**Studying chemical reaction rate using a difference**

**algebraic converging method**

**--- A study on the thermal decomposition of poly-α-methyl styrene**

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**Supplemental Data**

Table SⅠ --- Table S Ⅲ

|  |  |  |
| --- | --- | --- |
| **TABLE SⅠ.** Experimental residual polymer mass fractions (the rate functions)  and the differential mass fractions for molecular weight of 230,000 of the solid PαMS molecules. | | |
|  |  |  |
| 307.316 | 100.258 | -0.161 |
| 312.316 | 100.296 | -0.152 |
| 317.316 | 100.280 | -0.134 |
| 322.316 | 100.200 | -0.085 |
| 327.316 | 100.170 | 0.005 |
| 332.316 | 100.181 | 0.012 |
| 337.316 | 100.194 | 0.012 |
| 342.316 | 100.201 | 0.011 |
| 347.316 | 100.217 | 0.011 |
| 352.316 | 100.219 | 0.005 |
| 357.316 | 100.229 | 0.009 |
| 362.316 | 100.236 | 0.005 |
| 367.316 | 100.242 | 0.003 |
| 372.316 | 100.242 | 0.002 |
| 377.316 | 100.249 | -0.003 |
| 382.316 | 100.239 | -0.002 |
| 387.316 | 100.239 | -0.008 |
| 392.316 | 100.221 | -0.015 |
| 397.316 | 100.205 | -0.014 |
| 402.316 | 100.189 | -0.021 |
| 407.316 | 100.164 | -0.027 |
| 412.316 | 100.138 | -0.031 |
| 417.316 | 100.098 | -0.040 |
| 422.316 | 100.057 | -0.045 |
| 427.316 | 100.011 | -0.048 |
|  |  |  |
| 432.316 | 99.957 | -0.067 |
| 437.316 | ***99.878 (-0.3066)*** | -0.086 |
| 442.316 | 99.778 | -0.121 |
| 447.316 | 99.630 | -0.166 |
| 452.316 | 99.436 | -0.258 |
| 457.316 | 99.088 | -0.410 |
| 462.316 | 98.626 | -0.476 |
| 467.316 | 98.149 | -0.466 |
| 472.316 | 97.676 | -0.454 |
| 477.316 | 97.233 | -0.450 |
| 482.316 | 96.785 | -0.440 |
| 487.316 | 96.36 | -0.396 |
| 492.316 | 95.985 | -0.347 |
| 497.316 | ***95.665 (0.1056)*** | -0.304 |
| 502.316 | 95.377 | -0.272 |
| 507.316 | 95.117 | -0.249 |
| 512.316 | ***94.863 (-0.0999)*** | -0.265 |
| 517.316 | 94.574 | -0.324 |
| 522.316 | 94.213 | -0.421 |
| 527.316 | ***93.722 (-0.1405)*** | -0.547 |
| 532.316 | ***93.127 (-0.0559)*** | -0.620 |
| 537.316 | 92.514 | -0.598 |
| 542.316 | 91.945 | -0.550 |
| 547.316 | 91.410 | -0.560 |
| 552.316 | 90.786 | -0.753 |
| 557.316 | 89.864 | -1.154 |
| 562.316 | 88.418 | -1.856 |
| 567.316 | 85.975 | -2.977 |
| 572.316 | 82.149 | -4.528 |
| 577.316 | 76.416 | -6.724 |
| 582.316 | ***68.193 (0.1908)*** | -9.175 |
| 587.316 | 57.569 | -11.276 |
| 592.316 | 45.365 | -12.386 |
| 597.316 | 32.131 | -13.392 |
| 602.316 | 19.175 | -11.682 |
| 607.316 | 9.653 | -7.428 |
| 612.316 | 4.573 | -3.425 |
| 617.316 | 2.425 | -1.449 |
| 622.316 | 1.497 | -0.639 |
| 627.316 | 1.067 | -0.305 |
