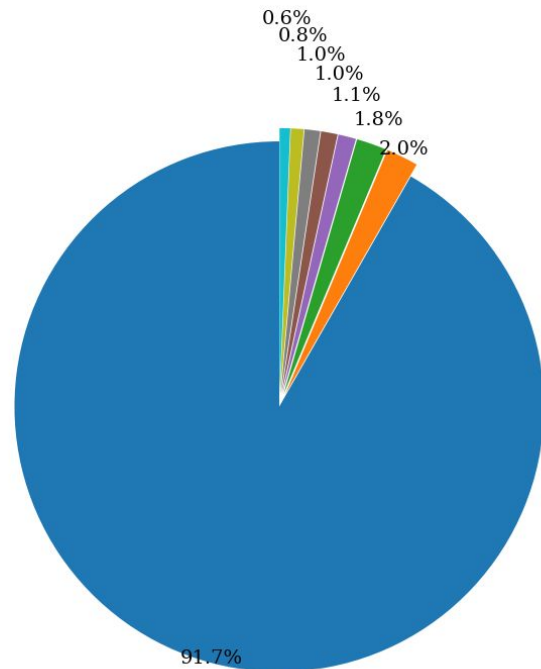# Random Forest plots

Until 08/19
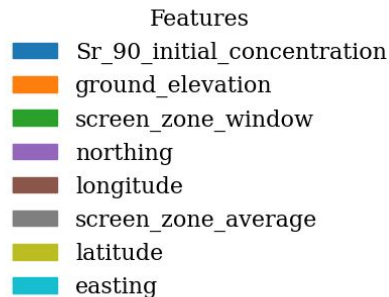Student: Vu Anh Le
PI: Haruko Murakami Wainwright

Feature Importances for Sr-90 with the analyte concentration
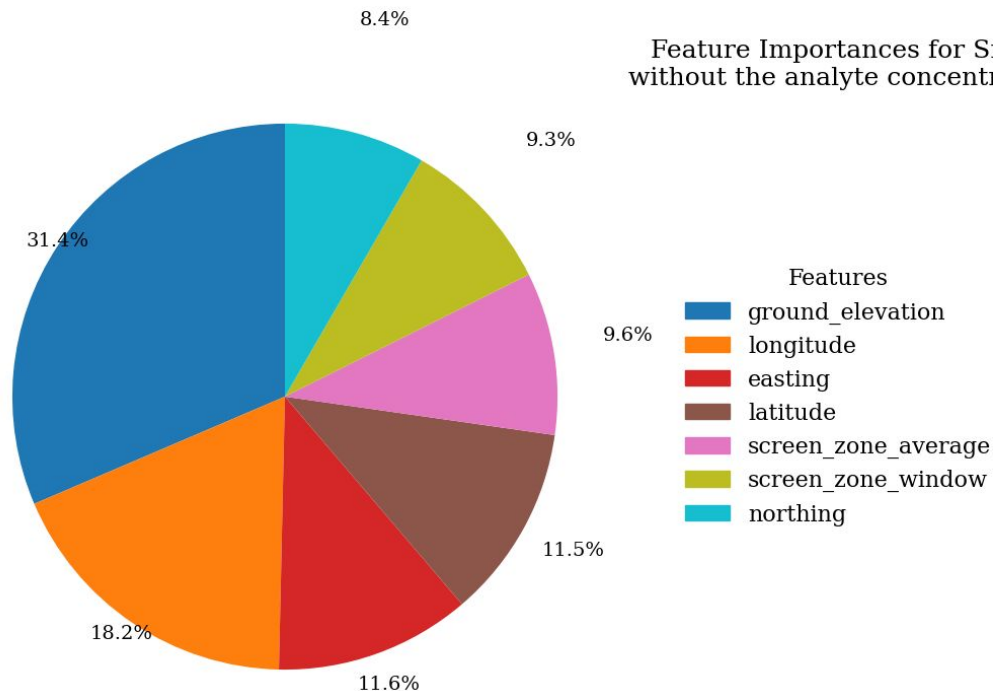

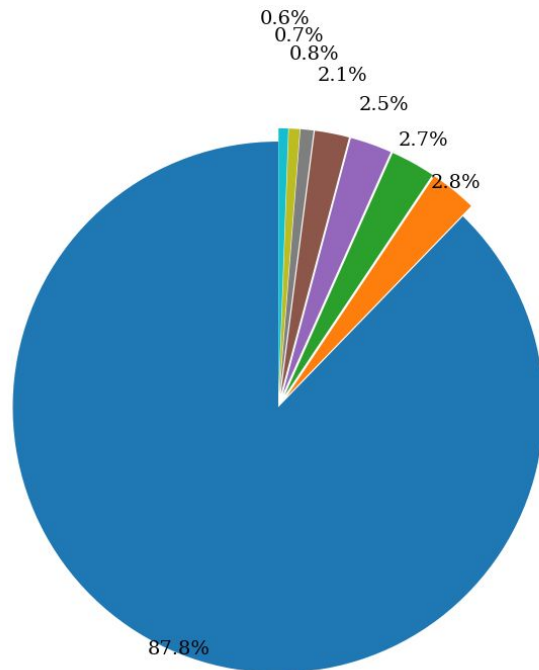Feature Importances for Sr-90 with the analyte concentration

