|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| NA12878 | svelter | svelter\_Deter | delly | lumpy | pindel | erds |
| chr1 | 7.7563 | 8.1399 | 1.0311 | 2.0465 | \* | 1.8402 |
| chr2 | 7.0589 | 8.0803 | 1.0261 | 2.1421 | 12.5220 | 1.8855 |
| chr3 | 5.1461 | 7.2885 | 0.8034 | 1.6076 | 6.1863 | 1.5029 |
| chr4 | 4.5744 | 5.0482 | 0.8908 | 1.5875 | 8.8362 | 1.4624 |
| chr5 | 4.6423 | 6.5309 | 0.7101 | 1.5012 | 5.4523 | 1.3818 |
| chr6 | 4.4831 | 6.0917 | 0.6068 | 1.4446 | 6.3549 | 1.3127 |
| chr7 | 3.9558 | 4.3517 | 0.5985 | 1.3626 | 6.4219 | 1.2253 |
| chr8 | 3.9148 | 4.0169 | 0.6163 | 1.1549 | 4.5544 | 1.1098 |
| chr9 | 3.1073 | 3.9030 | 0.4053 | 1.1400 | 6.4134 | 0.9711 |
| chr10 | 3.3541 | 4.2688 | 0.9472 | 1.3333 | \* | 1.0850 |
| chr11 | 3.4004 | 5.1496 | 0.5190 | 1.1100 | 6.5348 | 1.0935 |
| chr12 | 3.8711 | 3.8876 | 0.5228 | 1.0619 | 4.5107 | 1.0104 |
| chr13 | 2.1006 | 2.6200 | 0.3366 | 0.7194 | 2.9312 | 0.7976 |
| chr14 | 2.1463 | 2.8993 | 0.3229 | 0.6918 | 4.5669 | 0.6919 |
| chr15 | 1.9132 | 2.2677 | 0.3394 | 0.6742 | 2.5471 | 0.6413 |
| chr16 | 2.4926 | 2.8907 | 1.1966 | 0.8031 | 6.8067 | 0.6750 |
| chr17 | 2.7244 | 3.1702 | 0.3684 | 0.7396 | 4.9526 | 0.5785 |
| chr18 | 2.1359 | 2.0556 | 0.2963 | 0.6178 | 4.8910 | 0.5896 |
| chr19 | 2.2808 | 2.6884 | 0.3236 | 0.5499 | 5.4751 | 0.4446 |
| chr20 | 1.9088 | 2.0844 | 0.1918 | 0.5021 | 2.6400 | 0.4748 |
| chr21 | 0.9333 | 0.9481 | 0.1707 | 0.3271 | 1.9323 | 0.3029 |
| chr22 | 1.0984 | 1.1790 | 0.1330 | 0.3045 | 1.4041 | 0.2847 |
| chrX | 0.0177 | 3.0627 | 0.5033 | 1.2475 | 5.0937 | 0.9118 |
| chrY | 0.0147 | 0.0225 | 0.1002 | 0.0693 | 0.9933 | 0.0000 |
| chrM | 0.0127 | 0.0036 | 0.0110 | 0.0753 | 0.3625 | 0.0001 |

Run time for each algorithm on NA12878. 8gb memory is allocated for each job, and \* stands for those exceeding memory limit

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| CHM1 | SVelter | SVelter\_Deter | Delly | Lumpy | Pindel | erds | erds.SNPs |
| chr1 | 9.5060 | 8.3730 | 0.8788 | 2.5672 | \* | 1.9978 | 1.9978 |
| chr2 | 7.1487 | 7.5820 | 1.1926 | 2.7720 | \* | 1.9993 | 1.9993 |
| chr3 | 5.2191 | 6.0434 | 0.6453 | 1.9656 | 8.5682 | 1.6912 | 1.6912 |
| chr4 | 4.3896 | 5.2188 | 1.7953 | 2.1695 | \* | 1.8294 | 1.8294 |
| chr5 | 5.1754 | 5.6669 | 0.5578 | 1.7791 | 8.5182 | 1.7013 | 1.7013 |
| chr6 | 5.5417 | 5.2305 | 0.5559 | 1.6595 | 8.9597 | 1.5830 | 1.5830 |
| chr7 | 4.5091 | 5.6834 | 0.7061 | 1.7072 | 14.0332 | 1.6254 | 1.6254 |