|  |  |  |
| 632.316 | 0.866 | -0.138 |
| 637.316 | 0.782 | -0.059 |
| 642.316 | 0.749 | -0.017 |
| 647.316 | 0.742 | 0.000 |
| 652.316 | 0.744 | 0.004 |
| 657.316 | 0.743 | 0.000 |
| 662.316 | 0.751 | 0.006 |
| 667.316 | 0.755 | 0.002 |
| 672.316 | 0.754 | 0.000 |
| 677.316 | 0.756 | 0.001 |
| 682.316 | 0.757 | 0.002 |
| 687.316 | 0.758 | 0.001 |
| 692.316 | 0.761 | 0.018 |
| 697.316 | 0.79 | 0.014 |
| 702.316 | 0.796 | 0.009 |
| 707.316 | 0.801 | 0.002 |
| 712.316 | 0.802 | 0.000 |
| 717.316 | 0.805 | 0.003 |
| 722.316 | 0.809 | 0.003 |
| 727.316 | 0.809 | -0.001 |
| 732.316 | 0.809 | 0.008 |
| 737.316 | 0.821 | -0.004 |
| 742.316 | 0.812 | 0.001 |
| 747.316 | 0.813 | 0.002 |
| 752.316 | 0.820 | 0.003 |
| 757.316 | 0.823 | 0.000 |
| 762.316 | 0.818 | 0.000 |
| 767.316 | 0.823 | 0.005 |
| 772.316 | 0.821 | 0.002 |
| 777.316 | 0.824 | 0.001 |
| 782.316 | 0.818 | -0.003 |
| 787.316 | 0.824 | 0.003 |
| 792.316 | 0.828 | 0.001 |
| 797.316 | 0.823 | 0.001 |
| 802.316 | 0.822 | 0.001 |
| 807.316 | 0.831 | 0.000 |
| 812.316 | 0.827 | 0.005 |
| 817.316 | 0.834 | 0.000 |
| 822.316 | 0.837 | -0.002 |
| 827.316 | 0.831 | 0.002 |
| 832.316 | 0.835 | 0.001 |
| 837.316 | 0.837 | -0.004 |
| 842.316 | 0.831 | -0.002 |
| 847.316 | 0.831 | -0.001 |
| 852.316 | 0.825 | 0.001 |
| 857.316 | 0.831 | 0.000 |
| 862.316 | 0.828 | 0.000 |
| 867.316 | 0.825 | -0.002 |
| 872.316 | 0.831 | 0.001 |
| 877.316 | 0.828 | 0.000 |
| 882.316 | 0.825 | -0.003 |
| 887.316 | 0.825 | 0.002 |
| 892.316 | 0.828 | 0.005 |
| 897.316 | 0.828 | -0.003 |
| 902.316 | 0.837 | 0.002 |
| 907.316 | 0.831 | 0.001 |
| 912.316 | 0.834 | -0.003 |
| 917.316 | 0.827 | 0.000 |
| 922.316 | 0.834 | 0.010 |

|  |  |  |
| --- | --- | --- |
| **TABLE SⅡ.** Experimental residual polymer mass fractions  and the differential mass fractions  for molecular weight of 760,000 of the solid PαMS molecules. | | |
|  |  |  |
| 306.670 | 100.114 | -0.085 |
| 311.670 | 100.114 | -0.072 |
| 316.670 | 100.084 | -0.057 |
| 321.670 | 100.031 | -0.039 |
| 326.670 | 100.033 | 0.008 |
| 331.670 | 100.040 | 0.006 |
| 336.670 | 100.047 | 0.005 |
| 341.670 | 100.048 | 0.000 |
| 346.670 | 100.052 | 0.001 |
| 351.670 | 100.046 | -0.002 |
| 356.670 | 100.047 | -0.005 |
| 361.670 | 100.046 | -0.008 |
| 366.670 | 100.034 | -0.010 |
| 371.670 | 100.013 | -0.018 |
|  |  |  |
| 376.670 | 99.999 | -0.021 |
| 381.670 | 99.972 | -0.024 |
| 386.670 | 99.947 | -0.029 |
| 391.670 | 99.914 | -0.033 |
| 396.670 | 99.876 | -0.033 |
| 401.670 | ***99.843 (0.1039)*** | -0.039 |
| 406.670 | 99.804 | -0.046 |
