PCA Report: Day-by-Day Analysis

# Explained Variance Percentages

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Day | PC1 | PC2 | PC3 | PC4 | PC5 |
| Day 1 | 87.30% | 10.35% | 1.48% | 0.44% | 0.20% |
| Day 2 | 92.65% | 4.68% | 1.47% | 0.77% | 0.27% |
| Day 3 | 95.77% | 3.50% | 0.44% | 0.21% | 0.07% |
| Day 4 | 95.31% | 2.20% | 1.29% | 0.90% | 0.29% |
| Day 5 | 95.80% | 3.44% | 0.46% | 0.11% | 0.10% |
| Day 6 | 84.43% | 12.10% | 3.01% | 0.27% | 0.20% |

# Top 10 Wavelengths for Each Principal Component

## Day 1:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1869 | 0.0229 |
| 1868 | 0.0229 |
| 1870 | 0.0229 |
| 1867 | 0.0229 |
| 1513 | 0.0229 |
| 1514 | 0.0229 |
| 1512 | 0.0229 |
| 1515 | 0.0229 |
| 1503 | 0.0229 |
| 1510 | 0.0229 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 670 | 0.0578 |
| 671 | 0.0578 |
| 672 | 0.0578 |
| 669 | 0.0578 |
| 673 | 0.0577 |
| 679 | 0.0576 |
| 678 | 0.0576 |
| 680 | 0.0576 |
| 668 | 0.0576 |
| 674 | 0.0575 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2502 | 0.0557 |
| 2501 | 0.0551 |
| 2482 | 0.0533 |
| 2483 | 0.0532 |
| 2503 | 0.0530 |
| 2500 | 0.0528 |
| 2487 | 0.0520 |
| 2481 | 0.0510 |
| 2486 | 0.0505 |
| 2484 | 0.0504 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2485 | 0.0755 |
| 2498 | 0.0735 |
| 2486 | 0.0720 |
| 2484 | 0.0719 |
| 2487 | 0.0687 |
| 2499 | 0.0675 |
| 2497 | 0.0668 |
| 2469 | 0.0667 |
| 2483 | 0.0664 |
| 2458 | 0.0654 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 399 | 0.1340 |
| 398 | 0.1202 |
| 395 | 0.1141 |
| 394 | 0.1134 |
| 397 | 0.1126 |
| 396 | 0.1107 |
| 400 | 0.1092 |
| 384 | 0.1091 |
| 393 | 0.1087 |
| 385 | 0.1079 |

## Day 2:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1496 | 0.0222 |
| 1495 | 0.0222 |
| 1497 | 0.0222 |
| 1499 | 0.0222 |
| 1498 | 0.0222 |
| 1494 | 0.0222 |
| 1492 | 0.0222 |
| 1493 | 0.0222 |
| 1500 | 0.0222 |
| 1491 | 0.0222 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 639 | 0.0586 |
| 640 | 0.0585 |
| 638 | 0.0584 |
| 641 | 0.0582 |
| 637 | 0.0580 |
| 642 | 0.0579 |
| 643 | 0.0576 |
| 636 | 0.0576 |
| 644 | 0.0573 |
| 645 | 0.0570 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1923 | 0.1347 |
| 1922 | 0.1345 |
| 1921 | 0.1344 |
| 1920 | 0.1343 |
| 1919 | 0.1341 |
| 1918 | 0.1337 |
| 1917 | 0.1329 |
| 1916 | 0.1319 |
| 1915 | 0.1306 |
| 1914 | 0.1292 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1923 | 0.1003 |
| 1922 | 0.1002 |
| 1921 | 0.1001 |
| 1920 | 0.0990 |
| 1919 | 0.0974 |
| 1918 | 0.0958 |
| 1917 | 0.0937 |
| 1916 | 0.0912 |
| 1915 | 0.0886 |
| 1914 | 0.0857 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1923 | 0.1498 |
| 1922 | 0.1482 |
| 1921 | 0.1464 |
| 1920 | 0.1447 |
| 1919 | 0.1422 |
| 1918 | 0.1396 |
| 1917 | 0.1383 |
| 1916 | 0.1360 |
| 1915 | 0.1328 |
| 1914 | 0.1283 |

## Day 3:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2237 | 0.0219 |
| 2189 | 0.0219 |
| 2236 | 0.0219 |
| 2159 | 0.0219 |
| 2188 | 0.0219 |
| 2190 | 0.0219 |
| 2158 | 0.0219 |
| 2219 | 0.0219 |
| 2187 | 0.0219 |
| 2220 | 0.0219 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 670 | 0.0492 |
| 671 | 0.0491 |
| 669 | 0.0491 |
| 668 | 0.0490 |
| 672 | 0.0490 |
| 667 | 0.0489 |
| 673 | 0.0489 |
| 674 | 0.0488 |
| 666 | 0.0487 |
| 675 | 0.0487 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 408 | 0.0474 |
| 407 | 0.0455 |
| 402 | 0.0455 |
| 409 | 0.0450 |
| 406 | 0.0442 |
| 401 | 0.0435 |
| 405 | 0.0433 |
| 400 | 0.0430 |
| 399 | 0.0428 |
| 403 | 0.0425 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 408 | 0.0774 |
| 402 | 0.0753 |
| 407 | 0.0751 |
| 405 | 0.0746 |
| 406 | 0.0745 |
| 401 | 0.0744 |
| 409 | 0.0732 |
| 412 | 0.0731 |
| 413 | 0.0728 |
| 411 | 0.0726 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 359 | 0.0976 |
| 366 | 0.0916 |
| 367 | 0.0903 |
| 351 | 0.0833 |
| 352 | 0.0825 |
| 365 | 0.0802 |
| 371 | 0.0768 |
| 358 | 0.0758 |
| 346 | 0.0756 |
| 368 | 0.0743 |