| chr8 | 4.0179 | 4.7164 | 0.5500 | 1.6530 | 10.1274 | 1.5624 | 1.5624 |
| chr9 | 3.6400 | 4.3798 | 0.4488 | 1.3486 | 20.5791 | 1.3024 | 1.3024 |
| chr10 | 4.1413 | 4.4271 | 1.4219 | 2.1048 | \* | 1.4403 | 1.4403 |
| chr11 | 4.7622 | 4.9356 | 0.6116 | 1.4612 | 18.0269 | 1.3558 | 1.3558 |
| chr12 | 3.6577 | 4.3588 | 0.4861 | 1.4581 | 7.0945 | 1.4123 | 1.4123 |
| chr13 | 2.6074 | 2.7384 | 0.3128 | 0.8736 | 4.3669 | 1.1986 | 1.1986 |
| chr14 | 2.7459 | 3.1380 | 0.3257 | 0.8921 | 4.5616 | 1.1442 | 1.1442 |
| chr15 | 2.1376 | 2.3653 | 0.2859 | 0.8977 | 4.7775 | 1.0870 | 1.0870 |
| chr16 | 3.2346 | 3.6308 | 1.3777 | 1.0944 | 18.1895 | 1.0751 | 1.0751 |
| chr17 | 3.6999 | 3.4164 | 0.3890 | 0.9626 | 8.4815 | 1.0069 | 1.0069 |
| chr18 | 2.2126 | 2.2896 | 0.3229 | 0.7885 | 26.7543 | 0.9815 | 0.9815 |
| chr19 | 3.4858 | 3.9819 | 0.2769 | 0.7717 | 14.9444 | 0.9235 | 0.9235 |
| chr20 | 2.3910 | 3.1536 | 0.2474 | 0.7286 | 4.8739 | 0.9028 | 0.9028 |
| chr21 | 0.8581 | 0.9723 | 0.2275 | 0.4901 | 8.2885 | 0.7446 | 0.7446 |
| chr22 | 1.6659 | 0.0045 | 0.1663 | 0.4544 | 2.4093 | 0.7786 | 0.7786 |
| chrX | 2.2511 | 2.2640 | 0.4671 | 1.3717 | 9.1480 | 1.3650 | 1.3650 |
| chrY | 0.0758 | 0.0957 | 0.4455 | 0.4894 | 0.0404 | 0.6003 | 0.6003 |
| chrM | 0.0026 | 0.0014 | 0.0148 | 0.2057 | 0.7855 | 0.5769 | 0.5769 |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Simulate | event | RD | Delly | Lumpy | Pindel | SVelter | erds | erds.SNPs |
| 1 | het | RD10 | 0.2030 | 0.3626 | 1.4381 | 3.5726 | 0.7384 | 1.0232 |
| 2 | het | RD10 | 0.1962 | 0.3510 | 1.3172 | 3.3724 | 0.7740 | 1.0107 |
| 1 | het | RD20 | 0.3437 | 0.7657 | 2.7125 | 4.3843 | 0.9089 | 1.1877 |
| 2 | het | RD20 | 0.3287 | 0.7013 | 2.7442 | 4.2390 | 0.8941 | 1.1503 |
| 1 | het | RD30 | 0.4955 | 1.0977 | 4.2162 | 4.7984 | 1.1576 | 1.5783 |
| 2 | het | RD30 | 0.4579 | 1.0439 | 3.7862 | 4.9312 | 1.0980 | 1.4709 |
| 1 | het | RD40 | 0.6438 | 1.4566 | 5.2976 | 6.1950 | 1.3852 | 1.7211 |
| 2 | het | RD40 | 0.6186 | 1.4131 | 5.4308 | 5.7961 | 1.3582 | 1.6797 |
| 1 | het | RD50 | 0.8299 | 1.8399 | 7.2615 | 7.2670 | 1.6521 | 1.9100 |
| 2 | het | RD50 | 0.7446 | 1.7476 | 6.4866 | 7.3724 | 1.6162 | 1.9810 |
| 1 | homo | RD10 | 0.2124 | 0.3830 | 1.4191 | 3.7831 | 0.8638 | 1.0676 |
| 2 | homo | RD10 | 0.2299 | 0.3652 | 1.3524 | 3.6733 | 0.9024 | 0.9292 |
| 1 | homo | RD20 | 0.3632 | 0.7621 | 2.8753 | 4.8521 | 1.0251 | 1.2596 |
| 2 | homo | RD20 | 0.3594 | 0.7268 | 2.7908 | 4.2661 | 1.0306 | 1.3183 |
