Cu-Copper

##Repeated\_CV

|  |
| --- |
| Recursive feature selection  Outer resampling method: Cross-Validated (5 fold, repeated 3 times)  Resampling performance over subset size:  Variables RMSE Rsquared MAE RMSESD RsquaredSD MAESD Selected  1 0.2843 0.2008 0.2607 0.05507 0.2044 0.06164  2 0.2679 0.1894 0.2395 0.05016 0.2729 0.05027  3 0.2523 0.3006 0.2317 0.05393 0.3114 0.05006  4 0.2531 0.3035 0.2296 0.05249 0.2631 0.05365  5 0.2536 0.2544 0.2329 0.04660 0.2367 0.04997  6 0.2509 0.2982 0.2284 0.05369 0.2232 0.05568  7 0.2507 0.3016 0.2276 0.04976 0.2015 0.05286  8 0.2507 0.2980 0.2287 0.05035 0.2289 0.05478  9 0.2511 0.3006 0.2290 0.05054 0.2297 0.05246  10 0.2494 0.3129 0.2265 0.04933 0.2445 0.05303  11 0.2513 0.3397 0.2278 0.05097 0.2651 0.05475  12 0.2522 0.2972 0.2281 0.04659 0.2511 0.05126  13 0.2526 0.3291 0.2278 0.04899 0.2779 0.05513  14 0.2483 0.3300 0.2254 0.04842 0.2536 0.05437  15 0.2487 0.3145 0.2245 0.05201 0.2762 0.05754  16 0.2498 0.3076 0.2267 0.04641 0.2576 0.05231  17 0.2509 0.3368 0.2256 0.04556 0.2842 0.05219  18 0.2511 0.3192 0.2259 0.04613 0.2675 0.05253  19 0.2519 0.3440 0.2267 0.04692 0.2992 0.05270  20 0.2515 0.3348 0.2268 0.04707 0.2947 0.05418  21 0.2484 0.3291 0.2239 0.04797 0.2993 0.05357  22 0.2491 0.3366 0.2238 0.04847 0.3068 0.05531  23 0.2483 0.3473 0.2237 0.04907 0.3172 0.05501  24 0.2482 0.3481 0.2241 0.04934 0.3294 0.05549  25 0.2506 0.3535 0.2257 0.04811 0.3188 0.05394  26 0.2468 0.3383 0.2227 0.04647 0.3198 0.05110  27 0.2494 0.3388 0.2255 0.04719 0.3387 0.05268  28 0.2494 0.3018 0.2260 0.04835 0.2991 0.05318  29 0.2486 0.3333 0.2250 0.04826 0.3210 0.05344  30 0.2475 0.3357 0.2238 0.04959 0.3315 0.05568  31 0.2475 0.3439 0.2229 0.04642 0.3245 0.05316  32 0.2486 0.3374 0.2239 0.04522 0.3123 0.05116  33 0.2511 0.2887 0.2270 0.04599 0.2911 0.05285  34 0.2493 0.3269 0.2250 0.04588 0.2895 0.05150  35 0.2471 0.3333 0.2234 0.04699 0.3253 0.05268  36 0.2483 0.2918 0.2235 0.04678 0.2973 0.05369  37 0.2491 0.3331 0.2244 0.04926 0.3261 0.05560  38 0.2482 0.3121 0.2240 0.04750 0.3105 0.05261  39 0.2455 0.2862 0.2222 0.04550 0.3021 0.05044 \*  40 0.2479 0.2823 0.2239 0.04569 0.3001 0.05117  41 0.2502 0.3010 0.2261 0.04584 0.2973 0.05166  The top 5 variables (out of 39):  bio\_1\_khavr, Clay\_khavr, Sand\_khavr, aoi\_dem\_clip\_khavr, b2\_reflectance  > predictors(result\_rfe1)  [1] "bio\_1\_khavr" "Clay\_khavr"  [3] "Sand\_khavr" "aoi\_dem\_clip\_khavr"  [5] "b2\_reflectance" "Saturation\_Mean\_Sentinel\_khavr"  [7] "pH\_khavr" "bio\_12\_khavr"  [9] "ndvi\_mean\_kh" "spi\_kh"  [11] "satind\_mean\_kh" "gndvi\_mean\_kh"  [13] "ProflCur\_kh" "Sen\_B05\_Mean\_30m\_aoi"  [15] "Sen\_B08A\_Mean\_30m\_aoi" "SGSI\_Mean\_Sentinel\_khavr"  [17] "Sen\_B06\_Mean\_30m\_aoi" "PlanCur\_kh"  [19] "bio\_15\_khavr" "Sen\_B02\_30m\_aoi"  [21] "b3\_reflectance" "NDVI\_Mean\_Sentinel\_khavr"  [23] "b5\_reflectance" "Twi\_kh"  [25] "sgsi\_mean\_kh" "b7\_reflectance"  [27] "Sen\_B07\_Mean\_30m\_aoi" "slope\_kh"  [29] "Sen\_B12\_Mean\_30m\_aoi" "ci\_mean\_kh"  [31] "b4\_reflectance" "MSAVI2\_Mean\_Sentinel\_khavr"  [33] "GNDVI\_Mean\_Sentinel\_khavr" "ClayInd\_Mean\_Sentinel\_khavr"  [35] "Sen\_B08\_Mean\_30m\_aoi" "Sen\_B11\_Mean\_30m\_aoi"  [37] "Sen\_B03\_Mean\_30m\_aoi" "FlowAcc\_kh"  [39] "b6\_reflectance" |
