032
WaldDiag,MM3	1000	1000	10	0.108	0.049	0.009
Pearson,MM3	1000	1000	10	0.199	0.123	0.023
RSS,MM3	1000	1000	10	0.203	0.118	0.023
Multn,MM3	1000	1000	10	0.294	0.202	0.070
3F 15V						
Wald	1000	1000	44	0.543	0.406	0.180
WaldVCF	1000	1000	44	0.335	0.210	0.069
WaldDiag,MM3	1000	1000	44	0.162	0.086	0.021
Pearson,MM3	1000	1000	44	0.236	0.143	0.037
RSS,MM3	1000	1000	44	0.241	0.155	0.044
Multn,MM3	1000	1000	44	0.576	0.453	0.214

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	1	0.144	0.077	0.020
WaldVCF	1000	1000	1	0.142	0.075	0.020
WaldDiag,MM3	1000	1000	1	0.126	0.061	0.012
Pearson,MM3	1000	1000	1	0.146	0.071	0.014
RSS,MM3	1000	1000	1	0.142	0.074	0.017
Multn,MM3	1000	1000	1	0.141	0.076	0.020
1F 8V						
Wald	1000	1000	6	0.211	0.115	0.028
WaldVCF	1000	1000	6	0.193	0.106	0.023
WaldDiag,MM3	1000	1000	6	0.156	0.078	0.017
Pearson,MM3	1000	1000	6	0.187	0.102	0.024
RSS,MM3	1000	1000	6	0.201	0.110	0.026
Multn,MM3	1000	1000	6	0.205	0.112	0.026
1F 15V						
Wald	1000	1000	33	0.336	0.219	0.074
WaldVCF	1000	1000	33	0.284	0.174	0.044
WaldDiag,MM3	1000	1000	33	0.221	0.130	0.024
Pearson,MM3	1000	1000	33	0.305	0.202	0.068
RSS,MM3	1000	1000	33	0.317	0.206	0.069
Multn,MM3	1000	1000	33	0.349	0.227	0.078
2F 10V						
Wald	1000	1000	28	0.216	0.134	0.034
WaldVCF	1000	1000	28	0.204	0.121	0.029
WaldDiag,MM3	1000	1000	28	0.167	0.080	0.023
Pearson,MM3	1000	1000	28	0.189	0.104	0.029
RSS,MM3	1000	1000	28	0.194	0.123	0.029
Multn,MM3	1000	1000	28	0.212	0.130	0.032
3F 15V						
Wald	1000	1000	59	0.357	0.242	0.078
WaldVCF	1000	1000	59	0.309	0.201	0.061
WaldDiag,MM3	1000	1000	59	0.216	0.114	0.027
Pearson,MM3	1000	1000	59	0.275	0.175	0.051
RSS,MM3	1000	1000	59	0.294	0.181	0.057
Multn,MM3	1000	1000	59	0.354	0.244	0.086

Type I errors ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	4	0.154	0.077	0.011
WaldVCF	1000	1000	4	0.153	0.077	0.011
WaldDiag,MM3	1000	1000	4	0.123	0.073	0.013
Pearson,MM3	1000	1000	4	0.149	0.079	0.022
RSS,MM3	1000	1000	4	0.153	0.081	0.020
Multn,MM3	1000	1000	4	0.152	0.075	0.011
1F 8V						
Wald	1000	1000	6	0.165	0.088	0.022
WaldVCF	1000	1000	6	0.158	0.082	0.021
WaldDiag,MM3	1000	1000	6	0.129	0.067	0.018
Pearson,MM3	1000	1000	6	0.168	0.089	0.025
RSS,MM3	1000	1000	6	0.172	0.099	0.026
Multn,MM3	1000	1000	6	0.162	0.088	0.021
1F 15V						
Wald	1000	1000	44	0.291	0.176	0.055
WaldVCF	1000	1000	44	0.265	0.159	0.048
WaldDiag,MM3	1000	1000	44	0.205	0.118	0.033
Pearson,MM3	1000	1000	44	0.309	0.203	0.075
RSS,MM3	1000	1000	44	0.321	0.203	0.075
Multn,MM3	1000	1000	44	0.292	0.178	0.057
2F 10V						
Wald	1000	1000	27	0.201	0.127	0.035
WaldVCF	1000	1000	27	0.190	0.117	0.033
WaldDiag,MM3	1000	1000	27	0.159	0.086	0.016
Pearson,MM3	1000	1000	27	0.178	0.102	0.032
RSS,MM3	1000	1000	27	0.184	0.112	0.034
Multn,MM3	1000	1000	27	0.197	0.121	0.033
3F 15V						
Wald	1000	1000	87	0.333	0.212	0.070
WaldVCF	1000	1000	87	0.306	0.180	0.062
WaldDiag,MM3	1000	1000	87	0.234	0.135	0.036
Pearson,MM3	1000	1000	87	0.276	0.166	0.051
RSS,MM3	1000	1000	87	0.281	0.181	0.055
Multn,MM3	1000	1000	87	0.326	0.205	0.067