| 411.670 | 99.758 | -0.049 |
| 416.670 | 99.706 | -0.054 |
| 421.670 | ***99.657 (0.2497)*** | -0.059 |
| 426.670 | 99.595 | -0.064 |
| 431.670 | 99.524 | -0.076 |
| 436.670 | 99.448 | -0.084 |
| 441.670 | 99.356 | -0.100 |
| 446.670 | 99.254 | -0.119 |
| 451.670 | 99.116 | -0.146 |
| 456.670 | 98.949 | -0.187 |
| 461.670 | 98.731 | -0.22 |
| 466.670 | 98.516 | -0.193 |
| 471.670 | 98.333 | -0.173 |
| 476.670 | 98.170 | -0.149 |
| 481.670 | 98.028 | -0.135 |
| 486.670 | 97.888 | -0.128 |
| 491.670 | 97.772 | -0.124 |
| 496.670 | 97.640 | -0.137 |
| 501.670 | 97.490 | -0.165 |
| 506.670 | 97.304 | -0.214 |
| 511.670 | 97.054 | -0.284 |
| 516.670 | 96.724 | -0.380 |
| 521.670 | 96.277 | -0.509 |
| 526.670 | 95.678 | -0.668 |
| 531.670 | 94.925 | -0.812 |
| 536.670 | 94.056 | -0.884 |
| 541.670 | 93.146 | -0.951 |
| 546.670 | ***92.118 (-0.0057)*** | -1.205 |
| 551.670 | 90.662 | -1.808 |
| 556.670 | 88.403 | -2.756 |
| 561.670 | 84.932 | -3.992 |
| 566.670 | 79.965 | -5.432 |
| 571.670 | ***73.380 (-0.2767)*** | -7.023 |
| 576.670 | 65.181 | -8.559 |
| 581.670 | 55.504 | -9.915 |
| 586.670 | 44.525 | -10.876 |
| 591.670 | 33.451 | -10.669 |
| 596.670 | 22.706 | -10.356 |
| 601.670 | ***12.884 (0.0099)*** | -9.117 |
| 606.670 | 4.882 | -6.147 |
| 611.670 | 1.204 | -2.246 |
|  |  |  |
| 616.670 | 0.044 | -0.700 |
| 621.670 | -0.353 | -0.257 |
| 626.670 | -0.513 | -0.107 |
| 631.670 | -0.579 | -0.052 |
| 636.670 | -0.616 | -0.022 |
| 641.670 | -0.628 | -0.008 |
| 646.670 | -0.634 | -0.004 |
| 651.670 | -0.637 | 0.001 |
| 656.670 | -0.637 | -0.001 |
| 661.670 | -0.634 | 0.001 |
| 666.670 | -0.634 | -0.002 |
| 671.670 | -0.634 | 0.002 |
| 676.670 | -0.634 | 0.002 |
| 681.670 | -0.631 | -0.001 |
| 686.670 | -0.632 | 0.001 |
| 691.670 | -0.631 | 0.001 |
| 696.670 | -0.635 | -0.002 |
| 701.670 | -0.631 | 0.004 |
| 706.670 | -0.634 | 0.001 |
| 711.670 | -0.628 | 0.001 |
| 716.670 | -0.625 | 0.002 |
| 721.670 | -0.628 | -0.004 |
| 726.670 | -0.631 | -0.001 |
| 731.670 | -0.631 | 0.001 |
| 736.670 | -0.631 | -0.003 |
| 741.670 | -0.642 | -0.001 |
| 746.670 | -0.639 | -0.001 |
| 751.670 | -0.640 | -0.001 |
| 756.670 | -0.640 | -0.002 |
| 761.670 | -0.646 | -0.003 |
| 766.670 | -0.645 | -0.001 |
| 771.670 | -0.644 | -0.003 |
| 776.670 | -0.647 | -0.004 |
| 781.670 | -0.650 | -0.001 |
| 786.670 | -0.655 | -0.003 |
| 791.670 | -0.662 | -0.006 |
| 796.670 | -0.665 | -0.005 |
| 801.670 | -0.669 | -0.007 |
| 806.670 | -0.674 | -0.007 |
| 811.670 | -0.683 | -0.005 |
| 816.670 | -0.689 | -0.005 |
| 821.670 | -0.688 | -0.005 |
