Fe-Demir-41 Covariates

###Repeated\_CV

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| 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 0.8785 0.4075 0.7133 0.1974 0.3461 0.2021  2 0.7949 0.3604 0.6606 0.2754 0.3488 0.2375  3 0.7793 0.3504 0.6468 0.2814 0.3143 0.2458  4 0.7590 0.3677 0.6415 0.2718 0.3236 0.2340  5 0.7446 0.3582 0.6327 0.2662 0.3559 0.2311  6 0.7612 0.3407 0.6513 0.2582 0.2965 0.2253  7 0.7473 0.3372 0.6417 0.2510 0.3067 0.2191  8 0.7448 0.3287 0.6421 0.2379 0.3167 0.2036  9 0.7395 0.3603 0.6428 0.2327 0.3213 0.2024  10 0.7530 0.3170 0.6552 0.2259 0.2957 0.1960  11 0.7349 0.3043 0.6349 0.2192 0.2990 0.1938  12 0.7257 0.3084 0.6329 0.2215 0.3015 0.1969  13 0.7164 0.2639 0.6245 0.2166 0.2963 0.1937  14 0.7197 0.3190 0.6245 0.2172 0.3048 0.1941  15 0.7164 0.3200 0.6264 0.2189 0.2736 0.1954  16 0.7168 0.2876 0.6225 0.2094 0.2969 0.1880  17 0.7195 0.2474 0.6288 0.2165 0.2414 0.1935  18 0.7145 0.3323 0.6239 0.2174 0.2883 0.1944  19 0.7070 0.2827 0.6185 0.2138 0.2533 0.1940  20 0.7009 0.3127 0.6147 0.2215 0.3168 0.2011  21 0.6915 0.2930 0.6078 0.2248 0.2695 0.2042  22 0.6888 0.2761 0.6049 0.2273 0.2705 0.2057  23 0.6892 0.3548 0.6051 0.2151 0.3109 0.1937  24 0.6905 0.3924 0.6038 0.2247 0.3130 0.2062  25 0.6957 0.3484 0.6050 0.2217 0.2736 0.2049  26 0.6867 0.4217 0.5994 0.2271 0.3205 0.2069  27 0.6876 0.3634 0.5988 0.2238 0.3322 0.2038  28 0.6844 0.4334 0.5977 0.2345 0.3290 0.2108  29 0.6788 0.3591 0.5921 0.2385 0.3258 0.2153  30 0.6879 0.3704 0.5985 0.2404 0.3037 0.2150  31 0.6845 0.3708 0.5947 0.2322 0.2892 0.2089  32 0.6767 0.3709 0.5857 0.2360 0.3600 0.2158  33 0.6763 0.3455 0.5899 0.2358 0.2892 0.2113  34 0.6758 0.3743 0.5899 0.2333 0.3348 0.2087  35 0.6749 0.2858 0.5853 0.2235 0.3232 0.2064  36 0.6739 0.3738 0.5861 0.2276 0.3366 0.2042  37 0.6830 0.3784 0.5945 0.2314 0.3306 0.2092  38 0.6737 0.3581 0.5851 0.2348 0.3236 0.2119  39 0.6722 0.3441 0.5817 0.2340 0.2861 0.2065 \*  40 0.6779 0.3851 0.5852 0.2353 0.3357 0.2101  41 0.6886 0.4096 0.5954 0.2310 0.3114 0.2095  The top 5 variables (out of 39):  ClayInd\_Mean\_Sentinel\_khavr, Twi\_kh, MSAVI2\_Mean\_Sentinel\_khavr,  NDVI\_Mean\_Sentinel\_khavr, GNDVI\_Mean\_Sentinel\_khavr  > predictors(result\_rfe1)  [1] "ClayInd\_Mean\_Sentinel\_khavr" "Twi\_kh" "MSAVI2\_Mean\_Sentinel\_khavr"  [4] "NDVI\_Mean\_Sentinel\_khavr" "GNDVI\_Mean\_Sentinel\_khavr" "PlanCur\_kh"  [7] "SGSI\_Mean\_Sentinel\_khavr" "bio\_12\_khavr" "bio\_15\_khavr"  [10] "Sen\_B02\_30m\_aoi" "aoi\_dem\_clip\_khavr" "Saturation\_Mean\_Sentinel\_khavr"  [13] "Sen\_B03\_Mean\_30m\_aoi" "pH\_khavr" "Sen\_B04\_Mean\_30m\_aoi"  [16] "ndvi\_mean\_kh" "gndvi\_mean\_kh" "srad\_khavr"  [19] "ProflCur\_kh" "sgsi\_mean\_kh" "ci\_mean\_kh"  [22] "b6\_reflectance" "FlowAcc\_kh" "Clay\_khavr"  [25] "bio\_1\_khavr" "slope\_kh" "Sen\_B07\_Mean\_30m\_aoi"  [28] "b2\_reflectance" "Sen\_B05\_Mean\_30m\_aoi" "satind\_mean\_kh"  [31] "Sen\_B12\_Mean\_30m\_aoi" "b3\_reflectance" "b7\_reflectance"  [34] "b4\_reflectance" "Sen\_B08\_Mean\_30m\_aoi" "spi\_kh"  [37] "Sen\_B11\_Mean\_30m\_aoi" "b5\_reflectance" "Sen\_B06\_Mean\_30m\_aoi" |