Power ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.833	0.744	0.525
WaldVCF	1000	1000	2	0.828	0.738	0.515
WaldDiag,MM3	1000	1000	2	0.707	0.567	0.298
Pearson,MM3	1000	1000	2	0.854	0.780	0.576
RSS,MM3	1000	1000	2	0.865	0.796	0.607
Multn,MM3	1000	1000	2	0.829	0.738	0.514
1F 8V						
Wald	1000	1000	2	0.424	0.307	0.141
WaldVCF	1000	1000	2	0.373	0.258	0.094
WaldDiag,MM3	1000	1000	2	0.187	0.093	0.015
Pearson,MM3	1000	1000	2	0.398	0.268	0.096
RSS,MM3	1000	1000	2	0.415	0.274	0.105
Multn,MM3	1000	1000	2	0.368	0.242	0.084
1F 15V						
Wald	1000	1000	2	1.000	1.000	1.000
WaldVCF	1000	1000	2	1.000	1.000	0.999
WaldDiag,MM3	1000	1000	2	1.000	0.999	0.978
Pearson,MM3	1000	1000	2	0.999	0.993	0.964
RSS,MM3	1000	1000	2	1.000	1.000	0.987
Multn,MM3	1000	1000	2	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	1	0.833	0.754	0.567
WaldVCF	1000	1000	1	0.609	0.474	0.215
WaldDiag,MM3	1000	1000	1	0.449	0.282	0.086
Pearson,MM3	1000	1000	1	0.491	0.317	0.116
RSS,MM3	1000	1000	1	0.567	0.419	0.175
Multn,MM3	1000	1000	1	0.777	0.682	0.463
3F 15V						
Wald	1000	1000	13	0.996	0.992	0.957
WaldVCF	1000	1000	13	0.992	0.973	0.910
WaldDiag,MM3	1000	1000	13	0.991	0.972	0.892
Pearson,MM3	1000	1000	13	0.999	0.999	0.995
RSS,MM3	1000	1000	13	0.999	0.999	0.994
Multn,MM3	1000	1000	13	0.996	0.990	0.950

Power ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.510	0.405	0.212
WaldVCF	1000	1000	1	0.483	0.362	0.186
WaldDiag,MM3	1000	1000	1	0.361	0.236	0.079
Pearson,MM3	1000	1000	1	0.554	0.420	0.248
RSS,MM3	1000	1000	1	0.560	0.421	0.251
Multn,MM3	1000	1000	1	0.482	0.364	0.188
1F 8V						
Wald	1000	1000	1	0.934	0.882	0.736
WaldVCF	1000	1000	1	0.859	0.774	0.542
WaldDiag,MM3	1000	1000	1	0.793	0.672	0.396
Pearson,MM3	1000	1000	1	0.675	0.534	0.278
RSS,MM3	1000	1000	1	0.785	0.666	0.414
Multn,MM3	1000	1000	1	0.916	0.855	0.697
1F 15V						
Wald	1000	1000	13	0.983	0.969	0.910
WaldVCF	1000	1000	13	0.905	0.834	0.588
WaldDiag,MM3	1000	1000	13	0.822	0.712	0.425
Pearson,MM3	1000	1000	13	0.973	0.945	0.867
RSS,MM3	1000	1000	13	0.968	0.946	0.864
Multn,MM3	1000	1000	13	0.971	0.950	0.859
2F 10V						
Wald	1000	1000	9	0.435	0.319	0.142
WaldVCF	1000	1000	9	0.320	0.204	0.060
WaldDiag,MM3	1000	1000	9	0.225	0.133	0.038
Pearson,MM3	1000	1000	9	0.357	0.252	0.113
RSS,MM3	1000	1000	9	0.344	0.244	0.100
Multn,MM3	1000	1000	9	0.402	0.291	0.116
3F 15V						
Wald	1000	1000	31	0.718	0.602	0.342
WaldVCF	1000	1000	31	0.515	0.361	0.142
WaldDiag,MM3	1000	1000	31	0.368	0.237	0.061
Pearson,MM3	1000	1000	31	0.486	0.333	0.129
RSS,MM3	1000	1000	31	0.518	0.369	0.156
Multn,MM3	1000	1000	31	0.750	0.633	0.387

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	0.938	0.892	0.749
WaldVCF	1000	1000	0	0.938	0.892	0.747
WaldDiag,MM3	1000	1000	0	0.871	0.786	0.554
Pearson,MM3	1000	1000	0	0.963	0.926	0.821
RSS,MM3	1000	1000	0	0.964	0.930	0.829
Multn,MM3	1000	1000	0	0.937	0.892	0.747
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	16	1.000	1.000	1.000
WaldVCF	1000	1000	16	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	16	1.000	1.000	1.000
Pearson,MM3	1000	1000	16	1.000	1.000	1.000
RSS,MM3	1000	1000	16	1.000	1.000	1.000
Multn,MM3	1000	1000	16	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	13	0.928	0.875	0.706
WaldVCF	1000	1000	13	0.918	0.857	0.675
WaldDiag,MM3	1000	1000	13	0.944	0.877	0.699
Pearson,MM3	1000	1000	13	0.964	0.933	0.813
RSS,MM3	1000	1000	13	0.975	0.958	0.877
Multn,MM3	1000	1000	13	0.926	0.875	0.707
3F 15V						
Wald	1000	1000	45	0.999	0.998	0.987
WaldVCF	1000	1000	45	0.998	0.997	0.974
WaldDiag,MM3	1000	1000	45	1.000	1.000	1.000
Pearson,MM3	1000	1000	45	1.000	1.000	0.989
RSS,MM3	1000	1000	45	1.000	1.000	1.000
Multn,MM3	1000	1000	45	1.000	0.998	0.991