| 826.670 | -0.696 | -0.001 |
| 831.670 | -0.693 | -0.001 |
| 836.670 | -0.698 | -0.002 |
| 841.670 | -0.699 | -0.002 |
| 846.670 | -0.705 | -0.005 |
| 851.670 | -0.708 | 0.001 |
| 856.670 | -0.702 | 0.001 |
| 861.670 | -0.705 | -0.002 |
| 866.670 | -0.705 | -0.001 |
| 871.670 | -0.705 | 0.000 |
| 876.670 | -0.710 | -0.005 |
| 881.670 | -0.711 | 0.000 |
| 886.670 | -0.711 | -0.001 |
| 891.670 | -0.712 | -0.002 |
| 896.670 | -0.717 | -0.002 |
| 901.670 | -0.718 | -0.004 |
| 906.670 | -0.723 | 0.000 |
| 911.670 | -0.719 | 0.003 |

**TABLE SⅢ.** The predicted residual polymer mass fractions  and the differential mass fractions  for molecular weights of 230,000 and 760,000 of the solid PαMS molecules respectively.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **230,000** | | | **760,000** | | |
|  |  |  |  |  |  |
| 0 | 100.0000 | 0.0000 | 0 | 100.0000 | 0.0000 |
| 2.316 | 100.0000 | 0.0000 | 1.67 | 100.0000 | 0.0000 |
| 7.316 | 100.0000 | 0.0000 | 6.67 | 100.0000 | 0.0000 |
| 12.316 | 100.0000 | 0.0000 | 11.67 | 100.0000 | 0.0000 |
| 17.316 | 100.0000 | 0.0000 | 16.67 | 100.0000 | 0.0000 |
| 22.316 | 100.0000 | 0.0000 | 21.67 | 100.0000 | 0.0000 |
| 27.316 | 100.0000 | 0.0000 | 26.67 | 100.0000 | 0.0000 |
| 32.316 | 100.0000 | 0.0000 | 31.67 | 100.0000 | 0.0000 |
| 37.316 | 100.0000 | 0.0000 | 36.67 | 100.0000 | 0.0000 |
| 42.316 | 100.0000 | 0.0000 | 41.67 | 100.0000 | 0.0000 |
| 47.316 | 100.0000 | 0.0000 | 46.67 | 100.0000 | 0.0000 |
| 52.316 | 100.0000 | 0.0000 | 51.67 | 100.0000 | 0.0000 |
| 57.316 | 100.0000 | 0.0000 | 56.67 | 100.0000 | 0.0000 |
| 62.316 | 100.0000 | 0.0000 | 61.67 | 100.0000 | 0.0000 |
| 67.316 | 100.0000 | 0.0000 | 66.67 | 100.0000 | 0.0000 |
| 72.316 | 100.0000 | 0.0000 | 71.67 | 100.0000 | 0.0000 |
| 77.316 | 100.0000 | 0.0000 | 76.67 | 100.0000 | 0.0000 |
| 82.316 | 100.0000 | 0.0000 | 81.67 | 100.0000 | 0.0000 |
| 87.316 | 100.0000 | 0.0000 | 86.67 | 100.0000 | 0.0000 |
| 92.316 | 100.0000 | 0.0000 | 91.67 | 100.0000 | 0.0000 |
| 97.316 | 100.0000 | 0.0000 | 96.67 | 100.0000 | 0.0000 |
| 102.316 | 100.0000 | 0.0000 | 101.67 | 100.0000 | 0.0000 |
| 107.316 | 100.0000 | 0.0000 | 106.67 | 100.0000 | 0.0000 |
| 112.316 | 100.0000 | 0.0000 | 111.67 | 100.0000 | 0.0000 |
| 117.316 | 100.0000 | 0.0000 | 116.67 | 100.0000 | 0.0000 |
| 122.316 | 100.0000 | 0.0000 | 121.67 | 100.0000 | 0.0000 |
| 127.316 | 100.0000 | 0.0000 | 126.67 | 100.0000 | 0.0000 |
| 132.316 | 100.0000 | 0.0000 | 131.67 | 100.0000 | 0.0000 |
| 137.316 | 100.0000 | 0.0000 | 136.67 | 100.0000 | 0.0000 |