0.6%
0.8%
1.0%
1.0%
1.1%
1.8%
2.0%
91.7%

Features
- Sr_90_initial_concentration
- ground_elevation
- screen_zone_window
- northing
- longitude
- screen_zone_average
- latitude
- easting

- Cross-validated R^2 scores: [-0.19843926 0.82404277 0.49005165 -5.13790411 -23.28384935]
- Mean R^2 score: -5.46121966044404
- Mean Squared Error: 3.5969866423461517e-08
- R^2 Score: 0.9074630417155112
- Feature Importances:
- Sr_90_initial_concentration   0.917244
- ground_elevation   0.019602
- screen_zone_window   0.018426
- northing   0.010831
- longitude   0.010075
- screen_zone_average   0.009523
- latitude   0.007839
- easting   0.006460

Feature Importances for Sr-90 without the analyte concentration

Feature Importances for Sr-90 without the analyte concentration

Features
- ground_elevation
- longitude
- easting
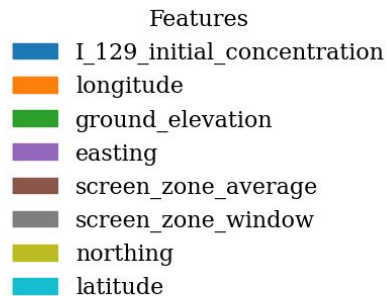- latitude
- screen_zone_average
- screen_zone_window
- northing

- Cross-validated R^2 scores: [-0.4014842 -52.05470738 -11.91180222 -26.6300194 -85.83511528]
- Mean R^2 score: -35.36662569457485
- Mean Squared Error: 7.206368980277929e-08
- R^2 Score: 0.8146071887340529
- Feature Importances:
- ground_elevation   0.314237
- longitude   0.182247
- easting   0.116032
- latitude   0.114966
- screen_zone_average   0.096261
- screen_zone_window   0.092635
- northing   0.083622

Feature Importances for I-129 with the analyte concentration
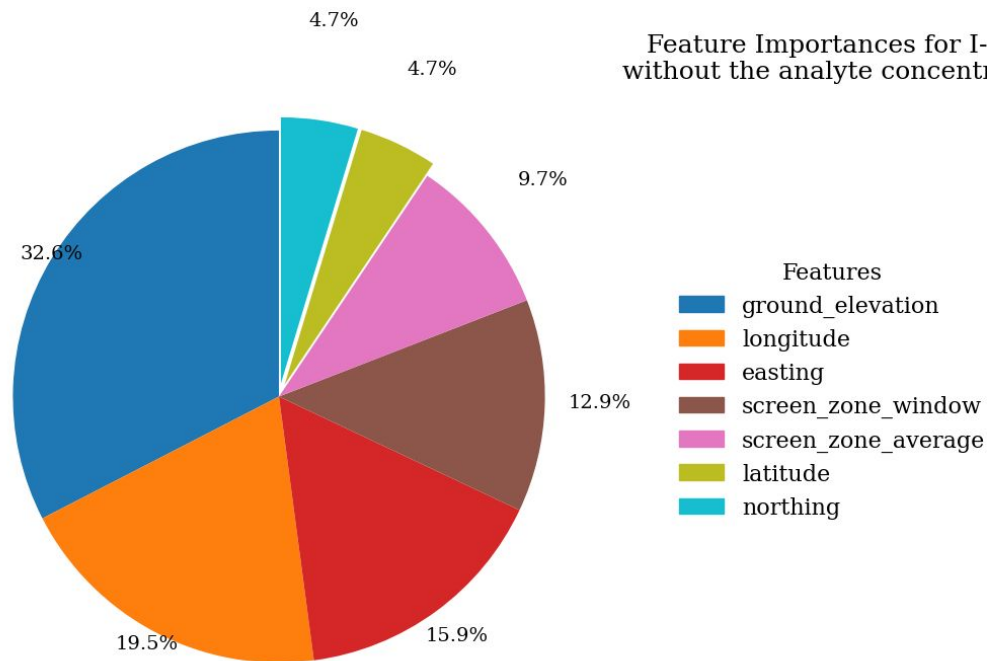