Power ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	1	1.000	0.999
WaldVCF	1000	1000	0	1	1.000	0.999
WaldDiag,MM3	1000	1000	0	1	0.999	0.996
Pearson,MM3	1000	1000	0	1	1.000	1.000
RSS,MM3	1000	1000	0	1	1.000	1.000
Multn,MM3	1000	1000	0	1	1.000	0.999
1F 8V						
Wald	1000	1000	3	1	1.000	1.000
WaldVCF	1000	1000	3	1	1.000	1.000
WaldDiag,MM3	1000	1000	3	1	1.000	1.000
Pearson,MM3	1000	1000	3	1	1.000	1.000
RSS,MM3	1000	1000	3	1	1.000	1.000
Multn,MM3	1000	1000	3	1	1.000	1.000
1F 15V						
Wald	1000	1000	18	1	1.000	1.000
WaldVCF	1000	1000	18	1	1.000	1.000
WaldDiag,MM3	1000	1000	18	1	1.000	1.000
Pearson,MM3	1000	1000	18	1	1.000	1.000
RSS,MM3	1000	1000	18	1	1.000	1.000
Multn,MM3	1000	1000	18	1	1.000	1.000
2F 10V						
Wald	1000	1000	7	1	1.000	1.000
WaldVCF	1000	1000	7	1	1.000	1.000
WaldDiag,MM3	1000	1000	7	1	1.000	1.000
Pearson,MM3	1000	1000	7	1	1.000	1.000
RSS,MM3	1000	1000	7	1	1.000	1.000
Multn,MM3	1000	1000	7	1	1.000	1.000
3F 15V						
Wald	1000	1000	77	1	0.999	0.992
WaldVCF	1000	1000	77	1	0.999	0.992
WaldDiag,MM3	1000	1000	77	1	1.000	0.999
Pearson,MM3	1000	1000	77	1	1.000	1.000
RSS,MM3	1000	1000	77	1	1.000	1.000
Multn,MM3	1000	1000	77	1	0.999	0.993

Cluster sampling

Type I errors ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	4	0.115	0.057	0.015
WaldVCF	1000	1000	4	0.109	0.052	0.014
WaldDiag,MM3	1000	1000	4	0.082	0.039	0.008
Pearson,MM3	1000	1000	4	0.103	0.061	0.010
RSS,MM3	1000	1000	4	0.105	0.052	0.010
Multn,MM3	1000	1000	4	0.111	0.054	0.014
1F 8V						
Wald	1000	1000	4	0.129	0.072	0.031
WaldVCF	1000	1000	4	0.095	0.048	0.009
WaldDiag,MM3	1000	1000	4	0.031	0.012	0.000
Pearson,MM3	1000	1000	4	0.068	0.030	0.004
RSS,MM3	1000	1000	4	0.070	0.027	0.004
Multn,MM3	1000	1000	4	0.102	0.057	0.011
1F 15V						
Wald	1000	1000	3	0.150	0.082	0.025
WaldVCF	1000	1000	3	0.123	0.063	0.019
WaldDiag,MM3	1000	1000	3	0.112	0.061	0.020
Pearson,MM3	1000	1000	3	0.110	0.066	0.015
RSS,MM3	1000	1000	3	0.109	0.064	0.016
Multn,MM3	1000	1000	3	0.139	0.078	0.023
2F 10V						
Wald	1000	1000	6	0.344	0.233	0.117
WaldVCF	1000	1000	6	0.127	0.070	0.018
WaldDiag,MM3	1000	1000	6	0.063	0.029	0.004
Pearson,MM3	1000	1000	6	0.076	0.032	0.006
RSS,MM3	1000	1000	6	0.083	0.033	0.005
Multn,MM3	1000	1000	6	0.251	0.160	0.057
3F 15V						
Wald	1000	1000	25	0.244	0.153	0.049
WaldVCF	1000	1000	25	0.149	0.073	0.014
WaldDiag,MM3	1000	1000	25	0.113	0.057	0.006
Pearson,MM3	1000	1000	25	0.100	0.052	0.007
RSS,MM3	1000	1000	25	0.105	0.049	0.007
Multn,MM3	1000	1000	25	0.260	0.167	0.057

Type I errors ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.117	0.068	0.012
WaldVCF	1000	1000	1	0.102	0.061	0.011
WaldDiag,MM3	1000	1000	1	0.070	0.027	0.003
Pearson,MM3	1000	1000	1	0.086	0.052	0.007
RSS,MM3	1000	1000	1	0.087	0.051	0.009
Multn,MM3	1000	1000	1	0.108	0.060	0.011
1F 8V						
Wald	1000	1000	3	0.196	0.126	0.039
WaldVCF	1000	1000	3	0.130	0.071	0.012
WaldDiag,MM3	1000	1000	3	0.094	0.047	0.007
Pearson,MM3	1000	1000	3	0.107	0.048	0.010
RSS,MM3	1000	1000	3	0.111	0.051	0.007
Multn,MM3	1000	1000	3	0.172	0.107	0.033
1F 15V						
Wald	1000	1000	18	0.504	0.396	0.208
WaldVCF	1000	1000	18	0.175	0.092	0.014
WaldDiag,MM3	1000	1000	18	0.107	0.047	0.006
Pearson,MM3	1000	1000	18	0.094	0.044	0.008
RSS,MM3	1000	1000	18	0.097	0.041	0.004
Multn,MM3	1000	1000	18	0.499	0.374	0.197
2F 10V						
Wald	1000	1000	13	0.191	0.113	0.031
WaldVCF	1000	1000	13	0.117	0.062	0.010
WaldDiag,MM3	1000	1000	13	0.063	0.026	0.003
Pearson,MM3	1000	1000	13	0.083	0.039	0.007
RSS,MM3	1000	1000	13	0.088	0.041	0.006
Multn,MM3	1000	1000	13	0.193	0.113	0.036
3F 15V						
Wald	1000	1000	35	0.288	0.183	0.057
WaldVCF	1000	1000	35	0.139	0.067	0.012
WaldDiag,MM3	1000	1000	35	0.062	0.028	0.005
Pearson,MM3	1000	1000	35	0.096	0.046	0.010
RSS,MM3	1000	1000	35	0.092	0.048	0.006
Multn,MM3	1000	1000	35	0.371	0.250	0.109