| 142.316 | 100.0000 | 0.0000 | 141.67 | 100.0000 | 0.0000 |
| 147.316 | 100.0000 | 0.0000 | 146.67 | 100.0000 | 0.0000 |
| 152.316 | 100.0000 | 0.0000 | 151.67 | 100.0000 | 0.0000 |
| 157.316 | 100.0000 | 0.0000 | 156.67 | 100.0000 | 0.0000 |
| 162.316 | 100.0000 | 0.0000 | 161.67 | 100.0000 | 0.0000 |
| 167.316 | 100.0000 | 0.0000 | 166.67 | 100.0000 | 0.0000 |
| 172.316 | 100.0000 | 0.0000 | 171.67 | 100.0000 | 0.0000 |
| 177.316 | 100.0000 | 0.0000 | 176.67 | 100.0000 | 0.0000 |
| 182.316 | 100.0000 | 0.0000 | 181.67 | 100.0000 | 0.0000 |
| 187.316 | 100.0000 | 0.0000 | 186.67 | 100.0000 | 0.0000 |
| 192.316 | 100.0000 | 0.0000 | 191.67 | 100.0000 | 0.0000 |
| 197.316 | 100.0000 | 0.0000 | 196.67 | 100.0000 | 0.0000 |
| 202.316 | 100.0000 | 0.0000 | 201.67 | 100.0000 | 0.0000 |
| 207.316 | 100.0000 | 0.0000 | 206.67 | 100.0000 | 0.0000 |
| 212.316 | 100.0000 | 0.0000 | 211.67 | 100.0000 | 0.0000 |
| 217.316 | 100.0000 | 0.0000 | 216.67 | 100.0000 | 0.0000 |
| 222.316 | 100.0000 | 0.0000 | 221.67 | 100.0000 | 0.0000 |
| 227.316 | 100.0000 | 0.0000 | 226.67 | 100.0000 | 0.0000 |
| 232.316 | 100.0000 | 0.0000 | 231.67 | 100.0000 | 0.0000 |
| 237.316 | 100.0000 | 0.0000 | 236.67 | 100.0000 | 0.0000 |
| 242.316 | 100.0000 | 0.0000 | 241.67 | 100.0000 | 0.0000 |
| 247.316 | 100.0000 | 0.0000 | 246.67 | 100.0000 | 0.0000 |
| 252.316 | 100.0000 | 0.0000 | 251.67 | 100.0000 | 0.0000 |
| 257.316 | 100.0000 | 0.0000 | 256.67 | 100.0000 | 0.0000 |
| 262.316 | 100.0000 | 0.0000 | 261.67 | 100.0000 | 0.0000 |
| 267.316 | 100.0000 | 0.0000 | 266.67 | 100.0000 | 0.0000 |
| 272.316 | 100.0000 | 0.0000 | 271.67 | 100.0000 | 0.0000 |
| 277.316 | 100.0000 | 0.0000 | 276.67 | 100.0000 | 0.0000 |
| 282.316 | 100.0000 | 0.0000 | 281.67 | 100.0000 | 0.0000 |
| 287.316 | 100.0000 | 0.0000 | 286.67 | 100.0000 | 0.0000 |
| 292.316 | 100.0000 | 0.0000 | 291.67 | 100.0000 | 0.0000 |
| 297.316 | 100.0000 | 0.0000 | 296.67 | 100.0000 | 0.0000 |
| 302.316 | 100.0000 | 0.0000 | 301.67 | 100.0000 | 0.0000 |
| 307.316 | 100.0000 | 0.0000 | 306.67 | 99.9990 | -0.0001 |
| 312.316 | 100.0000 | 0.0000 | 311.67 | 99.9986 | -0.0001 |
| 317.316 | 100.0000 | 0.0000 | 316.67 | 99.9982 | -0.0001 |
| 322.316 | 100.0000 | 0.0000 | 321.67 | 99.9975 | -0.0001 |
| 327.316 | 100.0000 | 0.0000 | 326.67 | 99.9968 | -0.0002 |
| 332.316 | 100.0000 | -0.0001 | 331.67 | 99.9958 | -0.0002 |
| 337.316 | 100.0000 | -0.0001 | 336.67 | 99.9947 | -0.0002 |
| 342.316 | 100.0000 | -0.0002 | 341.67 | 99.9934 | -0.0003 |
| 347.316 | 100.0000 | -0.0004 | 346.67 | 99.9917 | -0.0003 |
