

Spatial assignment of test sample

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Input

Website Identifier: Blind 8_CD

Isotope values of test sample

Table 1: Isotope values of test sample

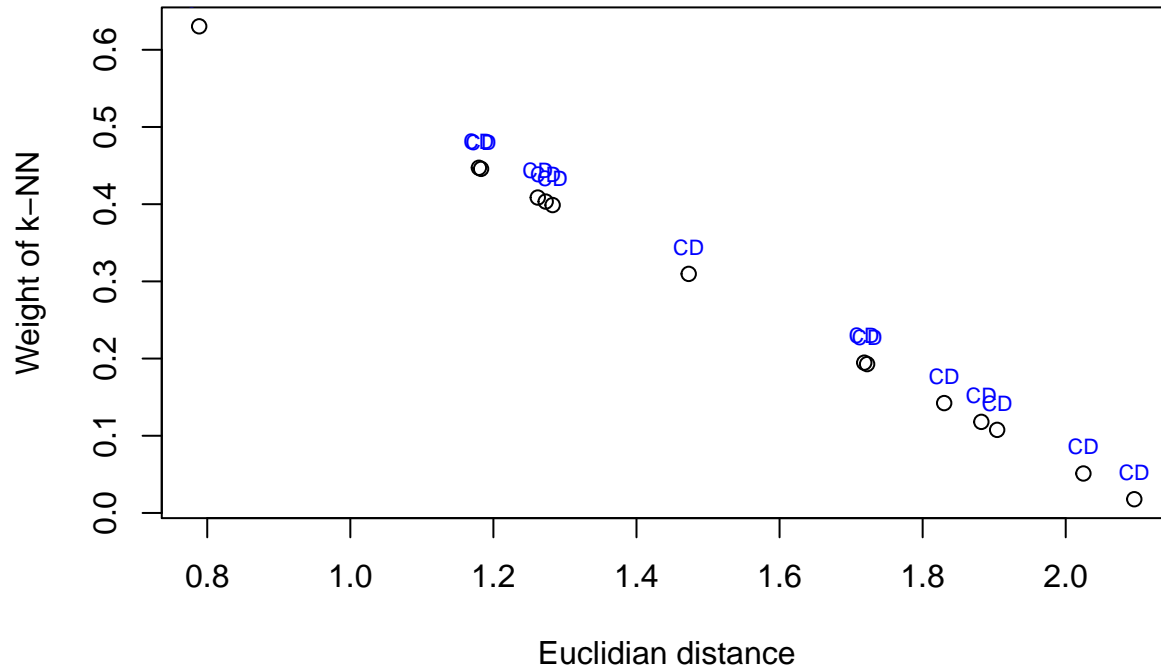
13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-18.6	9.7	15.5	-19.6	2.4

Output

Model

```
##
## Call:
## train.kknn(formula = fmla, data = ivory.train, kmax = 15, distance = 2, kernel = knl)
##
## Type of response variable: nominal
## Minimal misclassification: 0.3765867
## Best kernel: triangular
## Best k: 15
Classifier: country_code
```


Assignment of test sample to nearest neighbours



Best fitted reference entries

Table 2: Details of best fitted reference entry (row 1) and other fitted entries within best classifier

lon	lat	location	13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-19.5	9.3	16.7	-20.7	2.4
29.29	0.29	Dem. Rep. Congo, Beni	-18.0	9.4	16.9	-22.6	5.3
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-19.1	8.5	16.5	-28.6	2.8
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-19.1	11.4	17.1	-15.4	2.7
30.26	1.23	Dem. Rep. Congo, Kasenyi	-19.6	9.2	16.0	-30.5	3.9
21.93	-1.76	Dem. Rep. Congo, Rumangabo	-17.4	9.8	17.6	-16.7	3.5
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-19.4	8.2	17.6	-25.6	3.0
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-18.6	12.7	17.0	-20.1	3.5
29.09	3.40	Dem. Rep. Congo, Gangala na Bodio	-20.5	9.1	17.5	-23.1	5.5
29.09	3.40	Dem. Rep. Congo, Gangala na Bodio	-20.6	8.2	16.7	-29.0	5.0
29.29	0.29	Dem. Rep. Congo, Beni terr	-19.6	8.9	19.0	-21.4	3.4
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-18.6	8.5	17.7	-34.4	3.8
28.50	-2.30	Dem. Rep. Congo, Bukavu	-21.5	8.6	17.4	-27.3	1.2
29.21	-1.20	Dem. Rep. Congo, Rumangabo	-18.2	8.4	19.2	-25.1	4.3

Country of prediction: CD

Testing robustness of assignment: Wilcoxon signed rank test

If p-value > 0.05 , the test concludes that the isotope signature of the test sample is similar to the respective nearest neighbour reference sample.

P-values for the k nearest neighbours in Wilcoxon Test

“0.846694, 0.532545, 0.270299, 0.133700, 0.112070, 0.093216, 0.045875, 0.036742, 0.013749, 0.001906, 0.001600, 0.001115, 0.001115, 0.000031”

Goodness of fit of test sample:

- good fit: if $p > 0.05$ for at least two tested nearest neighbour reference samples;
- moderate fit: if $p > 0.05$ for at least one tested nearest neighbour reference samples;
- uncertain: if $p > 0.05$ for none of the tested nearest neighbour reference samples.

Assumption: At least two nearest reference samples are available.

Overall goodness of fit of test sample: “**good fit**”