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	1	0.087	0.037	0.005
WaldVCF	1000	1000	1	0.083	0.037	0.003
WaldDiag,MM3	1000	1000	1	0.077	0.042	0.006
Pearson,MM3	1000	1000	1	0.082	0.040	0.005
RSS,MM3	1000	1000	1	0.083	0.043	0.004
Multn,MM3	1000	1000	1	0.083	0.037	0.003
1F 8V						
Wald	1000	1000	3	0.140	0.072	0.015
WaldVCF	1000	1000	3	0.126	0.068	0.012
WaldDiag,MM3	1000	1000	3	0.115	0.057	0.012
Pearson,MM3	1000	1000	3	0.101	0.055	0.006
RSS,MM3	1000	1000	3	0.109	0.048	0.007
Multn,MM3	1000	1000	3	0.135	0.072	0.013
1F 15V						
Wald	1000	1000	25	0.183	0.104	0.026
WaldVCF	1000	1000	25	0.141	0.070	0.017
WaldDiag,MM3	1000	1000	25	0.130	0.077	0.014
Pearson,MM3	1000	1000	25	0.110	0.055	0.003
RSS,MM3	1000	1000	25	0.111	0.057	0.005
Multn,MM3	1000	1000	25	0.191	0.110	0.029
2F 10V						
Wald	1000	1000	23	0.154	0.084	0.025
WaldVCF	1000	1000	23	0.137	0.076	0.019
WaldDiag,MM3	1000	1000	23	0.105	0.063	0.013
Pearson,MM3	1000	1000	23	0.116	0.055	0.013
RSS,MM3	1000	1000	23	0.119	0.063	0.013
Multn,MM3	1000	1000	23	0.151	0.084	0.024
3F 15V						
Wald	1000	1000	46	0.152	0.083	0.022
WaldVCF	1000	1000	46	0.122	0.061	0.018
WaldDiag,MM3	1000	1000	46	0.119	0.051	0.011
Pearson,MM3	1000	1000	46	0.098	0.056	0.011
RSS,MM3	1000	1000	46	0.101	0.048	0.010
Multn,MM3	1000	1000	46	0.160	0.087	0.026

Type I errors ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.112	0.053	0.009
WaldVCF	1000	1000	1	0.109	0.053	0.008
WaldDiag,MM3	1000	1000	1	0.103	0.054	0.008
Pearson,MM3	1000	1000	1	0.100	0.054	0.008
RSS,MM3	1000	1000	1	0.102	0.051	0.010
Multn,MM3	1000	1000	1	0.109	0.053	0.008
1F 8V						
Wald	1000	1000	6	0.128	0.067	0.011
WaldVCF	1000	1000	6	0.119	0.061	0.011
WaldDiag,MM3	1000	1000	6	0.117	0.058	0.015
Pearson,MM3	1000	1000	6	0.090	0.043	0.013
RSS,MM3	1000	1000	6	0.099	0.043	0.012
Multn,MM3	1000	1000	6	0.125	0.063	0.011
1F 15V						
Wald	1000	1000	40	0.143	0.081	0.017
WaldVCF	1000	1000	40	0.126	0.066	0.015
WaldDiag,MM3	1000	1000	40	0.123	0.062	0.014
Pearson,MM3	1000	1000	40	0.109	0.044	0.008
RSS,MM3	1000	1000	40	0.102	0.046	0.012
Multn,MM3	1000	1000	40	0.147	0.084	0.018
2F 10V						
Wald	1000	1000	25	0.124	0.066	0.017
WaldVCF	1000	1000	25	0.114	0.057	0.015
WaldDiag,MM3	1000	1000	25	0.096	0.052	0.009
Pearson,MM3	1000	1000	25	0.081	0.042	0.011
RSS,MM3	1000	1000	25	0.099	0.044	0.010
Multn,MM3	1000	1000	25	0.118	0.061	0.016
3F 15V						
Wald	1000	1000	116	0.128	0.074	0.020
WaldVCF	1000	1000	116	0.112	0.063	0.018
WaldDiag,MM3	1000	1000	116	0.103	0.057	0.008
Pearson,MM3	1000	1000	116	0.106	0.051	0.019
RSS,MM3	1000	1000	116	0.099	0.053	0.014
Multn,MM3	1000	1000	116	0.125	0.073	0.020