| 352.316 | 100.0000 | -0.0006 | 351.67 | 99.9899 | -0.0004 |
| 357.316 | 100.0000 | -0.0009 | 356.67 | 99.9877 | -0.0005 |
| 362.316 | 100.0000 | -0.0013 | 361.67 | 99.9852 | -0.0005 |
| 367.316 | 100.0000 | -0.0018 | 366.67 | 99.9822 | -0.0006 |
| 372.316 | 99.9999 | -0.0025 | 371.67 | 99.9789 | -0.0007 |
| 377.316 | 99.9998 | -0.0032 | 376.67 | 99.9751 | -0.0008 |
| 382.316 | 99.9996 | -0.0042 | 381.67 | 99.9708 | -0.0009 |
| 387.316 | 99.9990 | -0.0052 | 386.67 | 99.9659 | -0.0010 |
| 392.316 | 99.9976 | -0.0063 | 391.67 | 99.9604 | -0.0012 |
| 397.316 | 99.9947 | -0.0075 | 396.67 | 99.9541 | -0.0013 |
| 402.316 | 99.9889 | -0.0088 | 401.67 | 99.9469 | -0.0015 |
| 407.316 | 99.9782 | -0.0100 | 406.67 | 99.9388 | -0.0017 |
| 412.316 | 99.9595 | -0.0111 | 411.67 | 99.9295 | -0.0020 |
| 417.316 | 99.9287 | -0.0122 | 416.67 | 99.9189 | -0.0023 |
| 422.316 | 99.8805 | -0.0132 | 421.67 | 99.9067 | -0.0026 |
| 427.316 | 99.8090 | -0.0141 | 426.67 | 99.8927 | -0.0030 |
| 432.316 | 99.7078 | -0.0149 | 431.67 | 99.8765 | -0.0035 |
| 437.316 | 99.5714 | -0.0155 | 436.67 | 99.8578 | -0.0040 |
| 442.316 | 99.3954 | -0.0161 | 441.67 | 99.8360 | -0.0047 |
| 447.316 | 99.1777 | -0.0167 | 446.67 | 99.8105 | -0.0055 |
| 452.316 | 98.9189 | -0.0172 | 451.67 | 99.7806 | -0.0065 |
| 457.316 | 98.6225 | -0.0178 | 456.67 | 99.7454 | -0.0077 |
| 462.316 | 98.2945 | -0.0186 | 461.67 | 99.7036 | -0.0091 |
| 467.316 | 97.9428 | -0.0195 | 466.67 | 99.6538 | -0.0109 |
| 472.316 | 97.5763 | -0.0206 | 471.67 | 99.5942 | -0.0130 |
| 477.316 | 97.2035 | -0.0221 | 476.67 | 99.5226 | -0.0157 |
| 482.316 | 96.8323 | -0.0240 | 481.67 | 99.4359 | -0.0191 |
| 487.316 | 96.4680 | -0.0265 | 486.67 | 99.3306 | -0.0232 |
| 492.316 | 96.1140 | -0.0297 | 491.67 | 99.2019 | -0.0285 |
| 497.316 | 95.7706 | -0.0338 | 496.67 | 99.0438 | -0.0351 |
| 502.316 | 95.4351 | -0.0389 | 501.67 | 98.8484 | -0.0434 |
| 507.316 | 95.1021 | -0.0454 | 506.67 | 98.6057 | -0.0541 |
| 512.316 | 94.7631 | -0.0538 | 511.67 | 98.3026 | -0.0677 |
| 517.316 | 94.4070 | -0.0645 | 516.67 | 97.9219 | -0.0853 |
| 522.316 | 94.0192 | -0.0782 | 521.67 | 97.4412 | -0.1080 |
| 527.316 | 93.5815 | -0.0959 | 526.67 | 96.8309 | -0.1374 |
| 532.316 | 93.0711 | -0.1189 | 531.67 | 96.0524 | -0.1757 |
| 537.316 | 92.4590 | -0.1492 | 536.67 | 95.0546 | -0.2257 |
| 542.316 | 91.7075 | -0.1892 | 541.67 | 93.7705 | -0.2909 |
| 547.316 | 90.7668 | -0.2426 | 546.67 | 92.1123 | -0.3761 |
| 552.316 | 89.5695 | -0.3143 | 551.67 | 89.9665 | -0.4870 |
| 557.316 | 88.0235 | -0.4115 | 556.67 | 87.1883 | -0.6303 |