|  |
| |  | | --- | | > | |
| ##LOOCV  Recursive feature selection  Outer resampling method: Leave-One-Out Cross-Validation  Resampling performance over subset size:  Variables RMSE Rsquared MAE Selected  1 0.3378 2.776e-02 0.3166  2 0.2995 1.180e-04 0.2732  3 0.2827 1.720e-03 0.2535  4 0.2744 1.381e-02 0.2437  5 0.2706 9.691e-03 0.2359  6 0.2727 9.073e-03 0.2379  7 0.2720 7.129e-03 0.2370  8 0.2738 3.676e-03 0.2391  9 0.2738 6.968e-03 0.2364  10 0.2801 2.412e-04 0.2444  11 0.2746 4.009e-03 0.2386  12 0.2744 5.386e-03 0.2375  13 0.2779 3.988e-03 0.2408  14 0.2704 5.654e-03 0.2357  15 0.2706 6.132e-03 0.2352  16 0.2658 1.194e-02 0.2298  17 0.2656 8.637e-03 0.2308  18 0.2663 1.172e-02 0.2298  19 0.2666 8.239e-03 0.2312  20 0.2681 5.441e-03 0.2317  21 0.2691 3.932e-03 0.2335  22 0.2637 1.135e-02 0.2296  23 0.2634 8.389e-03 0.2289  24 0.2644 7.428e-03 0.2296  25 0.2635 9.154e-03 0.2284  26 0.2612 1.245e-02 0.2277  27 0.2598 1.639e-02 0.2249  28 0.2582 1.851e-02 0.2232  29 0.2640 5.935e-03 0.2296  30 0.2589 1.586e-02 0.2239  31 0.2611 1.105e-02 0.2256  32 0.2575 1.736e-02 0.2238 \*  33 0.2628 6.787e-03 0.2285  34 0.2623 8.168e-03 0.2273  35 0.2676 1.784e-03 0.2346  36 0.2649 4.846e-03 0.2303  37 0.2700 7.625e-05 0.2354  38 0.2629 5.666e-03 0.2301  39 0.2667 1.937e-03 0.2329  40 0.2696 1.136e-03 0.2368  41 0.2636 6.983e-03 0.2298  The top 5 variables (out of 32):  bio\_1\_khavr, Clay\_khavr, Sand\_khavr, aoi\_dem\_clip\_khavr, Saturation\_Mean\_Sentinel\_khavr  > predictors(result\_rfe1)  [1] "bio\_1\_khavr" "Clay\_khavr"  [3] "Sand\_khavr" "aoi\_dem\_clip\_khavr"  [5] "Saturation\_Mean\_Sentinel\_khavr" "b2\_reflectance"  [7] "bio\_12\_khavr" "Sen\_B02\_30m\_aoi"  [9] "bio\_15\_khavr" "Sen\_B08A\_Mean\_30m\_aoi"  [11] "sgsi\_mean\_kh" "pH\_khavr"  [13] "PlanCur\_kh" "b7\_reflectance"  [15] "SGSI\_Mean\_Sentinel\_khavr" "b3\_reflectance"  [17] "ndvi\_mean\_kh" "gndvi\_mean\_kh"  [19] "ProflCur\_kh" "MSAVI2\_Mean\_Sentinel\_khavr"  [21] "Sen\_B06\_Mean\_30m\_aoi" "satind\_mean\_kh"  [23] "ClayInd\_Mean\_Sentinel\_khavr" "NDVI\_Mean\_Sentinel\_khavr"  [25] "Twi\_kh" "b5\_reflectance"  [27] "srad\_khavr" "Sen\_B11\_Mean\_30m\_aoi"  [29] "Sen\_B05\_Mean\_30m\_aoi" "Sen\_B04\_Mean\_30m\_aoi"  [31] "spi\_kh" "Sen\_B03\_Mean\_30m\_aoi" |
|  |
| |  | | --- | | > | |

|  |
| --- |