## Day 4:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2254 | 0.0220 |
| 2479 | 0.0220 |
| 2253 | 0.0220 |
| 2305 | 0.0220 |
| 2269 | 0.0220 |
| 2270 | 0.0220 |
| 1726 | 0.0220 |
| 1725 | 0.0220 |
| 1724 | 0.0220 |
| 1723 | 0.0220 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 348 | 0.1088 |
| 349 | 0.1082 |
| 347 | 0.1081 |
| 350 | 0.1077 |
| 346 | 0.1076 |
| 351 | 0.1072 |
| 352 | 0.1066 |
| 353 | 0.1060 |
| 354 | 0.1057 |
| 355 | 0.1048 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2487 | 0.1309 |
| 2488 | 0.0958 |
| 2494 | 0.0810 |
| 2486 | 0.0801 |
| 2493 | 0.0718 |
| 653 | 0.0526 |
| 652 | 0.0523 |
| 654 | 0.0521 |
| 651 | 0.0515 |
| 655 | 0.0512 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2494 | 0.0890 |
| 2433 | 0.0853 |
| 2493 | 0.0731 |
| 346 | -0.0725 |
| 347 | -0.0717 |
| 2502 | 0.0710 |
| 348 | -0.0702 |
| 2426 | 0.0701 |
| 349 | -0.0691 |
| 2495 | 0.0686 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2501 | 0.1476 |
| 2473 | 0.1458 |
| 2474 | 0.1415 |
| 2500 | 0.1400 |
| 2487 | 0.1263 |
| 2480 | 0.1176 |
| 2498 | -0.1169 |
| 2494 | -0.1162 |
| 2497 | -0.1087 |
| 2453 | 0.1075 |

## Day 5:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 473 | 0.0219 |
| 472 | 0.0219 |
| 471 | 0.0219 |
| 470 | 0.0219 |
| 474 | 0.0219 |
| 489 | 0.0219 |
| 488 | 0.0219 |
| 490 | 0.0219 |
| 487 | 0.0219 |
| 492 | 0.0219 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1905 | 0.0493 |
| 1906 | 0.0492 |
| 1904 | 0.0492 |
| 1907 | 0.0491 |
| 1903 | 0.0488 |
| 1908 | 0.0487 |
| 1902 | 0.0485 |
| 1909 | 0.0481 |
| 1910 | 0.0476 |
| 1911 | 0.0466 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2507 | 0.0444 |
| 2500 | 0.0430 |
| 2501 | 0.0428 |
| 2506 | 0.0412 |
| 1902 | -0.0412 |
| 2502 | 0.0407 |
| 1903 | -0.0397 |
| 2503 | 0.0388 |
| 1904 | -0.0381 |
| 2505 | 0.0374 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1889 | 0.0689 |
| 1890 | 0.0687 |
| 2487 | 0.0684 |
| 1888 | 0.0681 |
| 1891 | 0.0681 |
| 1892 | 0.0676 |
| 1887 | 0.0674 |
| 1893 | 0.0673 |
| 1894 | 0.0667 |
| 1886 | 0.0667 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2485 | 0.0601 |
| 365 | -0.0601 |
| 2486 | 0.0577 |
| 366 | -0.0564 |
| 364 | -0.0550 |
| 2487 | 0.0547 |
| 368 | -0.0539 |
| 367 | -0.0537 |
| 2484 | 0.0511 |
| 369 | -0.0490 |

## Day 6:

### PC1:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 359 | 0.0234 |
| 360 | 0.0233 |
| 358 | 0.0233 |
| 521 | 0.0233 |
| 522 | 0.0233 |
| 524 | 0.0233 |
| 523 | 0.0233 |
| 519 | 0.0233 |
| 525 | 0.0233 |
| 520 | 0.0233 |

### PC2:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 1902 | 0.0412 |
| 1903 | 0.0405 |
| 1904 | 0.0400 |
| 2487 | 0.0398 |
| 1905 | 0.0395 |
| 1910 | 0.0394 |
| 1940 | 0.0394 |
| 1906 | 0.0393 |
| 2502 | 0.0393 |
| 1911 | 0.0392 |

### PC3:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2507 | 0.0773 |
| 2506 | 0.0568 |
| 1274 | -0.0441 |
| 1273 | -0.0441 |
| 1272 | -0.0441 |
| 1282 | -0.0441 |
| 1280 | -0.0441 |
| 1277 | -0.0440 |
| 1278 | -0.0440 |
| 1283 | -0.0440 |

### PC4:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2478 | 0.1199 |
| 2474 | -0.1178 |
| 2491 | -0.1168 |
| 2490 | -0.1100 |
| 2489 | -0.0952 |
| 2473 | -0.0930 |
| 2475 | -0.0910 |
| 2433 | -0.0880 |
| 2492 | -0.0868 |
| 2479 | 0.0850 |

### PC5:

|  |  |
| --- | --- |
| Wavelength | Contribution |
| 2494 | 0.1305 |
| 2495 | 0.1247 |
| 2455 | 0.1175 |
| 2456 | 0.1121 |
| 2496 | 0.1051 |
| 2489 | -0.1040 |
| 2454 | 0.1039 |
| 2488 | -0.0999 |
| 2487 | -0.0949 |
| 2493 | 0.0924 |