Power ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.875	0.788	0.580
WaldVCF	1000	1000	0	0.870	0.783	0.564
WaldDiag,MM3	1000	1000	0	0.754	0.613	0.327
Pearson,MM3	1000	1000	0	0.871	0.775	0.564
RSS,MM3	1000	1000	0	0.894	0.817	0.623
Multn,MM3	1000	1000	0	0.872	0.783	0.570
1F 8V						
Wald	1000	1000	1	0.286	0.195	0.078
WaldVCF	1000	1000	1	0.242	0.154	0.048
WaldDiag,MM3	1000	1000	1	0.104	0.042	0.005
Pearson,MM3	1000	1000	1	0.237	0.147	0.050
RSS,MM3	1000	1000	1	0.249	0.156	0.049
Multn,MM3	1000	1000	1	0.241	0.151	0.048
1F 15V						
Wald	1000	1000	3	1.000	0.999	0.997
WaldVCF	1000	1000	3	0.999	0.999	0.994
WaldDiag,MM3	1000	1000	3	0.997	0.996	0.950
Pearson,MM3	1000	1000	3	0.993	0.978	0.872
RSS,MM3	1000	1000	3	0.997	0.993	0.957
Multn,MM3	1000	1000	3	1.000	0.999	0.997
2F 10V						
Wald	1000	1000	2	0.728	0.623	0.451
WaldVCF	1000	1000	2	0.428	0.292	0.090
WaldDiag,MM3	1000	1000	2	0.279	0.139	0.026
Pearson,MM3	1000	1000	2	0.274	0.154	0.041
RSS,MM3	1000	1000	2	0.352	0.207	0.061
Multn,MM3	1000	1000	2	0.646	0.544	0.325
3F 15V						
Wald	1000	1000	13	1.000	0.999	0.978
WaldVCF	1000	1000	13	0.999	0.988	0.953
WaldDiag,MM3	1000	1000	13	0.995	0.985	0.934
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	0.999	0.978

Power ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.466	0.357	0.157
WaldVCF	1000	1000	0	0.444	0.329	0.134
WaldDiag,MM3	1000	1000	0	0.308	0.195	0.049
Pearson,MM3	1000	1000	0	0.432	0.320	0.138
RSS,MM3	1000	1000	0	0.477	0.351	0.167
Multn,MM3	1000	1000	0	0.450	0.337	0.141
1F 8V						
Wald	1000	1000	0	0.934	0.902	0.766
WaldVCF	1000	1000	0	0.882	0.798	0.549
WaldDiag,MM3	1000	1000	0	0.702	0.563	0.266
Pearson,MM3	1000	1000	0	0.684	0.507	0.228
RSS,MM3	1000	1000	0	0.792	0.681	0.400
Multn,MM3	1000	1000	0	0.927	0.893	0.747
1F 15V						
Wald	1000	1000	9	0.900	0.816	0.629
WaldVCF	1000	1000	9	0.588	0.444	0.195
WaldDiag,MM3	1000	1000	9	0.486	0.352	0.120
Pearson,MM3	1000	1000	9	0.868	0.779	0.561
RSS,MM3	1000	1000	9	0.847	0.749	0.525
Multn,MM3	1000	1000	9	0.851	0.751	0.540
2F 10V						
Wald	1000	1000	13	0.492	0.365	0.179
WaldVCF	1000	1000	13	0.368	0.254	0.098
WaldDiag,MM3	1000	1000	13	0.401	0.273	0.105
Pearson,MM3	1000	1000	13	0.589	0.472	0.255
RSS,MM3	1000	1000	13	0.573	0.467	0.242
Multn,MM3	1000	1000	13	0.471	0.347	0.155
3F 15V						
Wald	1000	1000	34	0.755	0.621	0.360
WaldVCF	1000	1000	34	0.525	0.371	0.143
WaldDiag,MM3	1000	1000	34	0.589	0.430	0.181
Pearson,MM3	1000	1000	34	0.787	0.668	0.435
RSS,MM3	1000	1000	34	0.793	0.678	0.436
Multn,MM3	1000	1000	34	0.801	0.683	0.435

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	2	0.995	0.983	0.935
WaldVCF	1000	1000	2	0.995	0.983	0.934
WaldDiag,MM3	1000	1000	2	0.975	0.948	0.809
Pearson,MM3	1000	1000	2	0.996	0.993	0.955
RSS,MM3	1000	1000	2	0.996	0.994	0.966
Multn,MM3	1000	1000	2	0.994	0.983	0.935
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	0.982
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	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	0.998
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	12	0.701	0.573	0.329
WaldVCF	1000	1000	12	0.671	0.546	0.289
WaldDiag,MM3	1000	1000	12	0.700	0.558	0.305
Pearson,MM3	1000	1000	12	0.871	0.791	0.586
RSS,MM3	1000	1000	12	0.872	0.816	0.635
Multn,MM3	1000	1000	12	0.695	0.567	0.328
3F 15V						
Wald	1000	1000	41	1.000	1.000	0.991
WaldVCF	1000	1000	41	1.000	0.999	0.984
WaldDiag,MM3	1000	1000	41	1.000	1.000	0.998
Pearson,MM3	1000	1000	41	0.990	0.981	0.887
RSS,MM3	1000	1000	41	0.999	0.997	0.982
Multn,MM3	1000	1000	41	1.000	1.000	0.996

Power ($n = 10000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	0	1	1	1.000
WaldVCF	1000	1000	0	1	1	1.000
WaldDiag,MM3	1000	1000	0	1	1	1.000
Pearson,MM3	1000	1000	0	1	1	1.000
RSS,MM3	1000	1000	0	1	1	1.000
Multn,MM3	1000	1000	0	1	1	1.000
1F 8V						
Wald	1000	1000	1	1	1	1.000
WaldVCF	1000	1000	1	1	1	1.000
WaldDiag,MM3	1000	1000	1	1	1	1.000
Pearson,MM3	1000	1000	1	1	1	1.000
RSS,MM3	1000	1000	1	1	1	1.000
Multn,MM3	1000	1000	1	1	1	1.000
1F 15V						
Wald	1000	1000	16	1	1	1.000
WaldVCF	1000	1000	16	1	1	1.000
WaldDiag,MM3	1000	1000	16	1	1	1.000
Pearson,MM3	1000	1000	16	1	1	1.000
RSS,MM3	1000	1000	16	1	1	1.000
Multn,MM3	1000	1000	16	1	1	1.000
2F 10V						
Wald	1000	1000	18	1	1	1.000
WaldVCF	1000	1000	18	1	1	0.999
WaldDiag,MM3	1000	1000	18	1	1	1.000
Pearson,MM3	1000	1000	18	1	1	1.000
RSS,MM3	1000	1000	18	1	1	1.000
Multn,MM3	1000	1000	18	1	1	0.999
3F 15V						
Wald	1000	1000	57	1	1	1.000
WaldVCF	1000	1000	57	1	1	1.000
WaldDiag,MM3	1000	1000	57	1	1	1.000
Pearson,MM3	1000	1000	57	1	1	1.000
RSS,MM3	1000	1000	57	1	1	1.000
Multn,MM3	1000	1000	57	1	1	1.000