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| ###Repeated\_LOOCV    Recursive feature selection  Outer resampling method: Leave-One-Out Cross-Validation  Resampling performance over subset size:  Variables RMSE Rsquared MAE Selected  1 0.9114 0.32014 0.7655  2 0.8594 0.31145 0.7036  3 0.8406 0.29539 0.6553  4 0.8046 0.27765 0.6409  5 0.7889 0.31388 0.6179  6 0.7986 0.25172 0.6507  7 0.7792 0.23218 0.6285  8 0.7767 0.21703 0.6276  9 0.7875 0.18016 0.6424  10 0.7772 0.14215 0.6390  11 0.7501 0.07707 0.6131  12 0.7677 0.12176 0.6345  13 0.7721 0.12750 0.6321  14 0.7569 0.10254 0.6248  15 0.7623 0.11610 0.6326  16 0.7638 0.12357 0.6341  17 0.7688 0.13510 0.6380  18 0.7406 0.04928 0.6152  19 0.7407 0.04041 0.6159  20 0.7397 0.04473 0.6202  21 0.7319 0.01991 0.6042 \*  22 0.7393 0.03117 0.6063  23 0.7434 0.04687 0.6051  24 0.7469 0.05303 0.6187  25 0.7491 0.05791 0.6100  26 0.7430 0.05962 0.6127  27 0.7480 0.06895 0.6262  28 0.7565 0.09578 0.6315  29 0.7534 0.07335 0.6273  30 0.7550 0.08964 0.6292  31 0.7514 0.09180 0.6248  32 0.7360 0.06513 0.6011  33 0.7487 0.09046 0.6158  34 0.7503 0.08886 0.6197  35 0.7396 0.06405 0.6170  36 0.7588 0.12177 0.6268  37 0.7578 0.11494 0.6175  38 0.7462 0.09077 0.6142  39 0.7584 0.11668 0.6248  40 0.7622 0.13937 0.6356  41 0.7590 0.14973 0.6244  The top 5 variables (out of 21):  bio\_12\_khavr, ClayInd\_Mean\_Sentinel\_khavr, bio\_15\_khavr, MSAVI2\_Mean\_Sentinel\_khavr, PlanCur\_kh  > predictors(result\_rfe1)  [1] "bio\_12\_khavr" "ClayInd\_Mean\_Sentinel\_khavr"  [3] "bio\_15\_khavr" "MSAVI2\_Mean\_Sentinel\_khavr"  [5] "PlanCur\_kh" "SGSI\_Mean\_Sentinel\_khavr"  [7] "NDVI\_Mean\_Sentinel\_khavr" "pH\_khavr"  [9] "GNDVI\_Mean\_Sentinel\_khavr" "ndvi\_mean\_kh"  [11] "Sen\_B02\_30m\_aoi" "aoi\_dem\_clip\_khavr"  [13] "Sen\_B03\_Mean\_30m\_aoi" "srad\_khavr"  [15] "Sen\_B04\_Mean\_30m\_aoi" "slope\_kh"  [17] "Saturation\_Mean\_Sentinel\_khavr" "gndvi\_mean\_kh"  [19] "sgsi\_mean\_kh" "b7\_reflectance"  [21] "b6\_reflectance" |
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| |  | | --- | | >  ###Repeated\_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 0.8069 0.2832 0.6514 0.19599 0.2568 0.16520  2 0.7580 0.3772 0.6121 0.13494 0.3130 0.13449  3 0.7442 0.2607 0.6001 0.11925 0.2656 0.11174  4 0.7453 0.2170 0.6020 0.10948 0.2178 0.10483  5 0.7313 0.1927 0.5836 0.11439 0.1659 0.10492  6 0.7420 0.2287 0.5941 0.10752 0.2148 0.10105  7 0.7345 0.2353 0.5954 