| 1 | homo | RD30 | 0.5383 | 1.1572 | 4.1551 | 5.3661 | 1.2872 | 1.5081 |
| 2 | homo | RD30 | 0.5151 | 1.1301 | 4.3013 | 5.6700 | 1.2558 | 1.4183 |
| 1 | homo | RD40 | 0.7162 | 1.5498 | 5.9227 | 7.1806 | 1.5483 | 1.7058 |
| 2 | homo | RD40 | 0.6987 | 1.4922 | 5.6893 | 6.9656 | 1.5083 | 1.7615 |
| 1 | homo | RD50 | 0.8587 | 1.9349 | 6.9240 | 8.3818 | 1.7749 | 1.9601 |
| 2 | homo | RD50 | 0.8108 | 1.8595 | 7.2093 | 8.1730 | 1.7462 | 1.9663 |
| 1 | comp\_het | RD10 | 0.1975 | 0.3547 | 1.3642 | 4.2979 | 0.6751 | 1.0776 |
| 2 | comp\_het | RD10 | 0.2033 | 0.3466 | 1.3950 | 3.6702 | 0.7866 | 1.0851 |
| 1 | comp\_het | RD20 | 0.3282 | 0.7045 | 2.5269 | 4.2444 | 0.8390 | 1.2104 |
| 2 | comp\_het | RD20 | 0.3347 | 0.7032 | 2.7366 | 5.3252 | 0.9351 | 1.2617 |
| 1 | comp\_het | RD30 | 0.4588 | 1.0682 | 4.2323 | 5.0199 | 1.1282 | 1.4775 |
| 2 | comp\_het | RD30 | 0.4594 | 1.0480 | 4.2118 | 4.7197 | 1.1634 | 1.4104 |
| 1 | comp\_het | RD40 | 0.5922 | 1.4052 | 5.4219 | 6.8126 | 1.3474 | 1.7056 |
| 2 | comp\_het | RD40 | 0.5999 | 1.4012 | 5.2923 | 6.9332 | 1.4104 | 1.7402 |
| 1 | comp\_het | RD50 | 0.7464 | 1.7559 | 6.5309 | 8.6293 | 1.6998 | 2.0524 |
| 2 | comp\_het | RD50 | 0.7379 | 1.7560 | 6.6216 | 8.5981 | 1.6315 | 1.9777 |
| 1 | comp\_homo | RD10 | 0.2012 | 0.3595 | 1.3593 | 3.3182 | 0.7977 | 1.0722 |
| 2 | comp\_homo | RD10 | 0.2023 | 0.3546 | 1.3905 | 3.8297 | 0.8507 | 0.9638 |
| 1 | comp\_homo | RD20 | 0.3407 | 0.7264 | 2.7855 | 4.1014 | 0.9983 | 1.2547 |
| 2 | comp\_homo | RD20 | 0.3511 | 0.7031 | 2.6420 | 5.7023 | 1.0051 | 1.2351 |
| 1 | comp\_homo | RD30 | 0.5225 | 1.1189 | 4.2623 | 6.2704 | 1.2667 | 1.5663 |
| 2 | comp\_homo | RD30 | 0.4809 | 1.0614 | 3.9098 | 6.6700 | 1.2460 | 1.4768 |
| 1 | comp\_homo | RD40 | 0.6375 | 1.4497 | 5.3713 | 7.4140 | 1.5578 | 1.7949 |
| 2 | comp\_homo | RD40 | 0.6036 | 1.4158 | 5.3570 | 7.9385 | 1.4948 | 1.6739 |
| 1 | comp\_homo | RD50 | 0.7604 | 1.8009 | 6.8770 | 8.6782 | 1.7395 | 1.9717 |
| 2 | comp\_homo | RD50 | 0.7519 | 1.7673 | 6.3899 | 9.4594 | 1.7597 | 1.9798 |

Run time for chromosome 1 and 2 for simulated data

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| het | lumpy | pindel | delly | svelter | svelter\_deterministic | erds | erds\_SNP |
| RD10 | 3.9305 | 14.8552 | 2.4252 | 40.9762 | 20.5612 | 7.0288 | 7.9552 |
| RD20 | 7.6999 | 27.1213 | 4.8753 | 53.6503 | 27.7045 | 8.5814 | 12.6011 |
| RD30 | 11.7462 | 41.8591 | 6.6462 | 58.8423 | 28.7461 | 11.7104 | 10.1129 |