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	0.116	0.063	0.012
WaldVCF	1000	1000	1	0.111	0.062	0.010
WaldDiag,MM3	1000	1000	1	0.096	0.045	0.005
Pearson,MM3	1000	1000	1	0.110	0.062	0.013
RSS,MM3	1000	1000	1	0.102	0.065	0.011
Multn,MM3	1000	1000	1	0.112	0.062	0.011
1F 8V						
Wald	1000	1000	0	0.130	0.076	0.019
WaldVCF	1000	1000	0	0.099	0.053	0.008
WaldDiag,MM3	1000	1000	0	0.041	0.014	0.001
Pearson,MM3	1000	1000	0	0.086	0.040	0.005
RSS,MM3	1000	1000	0	0.083	0.039	0.005
Multn,MM3	1000	1000	0	0.109	0.060	0.010
1F 15V						
Wald	1000	1000	4	0.148	0.083	0.019
WaldVCF	1000	1000	4	0.122	0.066	0.010
WaldDiag,MM3	1000	1000	4	0.095	0.048	0.010
Pearson,MM3	1000	1000	4	0.124	0.060	0.011
RSS,MM3	1000	1000	4	0.122	0.066	0.012
Multn,MM3	1000	1000	4	0.142	0.082	0.014
2F 10V						
Wald	1000	1000	0	0.272	0.177	0.070
WaldVCF	1000	1000	0	0.115	0.058	0.013
WaldDiag,MM3	1000	1000	0	0.052	0.019	0.004
Pearson,MM3	1000	1000	0	0.120	0.054	0.013
RSS,MM3	1000	1000	0	0.113	0.054	0.007
Multn,MM3	1000	1000	0	0.209	0.120	0.044
3F 15V						
Wald	1000	1000	20	0.267	0.176	0.050
WaldVCF	1000	1000	20	0.189	0.105	0.026
WaldDiag,MM3	1000	1000	20	0.127	0.070	0.011
Pearson,MM3	1000	1000	20	0.175	0.106	0.025
RSS,MM3	1000	1000	20	0.181	0.105	0.021
Multn,MM3	1000	1000	20	0.286	0.190	0.061

Type I errors ($n = 1000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.119	0.067	0.023
WaldVCF	1000	1000	1	0.111	0.059	0.018
WaldDiag,MM3	1000	1000	1	0.071	0.038	0.005
Pearson,MM3	1000	1000	1	0.115	0.063	0.013
RSS,MM3	1000	1000	1	0.117	0.068	0.014
Multn,MM3	1000	1000	1	0.112	0.059	0.022
1F 8V						
Wald	1000	1000	4	0.206	0.117	0.029
WaldVCF	1000	1000	4	0.134	0.070	0.014
WaldDiag,MM3	1000	1000	4	0.089	0.042	0.006
Pearson,MM3	1000	1000	4	0.133	0.067	0.011
RSS,MM3	1000	1000	4	0.135	0.063	0.009
Multn,MM3	1000	1000	4	0.183	0.104	0.022
1F 15V						
Wald	1000	1000	12	0.429	0.308	0.139
WaldVCF	1000	1000	12	0.172	0.095	0.013
WaldDiag,MM3	1000	1000	12	0.079	0.031	0.004
Pearson,MM3	1000	1000	12	0.145	0.071	0.013
RSS,MM3	1000	1000	12	0.149	0.077	0.007
Multn,MM3	1000	1000	12	0.424	0.298	0.130
2F 10V						
Wald	1000	1000	10	0.202	0.123	0.044
WaldVCF	1000	1000	10	0.142	0.084	0.022
WaldDiag,MM3	1000	1000	10	0.072	0.034	0.006
Pearson,MM3	1000	1000	10	0.119	0.067	0.016
RSS,MM3	1000	1000	10	0.120	0.066	0.020
Multn,MM3	1000	1000	10	0.208	0.131	0.044
3F 15V						
Wald	1000	1000	33	0.347	0.250	0.087
WaldVCF	1000	1000	33	0.195	0.105	0.028
WaldDiag,MM3	1000	1000	33	0.091	0.042	0.009
Pearson,MM3	1000	1000	33	0.155	0.081	0.018
RSS,MM3	1000	1000	33	0.154	0.086	0.017
Multn,MM3	1000	1000	33	0.397	0.283	0.111