| 562.316 | 86.0004 | -0.5434 | 561.67 | 83.5977 | -0.8131 |
| 567.316 | 83.3210 | -0.7225 | 566.67 | 78.9810 | -1.0415 |
| 572.316 | 79.7356 | -0.9637 | 571.67 | 73.1033 | -1.3171 |
| 577.316 | 74.9038 | -1.2820 | 576.67 | 65.7443 | -1.6313 |
| 582.316 | 68.3838 | -1.6842 | 581.67 | 56.7719 | -1.9555 |
| 587.316 | 59.6705 | -2.1500 | 586.67 | 46.2692 | -2.2305 |
| 592.316 | 48.3633 | -2.5956 | 591.67 | 34.7065 | -2.3610 |
| 597.316 | 34.6178 | -2.8311 | 596.67 | 23.0890 | -2.2351 |
| 602.316 | 19.9557 | -2.5795 | 601.67 | 12.8939 | -1.7914 |
| 607.316 | 7.7814 | -1.7113 | 606.67 | 5.5667 | -1.1196 |
| 612.316 | 1.4571 | -0.6468 | 611.67 | 1.6409 | -0.4819 |
| 617.316 | 0.0651 | -0.0889 | 616.67 | 0.2734 | -0.1183 |
| 622.316 | 0.0002 | -0.0019 | 621.67 | 0.0193 | -0.0124 |
| 627.316 | 0.0000 | 0.0000 | 626.67 | 0.0004 | -0.0004 |
| 632.316 | 0.0000 | 0.0000 | 631.67 | 0.0000 | 0.0000 |
| 637.316 | 0.0000 | 0.0000 | 636.67 | 0.0000 | 0.0000 |
| 642.316 | 0.0000 | 0.0000 | 641.67 | 0.0000 | 0.0000 |
| 647.316 | 0.0000 | 0.0000 | 646.67 | 0.0000 | 0.0000 |
| 652.316 | 0.0000 | 0.0000 | 651.67 | 0.0000 | 0.0000 |
| 657.316 | 0.0000 | 0.0000 | 656.67 | 0.0000 | 0.0000 |
| 662.316 | 0.0000 | 0.0000 | 661.67 | 0.0000 | 0.0000 |
| 667.316 | 0.0000 | 0.0000 | 666.67 | 0.0000 | 0.0000 |
| 672.316 | 0.0000 | 0.0000 | 671.67 | 0.0000 | 0.0000 |
| 677.316 | 0.0000 | 0.0000 | 676.67 | 0.0000 | 0.0000 |
| 682.316 | 0.0000 | 0.0000 | 681.67 | 0.0000 | 0.0000 |
| 687.316 | 0.0000 | 0.0000 | 686.67 | 0.0000 | 0.0000 |
| 692.316 | 0.0000 | 0.0000 | 691.67 | 0.0000 | 0.0000 |
| 697.316 | 0.0000 | 0.0000 | 696.67 | 0.0000 | 0.0000 |
| 702.316 | 0.0000 | 0.0000 | 701.67 | 0.0000 | 0.0000 |
| 707.316 | 0.0000 | 0.0000 | 706.67 | 0.0000 | 0.0000 |
| 712.316 | 0.0000 | 0.0000 | 711.67 | 0.0000 | 0.0000 |
| 717.316 | 0.0000 | 0.0000 | 716.67 | 0.0000 | 0.0000 |
| 722.316 | 0.0000 | 0.0000 | 721.67 | 0.0000 | 0.0000 |
| 727.316 | 0.0000 | 0.0000 | 726.67 | 0.0000 | 0.0000 |
| 732.316 | 0.0000 | 0.0000 | 731.67 | 0.0000 | 0.0000 |
| 737.316 | 0.0000 | 0.0000 | 736.67 | 0.0000 | 0.0000 |
| 742.316 | 0.0000 | 0.0000 | 741.67 | 0.0000 | 0.0000 |
| 747.316 | 0.0000 | 0.0000 | 746.67 | 0.0000 | 0.0000 |
| 752.316 | 0.0000 | 0.0000 | 751.67 | 0.0000 | 0.0000 |
| 757.316 | 0.0000 | 0.0000 | 756.67 | 0.0000 | 0.0000 |
| 762.316 | 0.0000 | 0.0000 | 761.67 | 0.0000 | 0.0000 |
| 767.316 | 0.0000 | 0.0000 | 766.67 | 0.0000 | 0.0000 |
| 772.316 | 0.0000 | 0.0000 | 771.67 | 0.0000 | 0.0000 |
| 777.316 | 0.0000 | 0.0000 | 776.67 | 0.0000 | 0.0000 |