| RD40 | 4.4255 | 57.6758 | 8.4654 | 69.5485 | 34.5684 | 14.3812 | 13.6839 |
| RD50 | 5.7215 | 81.3902 | 10.1863 | 91.0307 | 43.7918 | 17.2330 | 16.1540 |
| het\_Paralelle | lumpy | pindel | delly | svelter | svelter\_deterministic | erds | erds\_SNP |
| RD10 | 3.9305 | 14.8552 | 2.4252 | 3.6654 | 2.3006 | 7.0288 | 7.9552 |
| RD20 | 7.6999 | 27.1213 | 4.8753 | 4.5940 | 2.6737 | 8.5814 | 12.6011 |
| RD30 | 11.7462 | 41.8591 | 6.6462 | 4.5855 | 2.6724 | 11.7104 | 10.1129 |
| RD40 | 4.4255 | 57.6758 | 8.4654 | 5.7604 | 3.2851 | 14.3812 | 13.6839 |
| RD50 | 5.7215 | 81.3902 | 10.1863 | 9.6364 | 3.8223 | 17.2330 | 16.1540 |
| homo | lumpy | pindel | delly | svelter | svelter\_deterministic | erds | erds\_SNP |
| RD10 | 4.0283 | 14.4361 | 2.6491 | 41.0660 | 21.5024 | 8.3261 | 4.9349 |
| RD20 | 2.3210 | 30.0200 | 4.5439 | 57.6232 | 30.1923 | 10.3434 | 7.5234 |
| RD30 | 3.4580 | 47.1746 | 6.8386 | 63.7252 | 35.6370 | 13.0464 | 10.4072 |
| RD40 | 4.6485 | 59.4946 | 8.4863 | 77.2421 | 40.4929 | 16.0058 | 12.3574 |
| RD50 | 5.8712 | 75.4867 | 10.5850 | 104.6888 | 57.3189 | 18.9507 | 15.5739 |
| homo\_Paralelle | lumpy | pindel | delly | svelter | svelter\_deterministic | erds | erds\_SNP |
| RD10 | 4.0283 | 14.4361 | 2.6491 | 4.3895 | 2.9101 | 8.3261 | 4.9349 |
| RD20 | 2.3210 | 30.0200 | 4.5439 | 5.6616 | 3.6501 | 10.3434 | 7.5234 |
| RD30 | 3.4580 | 47.1746 | 6.8386 | 5.9140 | 4.0236 | 13.0464 | 10.4072 |
| RD40 | 4.6485 | 59.4946 | 8.4863 | 7.0069 | 4.0659 | 16.0058 | 12.3574 |
| RD50 | 5.8712 | 75.4867 | 10.5850 | 9.4453 | 6.4644 | 18.9507 | 15.5739 |
| comp.het | lumpy | pindel | delly | svelter | svelter\_deterministic | erds | erds\_SNP |
| RD10 | 3.8053 | 15.4807 | 2.4567 | 45.4105 | 23.1018 | 6.6895 | 4.8926 |
| RD20 | 7.6086 | 31.8218 | 3.8902 | 47.5314 | 22.3554 | 8.8258 | 7.4633 |
| RD30 | 11.4270 | 48.3735 | 5.9338 | 57.9984 | 27.5544 | 11.6423 | 10.6879 |
| RD40 | 15.5639 | 60.4026 | 7.2932 | 74.9906 | 34.7933 | 14.9103 | 14.4681 |
| RD50 | 19.1325 | 81.2225 | 9.1824 | 91.3591 | 42.5716 | 17.8795 | 17.0428 |
| comp.het\_Paralelle | lumpy | pindel | delly | svelter | svelter\_deterministic | erds | erds\_SNP |
| RD10 | 3.8053 | 15.4807 | 2.4567 | 4.6815 | 2.6857 | 6.6895 | 4.8926 |
| RD20 | 7.6086 | 31.8218 | 3.8902 | 4.4363 | 2.4800 | 8.8258 | 7.4633 |
| RD30 | 11.4270 | 48.3735 | 5.9338 | 4.8250 | 2.7763 | 11.6423 | 10.6879 |
| RD40 | 15.5639 | 60.4026 | 7.2932 | 6.3626 | 3.4987 | 14.9103 | 14.4681 |
