

Sibpair QTL Power

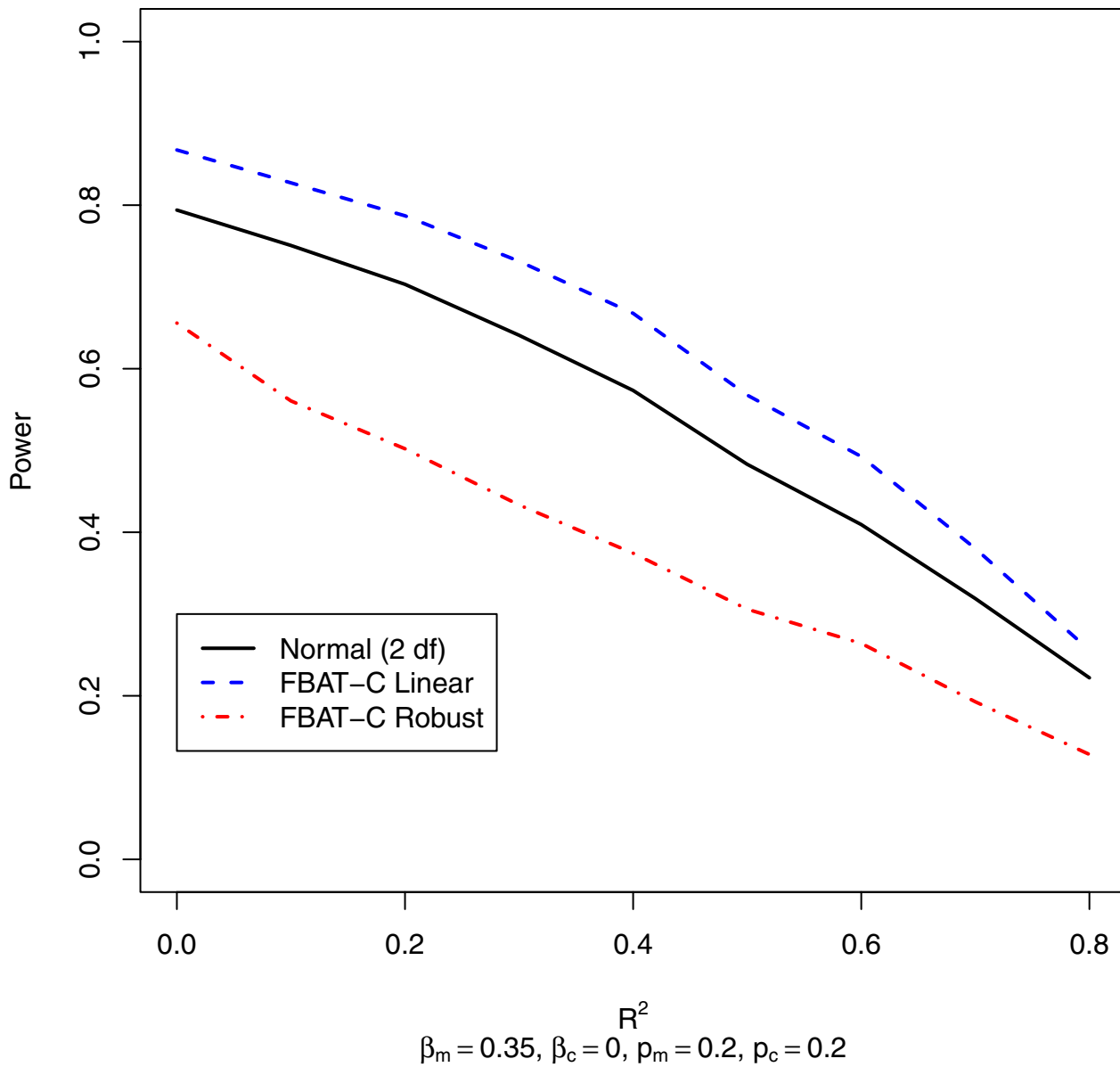


Figure VII: Power for discordant sibpairs of the test of X_m conditional on X_c for a continuous trait. Results are only shown for R^2 up to 0.8, as the normal model is unstable for higher values.