Feature Importances for I-129 with the analyte concentration
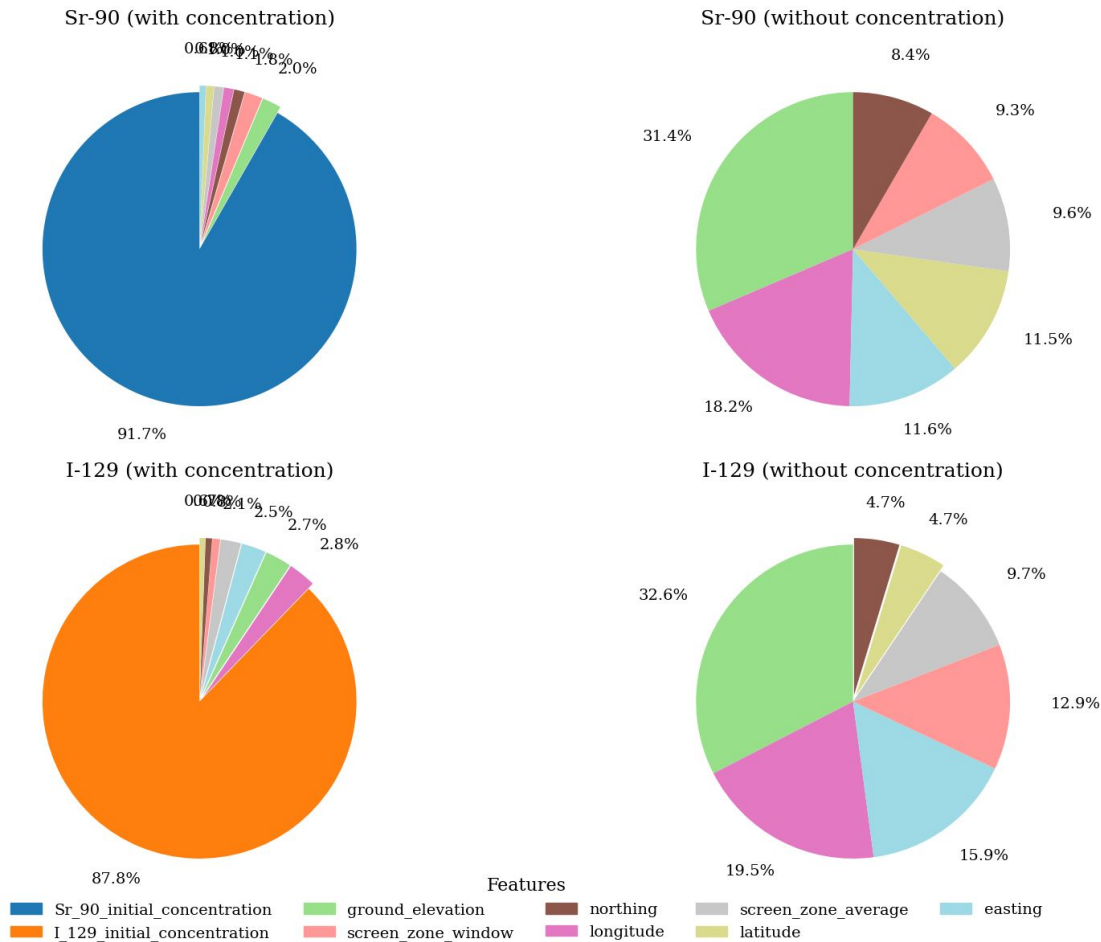
Features
- I_129_initial_concentration
- longitude
- ground_elevation
- easting
- screen_zone_average
- screen_zone_window
- northing
- latitude

0.6%
0.7%
0.8%
2.1%
2.5%
2.7%
2.8%
87.8%

- Cross-validated R^2 scores: [0.15430826 0.64095158 -8.89981705 -6.13593633 0.5748451]
- Mean R^2 score: -2.7331296888723804
- Mean Squared Error: 1.00863531992252846e-08
- R^2 Score: 0.9277619296158255
- Feature Importances:
- I_129_initial_concentration   0.877624
- longitude   0.028442
- ground_elevation   0.027231
- easting   0.025351
- screen_zone_average   0.020893
- screen_zone_window   0.007931
- northing   0.006645
- latitude   0.005883

Feature Importances for I-129 without the analyte concentration

Feature Importances for I-129
without the analyte concentration

4.7%
4.7%
9.7%
32.6%
12.9%
19.5%
15.9%

Features
- ground_elevation
- longitude
- easting
- screen_zone_window
- screen_zone_average
- latitude
- northing

- Cross-validated R^2 scores: [-0.22551788 -26.62387488 -24.28006399 -2.43512511 -0.20169076]
- Mean R^2 score: -10.75325452459157
- Mean Squared Error: 1.7405224094577344e-08
- R^2 Score: 0.8753444601474449
- Feature Importances:
- ground_elevation   0.325661
- longitude   0.195330
- easting   0.158860
- screen_zone_window   0.129134
- screen_zone_average   0.096822
- latitude   0.047426
- northing   0.046768

Overall importance scores

Sr-90 (with concentration)

91.7%

Sr-90 (without concentration)

8.4%
9.3%
9.6%
11.5%
11.6%
18.2%
31.4%

I-129 (with concentration)

87.8%
2.8%
2.7%
2.5%

I-129 (without concentration)

4.7%
4.7%
9.7%
12.9%
15.9%
19.5%
32.6%

Features
- Sr_90_initial_concentration
- I_129_initial_concentration
- ground_elevation
- screen_zone_window
- northing
- longitude
- screen_zone_average
- latitude
- easting

Overall performance