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	1	0.127	0.062	0.018
WaldVCF	1000	1000	1	0.124	0.061	0.017
WaldDiag,MM3	1000	1000	1	0.102	0.052	0.012
Pearson,MM3	1000	1000	1	0.121	0.062	0.017
RSS,MM3	1000	1000	1	0.127	0.065	0.015
Multn,MM3	1000	1000	1	0.124	0.062	0.018
1F 8V						
Wald	1000	1000	4	0.131	0.076	0.010
WaldVCF	1000	1000	4	0.125	0.068	0.009
WaldDiag,MM3	1000	1000	4	0.113	0.059	0.008
Pearson,MM3	1000	1000	4	0.149	0.075	0.018
RSS,MM3	1000	1000	4	0.140	0.081	0.017
Multn,MM3	1000	1000	4	0.129	0.076	0.010
1F 15V						
Wald	1000	1000	26	0.195	0.112	0.028
WaldVCF	1000	1000	26	0.164	0.084	0.018
WaldDiag,MM3	1000	1000	26	0.126	0.061	0.014
Pearson,MM3	1000	1000	26	0.168	0.089	0.018
RSS,MM3	1000	1000	26	0.169	0.095	0.020
Multn,MM3	1000	1000	26	0.206	0.127	0.032
2F 10V						
Wald	1000	1000	18	0.151	0.079	0.015
WaldVCF	1000	1000	18	0.132	0.071	0.012
WaldDiag,MM3	1000	1000	18	0.099	0.046	0.010
Pearson,MM3	1000	1000	18	0.127	0.064	0.020
RSS,MM3	1000	1000	18	0.133	0.067	0.017
Multn,MM3	1000	1000	18	0.149	0.076	0.014
3F 15V						
Wald	1000	1000	64	0.193	0.119	0.035
WaldVCF	1000	1000	64	0.169	0.094	0.025
WaldDiag,MM3	1000	1000	64	0.134	0.069	0.018
Pearson,MM3	1000	1000	64	0.179	0.096	0.029
RSS,MM3	1000	1000	64	0.168	0.099	0.028
Multn,MM3	1000	1000	64	0.200	0.117	0.039

Type I errors ($n = 10000$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	2	0.104	0.054	0.016
WaldVCF	1000	1000	2	0.102	0.054	0.015
WaldDiag,MM3	1000	1000	2	0.087	0.050	0.010
Pearson,MM3	1000	1000	2	0.108	0.051	0.020
RSS,MM3	1000	1000	2	0.112	0.056	0.018
Multn,MM3	1000	1000	2	0.101	0.054	0.016
1F 8V						
Wald	1000	1000	11	0.130	0.074	0.011
WaldVCF	1000	1000	11	0.122	0.072	0.010
WaldDiag,MM3	1000	1000	11	0.111	0.058	0.011
Pearson,MM3	1000	1000	11	0.117	0.064	0.017
RSS,MM3	1000	1000	11	0.129	0.071	0.019
Multn,MM3	1000	1000	11	0.126	0.074	0.011
1F 15V						
Wald	1000	1000	44	0.189	0.107	0.023
WaldVCF	1000	1000	44	0.165	0.097	0.018
WaldDiag,MM3	1000	1000	44	0.147	0.074	0.018
Pearson,MM3	1000	1000	44	0.186	0.102	0.035
RSS,MM3	1000	1000	44	0.180	0.110	0.028
Multn,MM3	1000	1000	44	0.191	0.111	0.024
2F 10V						
Wald	1000	1000	28	0.150	0.085	0.032
WaldVCF	1000	1000	28	0.134	0.082	0.028
WaldDiag,MM3	1000	1000	28	0.135	0.071	0.015
Pearson,MM3	1000	1000	28	0.160	0.083	0.019
RSS,MM3	1000	1000	28	0.162	0.088	0.020
Multn,MM3	1000	1000	28	0.142	0.084	0.031
3F 15V						
Wald	1000	1000	97	0.176	0.095	0.020
WaldVCF	1000	1000	97	0.156	0.075	0.013
WaldDiag,MM3	1000	1000	97	0.135	0.067	0.013
Pearson,MM3	1000	1000	97	0.140	0.078	0.019
RSS,MM3	1000	1000	97	0.153	0.082	0.013
Multn,MM3	1000	1000	97	0.169	0.088	0.018

Power ($n = 500$)

Name	No. repl.	Converged	Rank def.	Rejection rate 10%	5%	1%
1F 5V						
Wald	1000	1000	0	0.955	0.922	0.799
WaldVCF	1000	1000	0	0.952	0.920	0.790
WaldDiag,MM3	1000	1000	0	0.896	0.798	0.545
Pearson,MM3	1000	1000	0	0.973	0.953	0.879
RSS,MM3	1000	1000	0	0.974	0.955	0.886
Multn,MM3	1000	1000	0	0.952	0.920	0.792
1F 8V						
Wald	1000	999	3	0.425	0.304	0.142
WaldVCF	1000	999	3	0.386	0.258	0.101
WaldDiag,MM3	1000	999	3	0.168	0.074	0.009
Pearson,MM3	1000	999	3	0.436	0.301	0.118
RSS,MM3	1000	999	3	0.452	0.310	0.130
Multn,MM3	1000	999	3	0.382	0.250	0.100
1F 15V						
Wald	1000	1000	1	1.000	1.000	0.999
WaldVCF	1000	1000	1	1.000	1.000	0.999
WaldDiag,MM3	1000	1000	1	0.999	0.999	0.990
Pearson,MM3	1000	1000	1	0.996	0.981	0.901
RSS,MM3	1000	1000	1	0.999	0.998	0.984
Multn,MM3	1000	1000	1	1.000	1.000	0.999
2F 10V						
Wald	1000	1000	0	0.843	0.751	0.549
WaldVCF	1000	1000	0	0.586	0.432	0.184
WaldDiag,MM3	1000	1000	0	0.416	0.251	0.066
Pearson,MM3	1000	1000	0	0.440	0.286	0.097
RSS,MM3	1000	1000	0	0.545	0.398	0.161
Multn,MM3	1000	1000	0	0.780	0.689	0.436
3F 15V						
Wald	1000	1000	11	0.994	0.991	0.950
WaldVCF	1000	1000	11	0.989	0.977	0.913
WaldDiag,MM3	1000	1000	11	0.977	0.958	0.879
Pearson,MM3	1000	1000	11	1.000	1.000	0.997
RSS,MM3	1000	1000	11	1.000	1.000	0.995
Multn,MM3	1000	1000	11	0.993	0.990	0.949