| RD50 | 19.1325 | 81.2225 | 9.1824 | 7.9352 | 4.3183 | 17.8795 | 17.0428 |
| comp.homo | lumpy | pindel | delly | svelter | svelter\_deterministic | erds | erds\_SNP |
| RD10 | 3.7724 | 15.7154 | 1.6027 | 45.0183 | 22.8584 | 7.3403 | 5.3421 |
| RD20 | 7.5714 | 28.9934 | 3.1774 | 54.9780 | 25.4066 | 9.6644 | 7.2734 |
| RD30 | 11.4942 | 45.7206 | 4.9373 | 72.4043 | 32.3453 | 12.4873 | 10.2926 |
| RD40 | 15.6126 | 59.1391 | 6.7150 | 84.0350 | 37.7673 | 15.4003 | 12.7319 |
| RD50 | 5.5116 | 74.8768 | 9.4291 | 97.8241 | 41.8851 | 18.2499 | 16.1735 |
| comp.homo\_Paralelle | lumpy | pindel | delly | svelter | svelter\_deterministic | erds | erds\_SNP |
| RD10 | 3.7724 | 15.7154 | 1.6027 | 4.4116 | 2.7321 | 7.3403 | 5.3421 |
| RD20 | 7.5714 | 28.9934 | 3.1774 | 4.8725 | 2.6291 | 9.6644 | 7.2734 |
| RD30 | 11.4942 | 45.7206 | 4.9373 | 6.5722 | 3.4048 | 12.4873 | 10.2926 |
| RD40 | 15.6126 | 59.1391 | 6.7150 | 7.4941 | 3.6679 | 15.4003 | 12.7319 |
| RD50 | 5.5116 | 74.8768 | 9.4291 | 8.3439 | 4.3397 | 18.2499 | 16.1735 |

Run time for whole genome of simulated data

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Method | SV | TP | Ref.Calls | Total Calls | FP | TPR | PPV |
|  | Svelter | DEL | 1137 | 2223 | 1743 | 606 | 0.5115 | 0.6523 |
| NA12878 | Delly | DEL | 1012 | 2223 | 1300 | 288 | 0.4552 | 0.7785 |
|  | Lumpy | DEL | 1706 | 2223 | 2569 | 863 | 0.7674 | 0.6641 |
|  | Pindel | DEL | 1591 | 2223 | 2046 | 455 | 0.7157 | 0.7776 |
|  | erds | DEL | 1409 | 2223 | 1806 | 397 | 0.6338 | 0.7802 |
|  | Svelter | DEL | 1711 | 3672 | 1743 | 32 | 0.4660 | 0.9816 |
|  | Delly | DEL | 1201 | 3672 | 1300 | 99 | 0.3271 | 0.9238 |
|  | Lumpy | DEL | 2268 | 3672 | 2569 | 301 | 0.6176 | 0.8828 |
|  | Pindel | DEL | 1994 | 3672 | 2046 | 52 | 0.5430 | 0.9746 |
|  | erds | DEL | 1735 | 3672 | 1806 | 71 | 0.4725 | 0.9607 |
| CHM1 | Svelter | DEL | 771 | 3016 | 1096 | 325 | 0.2556 | 0.7035 |
|  | Delly | DEL | 243 | 3016 | 722 | 479 | 0.0806 | 0.3366 |
|  | Lumpy | DEL | 844 | 3016 | 1524 | 680 | 0.2798 | 0.5538 |
|  | Pindel | DEL | 765 | 3016 | 1106 | 341 | 0.2536 | 0.6917 |
|  | erds | DEL | 447 | 3016 | 1089 | 642 | 0.1482 | 0.4105 |
|  | Svelter | DEL | 1062 | 3866 | 1096 | 34 | 0.2747 | 0.9690 |
|  | Delly | DEL | 612 | 3866 | 722 | 110 | 0.1583 | 0.8476 |
|  | Lumpy | DEL | 1418 | 3866 | 1524 | 106 | 0.3668 | 0.9304 |
|  | Pindel | DEL | 1068 | 3866 | 1106 | 38 | 0.2763 | 0.9656 |
|  | erds | DEL | 693 | 3866 | 1089 | 396 | 0.1793 | 0.6364 |
|  |  |  |  |  |  |  |  |  |