Computer Software for Association Mapping

	Multiple-locus methods					Single-locus methods		
Features	AMplus	bigRR	glmnet	LMM-Lasso	MLMM	r2VIM	FaST-LMM	GEMMA
purpose built [†]	✓	✓	Х	✓	✓	✓	/	√
user manual	✓	X	1	×	✓	×	✓	✓
all snps fitted simultaneously	1	✓	✓	✓	×	×	×	×
capacity to include other fixed effects ‡	1	✓	✓	X	1	1	✓	✓
$limited\ memory^{\star}$	1	X	X	×	×	X	✓	X
best set of snp returned as result $^{\uparrow}$	✓	X	X	X	1	×	×	×
error checking	✓	X	Х	X	Х	X	✓	×

 $[\]overline{\dagger}$ computer software specifically designed for the analysis of data from GWAS

 $^{^{\}ddagger}$ allows for the effect of population structure to be included as additional fixed effects

 $^{^{\}star}$ able to deal with data larger than the memory capacity of the computer

 $[\]uparrow$ no need to determine which marker loci are significant relative to some threshold or further analysis to calculate the significance of the findings.