Power ($n = 1000$)

				Rejection rate		
Name	No. repl.	Converged	Rank def.	10%	5%	1%
1F 5V						
Wald	1000	1000	1	0.506	0.379	0.188
WaldVCF	1000	1000	1	0.485	0.357	0.165
WaldDiag,MM3	1000	1000	1	0.340	0.213	0.053
Pearson,MM3	1000	1000	1	0.510	0.376	0.167
RSS,MM3	1000	1000	1	0.525	0.403	0.192
Multn,MM3	1000	1000	1	0.485	0.364	0.168
1F 8V						
Wald	1000	1000	1	0.955	0.908	0.756
WaldVCF	1000	1000	1	0.894	0.804	0.560
WaldDiag,MM3	1000	1000	1	0.737	0.579	0.278
Pearson,MM3	1000	1000	1	0.726	0.568	0.292
RSS,MM3	1000	1000	1	0.820	0.712	0.442
Multn,MM3	1000	1000	1	0.947	0.891	0.746
1F 15V						
Wald	1000	1000	10	0.942	0.889	0.726
WaldVCF	1000	1000	10	0.726	0.588	0.321
WaldDiag,MM3	1000	1000	10	0.642	0.478	0.224
Pearson,MM3	1000	1000	10	0.916	0.848	0.678
RSS,MM3	1000	1000	10	0.912	0.832	0.666
Multn,MM3	1000	1000	10	0.906	0.845	0.644
2F 10V						
Wald	1000	1000	8	0.453	0.312	0.132
WaldVCF	1000	1000	8	0.318	0.193	0.069
WaldDiag,MM3	1000	1000	8	0.266	0.160	0.040
Pearson,MM3	1000	1000	8	0.363	0.246	0.103
RSS,MM3	1000	1000	8	0.384	0.268	0.110
Multn,MM3	1000	1000	8	0.420	0.280	0.120
3F 15V						
Wald	1000	1000	28	0.662	0.526	0.287
WaldVCF	1000	1000	28	0.464	0.319	0.129
WaldDiag,MM3	1000	1000	28	0.392	0.267	0.094
Pearson,MM3	1000	1000	28	0.607	0.461	0.231
RSS,MM3	1000	1000	28	0.653	0.517	0.288
Multn,MM3	1000	1000	28	0.688	0.567	0.329

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	1	0.993	0.990	0.945
WaldVCF	1000	1000	1	0.993	0.990	0.944
WaldDiag,MM3	1000	1000	1	0.985	0.960	0.879
Pearson,MM3	1000	1000	1	0.997	0.995	0.965
RSS,MM3	1000	1000	1	0.999	0.995	0.972
Multn,MM3	1000	1000	1	0.993	0.989	0.944
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	12	1.000	1.000	1.000
WaldVCF	1000	1000	12	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	12	1.000	1.000	1.000
Pearson,MM3	1000	1000	12	1.000	1.000	1.000
RSS,MM3	1000	1000	12	1.000	1.000	1.000
Multn,MM3	1000	1000	12	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	9	0.832	0.738	0.523
WaldVCF	1000	1000	9	0.797	0.691	0.459
WaldDiag,MM3	1000	1000	9	0.865	0.793	0.553
Pearson,MM3	1000	1000	9	0.923	0.873	0.729
RSS,MM3	1000	1000	9	0.949	0.904	0.785
Multn,MM3	1000	1000	9	0.825	0.728	0.506
3F 15V						
Wald	1000	1000	46	0.902	0.848	0.682
WaldVCF	1000	1000	46	0.875	0.795	0.605
WaldDiag,MM3	1000	1000	46	0.938	0.889	0.763
Pearson,MM3	1000	1000	46	0.960	0.942	0.853
RSS,MM3	1000	1000	46	0.970	0.947	0.881
Multn,MM3	1000	1000	46	0.904	0.844	0.687

Power ($n = 10000$)

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	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	27	1.000	1.000	1.000
WaldVCF	1000	1000	27	1.000	1.000	1.000
WaldDiag,MM3	1000	1000	27	1.000	1.000	1.000
Pearson,MM3	1000	1000	27	1.000	1.000	1.000
RSS,MM3	1000	1000	27	1.000	1.000	1.000
Multn,MM3	1000	1000	27	1.000	1.000	1.000
2F 10V						
Wald	1000	1000	26	0.864	0.785	0.567
WaldVCF	1000	1000	26	0.845	0.764	0.527
WaldDiag,MM3	1000	1000	26	0.927	0.862	0.673
Pearson,MM3	1000	1000	26	0.896	0.842	0.631
RSS,MM3	1000	1000	26	0.908	0.868	0.700
Multn,MM3	1000	1000	26	0.860	0.781	0.560
3F 15V						
Wald	1000	1000	70	0.807	0.714	0.480
WaldVCF	1000	1000	70	0.774	0.672	0.434
WaldDiag,MM3	1000	1000	70	0.870	0.783	0.537
Pearson,MM3	1000	1000	70	0.920	0.856	0.707
RSS,MM3	1000	1000	70	0.920	0.877	0.728
Multn,MM3	1000	1000	70	0.802	0.712	0.478