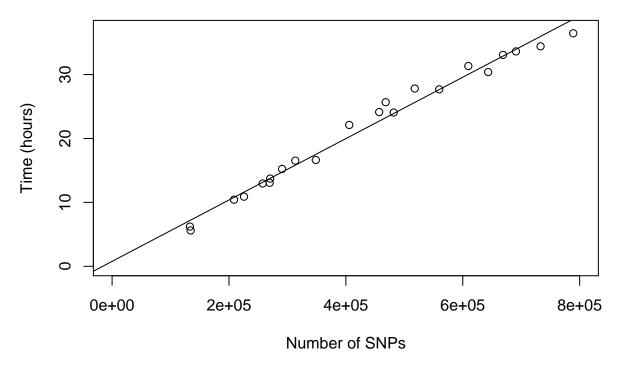
Time required for plink to run on Biobank 2016-08-04

Timings for:

- 120000 samples
- 15 covariates
- \bullet linear model
- 9478363 SNPs
- $\bullet\,$ Single core per chromosome

1 34.418889 733133 2 36.462222 789073 3 33.074444 668873 4 33.626667 691063 5 31.344167 609553 6 30.385556 643483 7 27.695556 559809 8 27.818889 517853 9 22.114722 405843 10 24.067778 481873 11 25.678889 468143 12 24.130000 457013 13 16.639444 348590 14 16.533889 313493 15 13.723333 270480 16 15.231944 290853 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218			
2 36.462222 789072 3 33.074444 668873 4 33.626667 691062 5 31.344167 609559 6 30.385556 643488 7 27.695556 559809 8 27.818889 517857 9 22.114722 405848 10 24.067778 481873 11 25.678889 468149 12 24.130000 457012 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290859 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	chr	hrs	nsnp
3 33.074444 668873 4 33.626667 691063 5 31.344167 609559 6 30.385556 643488 7 27.695556 559809 8 27.818889 517853 9 22.114722 405848 10 24.067778 481873 11 25.678889 468149 12 24.130000 457013 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290859 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	1	34.418889	733132
4 33.626667 69106 5 31.344167 609559 6 30.385556 643488 7 27.695556 559809 8 27.818889 517857 9 22.114722 405848 10 24.067778 481873 11 25.678889 468149 12 24.130000 457017 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290853 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	2	36.462222	789072
5 31.344167 609559 6 30.385556 643488 7 27.695556 559809 8 27.818889 51785' 9 22.114722 405848 10 24.067778 48187; 11 25.678889 468149 12 24.130000 45701' 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290853 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	3	33.074444	668873
6 30.385556 643488 7 27.695556 559809 8 27.818889 51785' 9 22.114722 405848 10 24.067778 481873 11 25.678889 468149 12 24.130000 45701' 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290859 17 12.955278 257649 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	4	33.626667	691061
7 27.695556 559809 8 27.818889 517857 9 22.114722 405848 10 24.067778 481873 11 25.678889 468149 12 24.130000 457017 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290859 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	5	31.344167	609559
8 27.818889 51785' 9 22.114722 405848' 10 24.067778 48187' 11 25.678889 468149' 12 24.130000 45701' 13 16.639444 348590' 14 16.533889 313499' 15 13.723333 270480' 16 15.231944 290859' 17 12.955278 257649' 18 13.065000 269629' 19 10.892778 225739' 20 10.421389 208640' 21 6.212222 133218	6	30.385556	643488
9 22.114722 405848 10 24.067778 481873 11 25.678889 468149 12 24.130000 457012 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290859 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	7	27.695556	559809
10 24.067778 481873 11 25.678889 468149 12 24.130000 45701 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290859 17 12.955278 257642 18 13.065000 269622 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	8	27.818889	517857
11 25.678889 468149 12 24.130000 457017 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290859 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	9	22.114722	405848
12 24.130000 45701° 13 16.639444 348590 14 16.533889 313499 15 13.723333 270480 16 15.231944 290859 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	10	24.067778	481873
13 16.639444 348590 14 16.533889 313493 15 13.723333 270480 16 15.231944 290853 17 12.955278 257642 18 13.065000 269623 19 10.892778 225733 20 10.421389 208640 21 6.212222 133218	11	25.678889	468149
14 16.533889 313498 15 13.723333 270486 16 15.231944 290858 17 12.955278 257642 18 13.065000 269622 19 10.892778 225733 20 10.421389 208644 21 6.212222 133218	12	24.130000	457017
15 13.723333 270486 16 15.231944 290853 17 12.955278 257642 18 13.065000 269622 19 10.892778 225733 20 10.421389 208646 21 6.212222 133218	13	16.639444	348590
16 15.231944 290855 17 12.955278 257642 18 13.065000 269622 19 10.892778 225733 20 10.421389 208646 21 6.212222 133218	14	16.533889	313495
17 12.955278 25764: 18 13.065000 26962: 19 10.892778 22573: 20 10.421389 208644 21 6.212222 133218	15	13.723333	270486
18 13.065000 269623 19 10.892778 225733 20 10.421389 208644 21 6.212222 133218	16	15.231944	290855
19 10.892778 225733 20 10.421389 208644 21 6.212222 133218	17	12.955278	257642
20 10.421389 208640 21 6.212222 133218	18	13.065000	269623
21 6.212222 133218	19	10.892778	225733
	20	10.421389	208646
22 5.601667 13433	21	6.212222	133218
0.00100. 10100	22	5.601667	134337



Total time for a single core: 472.09 hours. Predicted time for 28 cores: 16.86 hours.

Note: Running chr 22 again on its took 3.75 hours, substantially less than when things are run together. This is probably because 16 cores reading in data concurrently led to a much longer read-in time. Reducing the biobank data size in terms of number of SNPs would probably improve things, these analyses were run on the unfiltered data.