Sibpair QTL Validity with Population Stratification

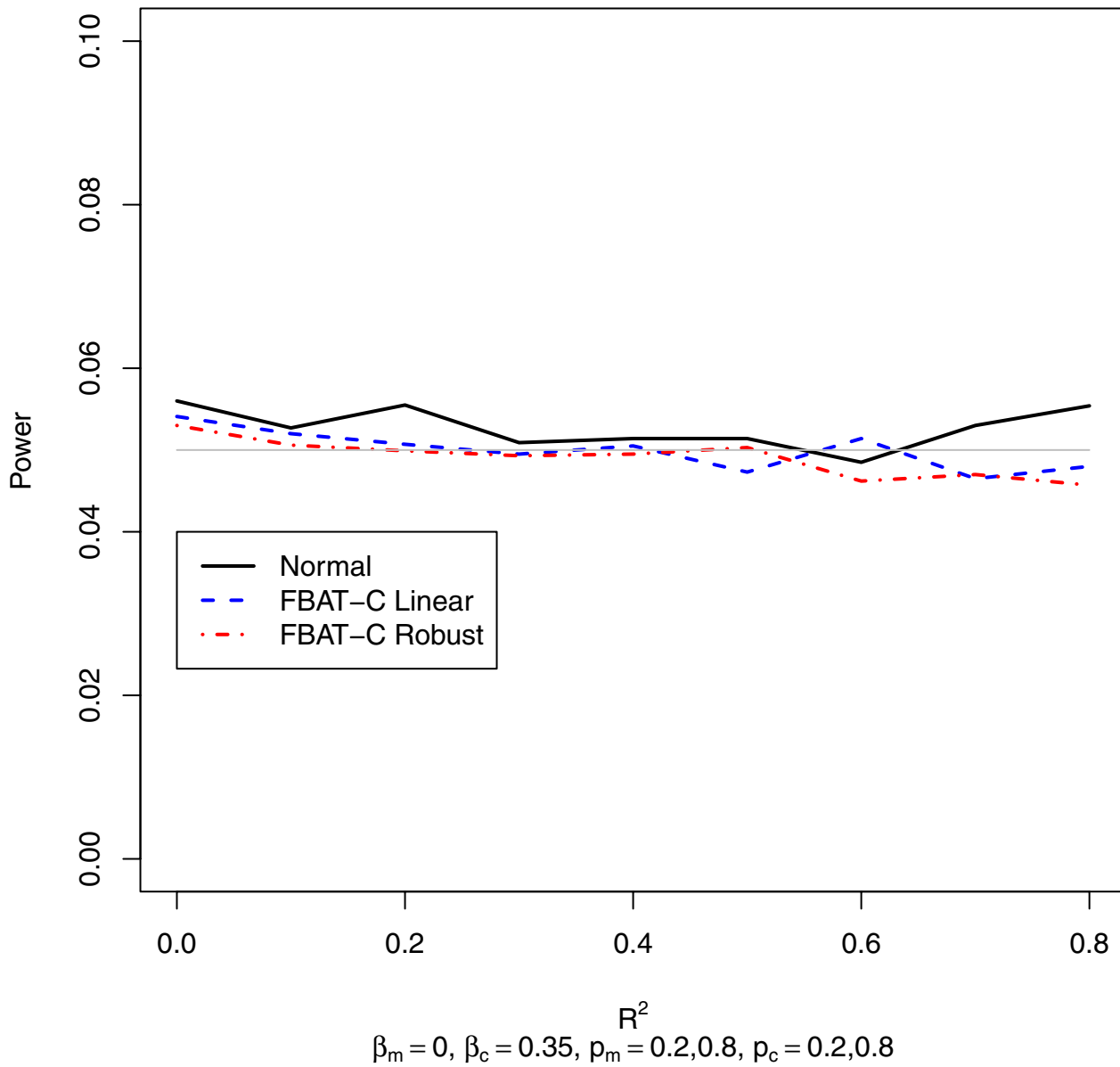


Figure VIII: Empirical type I error rate for discordant sibpairs under population substructure. Results are only shown for R^2 up to 0.8, as the normal model is unstable for higher values.

β_0	e^{β_m}	e^{β_c}	K	R^2	FBAT-C Log-Linear	FBAT-C Robust	
-2	1	1.5	0.16	0	0.0518	0.0516	
				0.2	0.0482	0.0497	
				0.5	0.0398	0.0480	
				0.8	0.0247	0.0523	
	3	0.27	0.27	0	0.0503	0.0499	
				0.2	0.0480	0.0497	
				0.5	0.0457	0.0538	
				0.8	0.0333	0.0517	
	-4	1.5	0.022	0.022	0	0.0514	0.0518
					0.2	0.0479	0.0500
					0.5	0.0425	0.0502
					0.8	0.0244	0.0519
3		0.035	0.035	0	0.0510	0.0519	
				0.2	0.0518	0.0505	
				0.5	0.0462	0.0520	
				0.8	0.0394	0.0555	

Table VI: FBAT-C validity results for model misspecification under a logistic model, with empirical type I error rate 0.05. Trios were simulated with the allele frequency of all markers 0.2, and the pairwise R^2 between each of the markers and the population prevalence α is as specified in the table.