| ####LGOCV  Recursive feature selection  Outer resampling method: Repeated Train/Test Splits Estimated (25 reps, 75%)  Resampling performance over subset size:  Variables RMSE Rsquared MAE RMSESD RsquaredSD MAESD Selected  1 0.2884 0.1473 0.2485 0.04414 0.1999 0.04632  2 0.2700 0.1936 0.2379 0.05366 0.2388 0.05077  3 0.2693 0.1556 0.2395 0.05220 0.1837 0.05476  4 0.2651 0.1802 0.2346 0.04988 0.1668 0.05362  5 0.2604 0.2403 0.2321 0.05067 0.2044 0.05291  6 0.2619 0.2804 0.2341 0.05544 0.2120 0.05490  7 0.2609 0.2714 0.2328 0.05399 0.2078 0.05538  8 0.2587 0.3131 0.2304 0.05526 0.2663 0.05698  9 0.2579 0.2947 0.2276 0.05750 0.2396 0.05953  10 0.2568 0.2795 0.2279 0.05249 0.2171 0.05492  11 0.2571 0.2726 0.2280 0.05245 0.2278 0.05527  12 0.2544 0.2895 0.2242 0.05372 0.2485 0.05506  13 0.2536 0.3046 0.2215 0.05396 0.2803 0.05539  14 0.2518 0.3134 0.2215 0.05132 0.2768 0.05389  15 0.2518 0.3197 0.2208 0.05112 0.2813 0.05281  16 0.2525 0.3187 0.2214 0.05064 0.2821 0.05171  17 0.2512 0.3282 0.2204 0.05080 0.2900 0.05258  18 0.2482 0.3438 0.2165 0.05178 0.3018 0.05274  19 0.2497 0.3300 0.2187 0.05061 0.2999 0.05156  20 0.2492 0.3607 0.2185 0.05053 0.3217 0.05218  21 0.2500 0.3515 0.2196 0.05111 0.3051 0.05052  22 0.2521 0.3314 0.2206 0.05047 0.2798 0.05109  23 0.2499 0.3447 0.2193 0.05027 0.2875 0.05001  24 0.2489 0.3402 0.2173 0.05169 0.2797 0.05163  25 0.2514 0.3266 0.2191 0.04989 0.2802 0.05082  26 0.2508 0.3632 0.2188 0.05023 0.2953 0.05109  27 0.2501 0.3504 0.2186 0.04905 0.2837 0.04845  28 0.2499 0.3425 0.2180 0.04882 0.2832 0.04852  29 0.2508 0.3409 0.2181 0.04775 0.2923 0.04905  30 0.2498 0.3502 0.2179 0.04839 0.3046 0.04938  31 0.2513 0.3409 0.2191 0.04890 0.2959 0.04919  32 0.2504 0.3441 0.2180 0.04806 0.2913 0.04861  33 0.2495 0.3448 0.2172 0.04769 0.2965 0.04780  34 0.2511 0.3316 0.2191 0.04773 0.3086 0.04918  35 0.2507 0.3108 0.2183 0.04821 0.2835 0.04887  36 0.2491 0.3470 0.2174 0.04836 0.2964 0.04867  37 0.2489 0.3707 0.2173 0.05013 0.3293 0.05095  38 0.2490 0.3328 0.2173 0.04784 0.2875 0.04864  39 0.2476 0.3720 0.2163 0.05086 0.3257 0.05010 \*  40 0.2498 0.3516 0.2179 0.05058 0.3134 0.05067  41 0.2479 0.3671 0.2178 0.05020 0.3122 0.04999  The top 5 variables (out of 39):  Clay\_khavr, bio\_1\_khavr, aoi\_dem\_clip\_khavr, Sand\_khavr, Saturation\_Mean\_Sentinel\_khavr  > predictors(result\_rfe1)  [1] "Clay\_khavr" "bio\_1\_khavr"  [3] "aoi\_dem\_clip\_khavr" "Sand\_khavr"  [5] "Saturation\_Mean\_Sentinel\_khavr" "bio\_12\_khavr"  [7] "b2\_reflectance" "Sen\_B08A\_Mean\_30m\_aoi"  [9] "Sen\_B06\_Mean\_30m\_aoi" "spi\_kh"  [11] "SGSI\_Mean\_Sentinel\_khavr" "srad\_khavr"  [13] "Sen\_B07\_Mean\_30m\_aoi" "pH\_khavr"  [15] "NDVI\_Mean\_Sentinel\_khavr" "ProflCur\_kh"  [17] "bio\_15\_khavr" "b4\_reflectance"  [19] "satind\_mean\_kh" "Sen\_B03\_Mean\_30m\_aoi"  [21] "gndvi\_mean\_kh" "sgsi\_mean\_kh"  [23] "b7\_reflectance" "ClayInd\_Mean\_Sentinel\_khavr"  [25] "ndvi\_mean\_kh" "FlowAcc\_kh"  [27] "Sen\_B05\_Mean\_30m\_aoi" "PlanCur\_kh"  [29] "b5\_reflectance" "Sen\_B02\_30m\_aoi"  [31] "slope\_kh" "MSAVI2\_Mean\_Sentinel\_khavr"  [33] "b3\_reflectance" "b6\_reflectance"  [35] "Twi\_kh" "GNDVI\_Mean\_Sentinel\_khavr"  [37] "Sen\_B12\_Mean\_30m\_aoi" "Sen\_B04\_Mean\_30m\_aoi"  [39] "Sen\_B11\_Mean\_30m\_aoi" |
|  |
| |  | | --- | | > | |