| 782.316 | 0.0000 | 0.0000 | 781.67 | 0.0000 | 0.0000 |
| 787.316 | 0.0000 | 0.0000 | 786.67 | 0.0000 | 0.0000 |
| 792.316 | 0.0000 | 0.0000 | 791.67 | 0.0000 | 0.0000 |
| 797.316 | 0.0000 | 0.0000 | 796.67 | 0.0000 | 0.0000 |
| 802.316 | 0.0000 | 0.0000 | 801.67 | 0.0000 | 0.0000 |
| 807.316 | 0.0000 | 0.0000 | 806.67 | 0.0000 | 0.0000 |
| 812.316 | 0.0000 | 0.0000 | 811.67 | 0.0000 | 0.0000 |
| 817.316 | 0.0000 | 0.0000 | 816.67 | 0.0000 | 0.0000 |
| 822.316 | 0.0000 | 0.0000 | 821.67 | 0.0000 | 0.0000 |
| 827.316 | 0.0000 | 0.0000 | 826.67 | 0.0000 | 0.0000 |
| 832.316 | 0.0000 | 0.0000 | 831.67 | 0.0000 | 0.0000 |
| 837.316 | 0.0000 | 0.0000 | 836.67 | 0.0000 | 0.0000 |
| 842.316 | 0.0000 | 0.0000 | 841.67 | 0.0000 | 0.0000 |
| 847.316 | 0.0000 | 0.0000 | 846.67 | 0.0000 | 0.0000 |
| 852.316 | 0.0000 | 0.0000 | 851.67 | 0.0000 | 0.0000 |
| 857.316 | 0.0000 | 0.0000 | 856.67 | 0.0000 | 0.0000 |
| 862.316 | 0.0000 | 0.0000 | 861.67 | 0.0000 | 0.0000 |
| 867.316 | 0.0000 | 0.0000 | 866.67 | 0.0000 | 0.0000 |
| 872.316 | 0.0000 | 0.0000 | 871.67 | 0.0000 | 0.0000 |
| 877.316 | 0.0000 | 0.0000 | 876.67 | 0.0000 | 0.0000 |
| 882.316 | 0.0000 | 0.0000 | 881.67 | 0.0000 | 0.0000 |
| 887.316 | 0.0000 | 0.0000 | 886.67 | 0.0000 | 0.0000 |
| 892.316 | 0.0000 | 0.0000 | 891.67 | 0.0000 | 0.0000 |
| 897.316 | 0.0000 | 0.0000 | 896.67 | 0.0000 | 0.0000 |
| 902.316 | 0.0000 | 0.0000 | 901.67 | 0.0000 | 0.0000 |
| 907.316 | 0.0000 | 0.0000 | 906.67 | 0.0000 | 0.0000 |
| 912.316 | 0.0000 | 0.0000 | 911.67 | 0.0000 | 0.0000 |
| 917.316 | 0.0000 | 0.0000 | 916.67 | 0.0000 | 0.0000 |
| 922.316 | 0.0000 | 0.0000 | 921.67 | 0.0000 | 0.0000 |
| 927.316 | 0.0000 | 0.0000 | 926.67 | 0.0000 | 0.0000 |
| 932.316 | 0.0000 | 0.0000 | 931.67 | 0.0000 | 0.0000 |
| 937.316 | 0.0000 | 0.0000 | 936.67 | 0.0000 | 0.0000 |
| 942.316 | 0.0000 | 0.0000 | 941.67 | 0.0000 | 0.0000 |
| 947.316 | 0.0000 | 0.0000 | 946.67 | 0.0000 | 0.0000 |
| 952.316 | 0.0000 | 0.0000 | 951.67 | 0.0000 | 0.0000 |
| 957.316 | 0.0000 | 0.0000 | 956.67 | 0.0000 | 0.0000 |
| 962.316 | 0.0000 | 0.0000 | 961.67 | 0.0000 | 0.0000 |
| 967.316 | 0.0000 | 0.0000 | 966.67 | 0.0000 | 0.0000 |
| 972.316 | 0.0000 | 0.0000 | 971.67 | 0.0000 | 0.0000 |
| 977.316 | 0.0000 | 0.0000 | 976.67 | 0.0000 | 0.0000 |
| 982.316 | 0.0000 | 0.0000 | 981.67 | 0.0000 | 0.0000 |
| 987.316 | 0.0000 | 0.0000 | 986.67 | 0.0000 | 0.0000 |
| 992.316 | 0.0000 | 0.0000 | 991.67 | 0.0000 | 0.0000 |
| 997.316 | 0.0000 | 0.0000 | 996.67 | 0.0000 | 0.0000 |
| 1000 | 0.0000 | 0.0000 | 1000 | 0.0000 | 0.0000 |