0.10298 0.2230 0.09988  8 0.7247 0.2527 0.5888 0.10235 0.2459 0.09797  9 0.7302 0.2489 0.5903 0.09838 0.2624 0.09706  10 0.7274 0.2231 0.5850 0.08710 0.2370 0.08804  11 0.7221 0.2454 0.5838 0.09606 0.2553 0.09587  12 0.7195 0.2541 0.5805 0.08977 0.2772 0.09153  13 0.7169 0.2586 0.5757 0.08667 0.2770 0.09189  14 0.7144 0.2479 0.5740 0.08312 0.2796 0.08609  15 0.7138 0.2411 0.5692 0.09107 0.2614 0.09470  16 0.7138 0.2466 0.5687 0.08940 0.2617 0.08962  17 0.7055 0.2390 0.5647 0.08926 0.2797 0.09129  18 0.7116 0.2333 0.5674 0.08654 0.2424 0.08758  19 0.7107 0.2435 0.5660 0.09127 0.2671 0.08907  20 0.7110 0.2425 0.5684 0.09388 0.2599 0.09436  21 0.7108 0.2500 0.5634 0.09505 0.2709 0.09098  22 0.7082 0.2428 0.5602 0.09277 0.2674 0.08594  23 0.7067 0.2493 0.5626 0.09013 0.2692 0.08764  24 0.7139 0.2431 0.5675 0.09058 0.2472 0.08730  25 0.7078 0.2368 0.5630 0.09525 0.2570 0.09248  26 0.7026 0.2661 0.5587 0.09770 0.2774 0.09155  27 0.7027 0.2539 0.5612 0.09602 0.2515 0.08880  28 0.7025 0.2491 0.5596 0.09936 0.2599 0.08848  29 0.7022 0.2446 0.5613 0.09884 0.2686 0.08828  30 0.7062 0.2654 0.5633 0.10024 0.2716 0.08674  31 0.7053 0.2489 0.5650 0.10472 0.2736 0.08820  32 0.7051 0.2913 0.5639 0.10157 0.3009 0.08834  33 0.7012 0.3042 0.5600 0.10095 0.3103 0.08925  34 0.6966 0.2911 0.5591 0.09998 0.2669 0.08564  35 0.7018 0.2833 0.5639 0.09873 0.2695 0.08079  36 0.7027 0.2869 0.5650 0.10083 0.2709 0.08663  37 0.6963 0.2999 0.5605 0.10201 0.3123 0.08442 \*  38 0.7026 0.3054 0.5639 0.10053 0.3083 0.08338  39 0.7051 0.3004 0.5693 0.10527 0.3050 0.08816  40 0.7007 0.2572 0.5655 0.10496 0.2753 0.08267  41 0.7007 0.2630 0.5679 0.10659 0.2652 0.08106  The top 5 variables (out of 37):  ClayInd\_Mean\_Sentinel\_khavr, SGSI\_Mean\_Sentinel\_khavr, MSAVI2\_Mean\_Sentinel\_khavr, bio\_15\_khavr, GNDVI\_Mean\_Sentinel\_khavr  > predictors(result\_rfe1)  [1] "ClayInd\_Mean\_Sentinel\_khavr" "SGSI\_Mean\_Sentinel\_khavr"  [3] "MSAVI2\_Mean\_Sentinel\_khavr" "bio\_15\_khavr"  [5] "GNDVI\_Mean\_Sentinel\_khavr" "pH\_khavr"  [7] "NDVI\_Mean\_Sentinel\_khavr" "PlanCur\_kh"  [9] "bio\_12\_khavr" "aoi\_dem\_clip\_khavr"  [11] "ndvi\_mean\_kh" "Sen\_B03\_Mean\_30m\_aoi"  [13] "Clay\_khavr" "Saturation\_Mean\_Sentinel\_khavr"  [15] "Sen\_B05\_Mean\_30m\_aoi" "Sen\_B04\_Mean\_30m\_aoi"  [17] "sgsi\_mean\_kh" "b6\_reflectance"  [19] "Sen\_B02\_30m\_aoi" "bio\_1\_khavr"  [21] "srad\_khavr" "ProflCur\_kh"  [23] "Sen\_B12\_Mean\_30m\_aoi" "gndvi\_mean\_kh"  [25] "slope\_kh" "FlowAcc\_kh"  [27] "b4\_reflectance" "spi\_kh"  [29] "b2\_reflectance" "b7\_reflectance"  [31] "ci\_mean\_kh" "Twi\_kh"  [33] "satind\_mean\_kh" "b3\_reflectance"  [35] "Sen\_B11\_Mean\_30m\_aoi" "Sand\_khavr"  [37] "Sen\_B08A\_Mean\_30m\_aoi" |
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