

Spatial assignment of test sample

November 24, 2016

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Input

Website Identifier: Blind 7_CD

Isotope values of test sample

Table 1: Isotope values of test sample

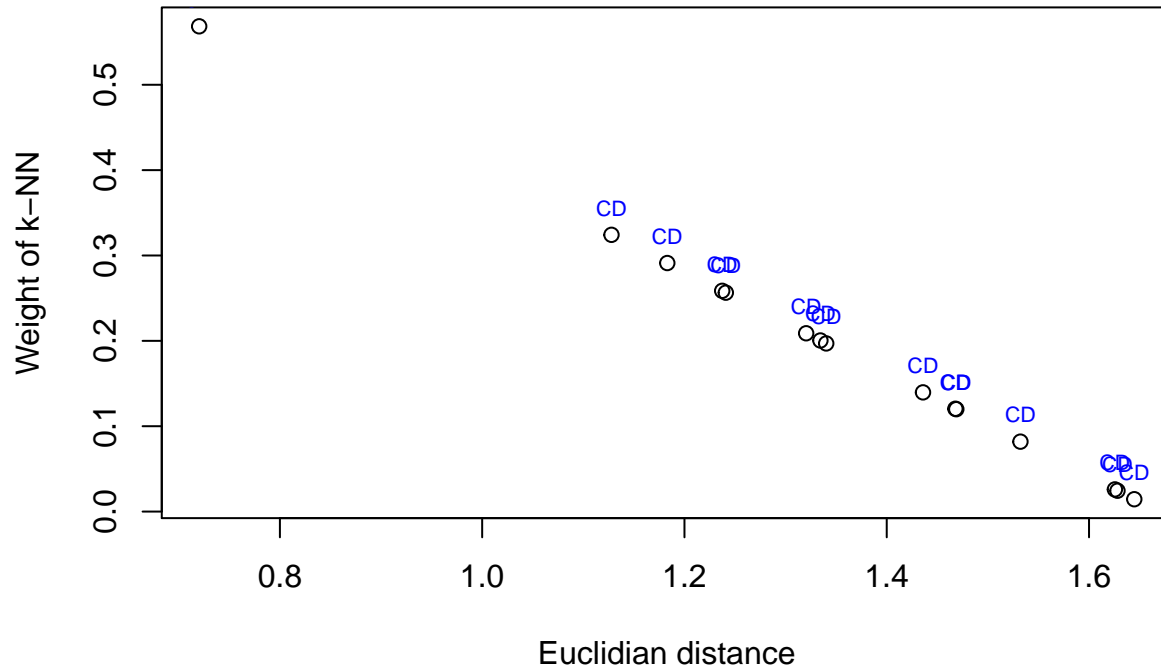
13C/12C	15N/14N	18O/16O	2H/1H	34S/32S
-25.4	11.1	15.5	-32.7	3.4

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
23.55	-1.35	Dem. Rep. Congo, Moma	-24.8	11.4	16.0	-36.8	4.9
29.29	0.29	Dem. Rep. Congo, Beni	-24.7	11.4	17.1	-37.3	5.3
18.20	-1.55	Dem. Rep. Congo, Leopold ii meer	-24.3	11.2	16.0	-43.3	4.0
29.51	1.32	Dem. Rep. Congo, Irumu	-24.5	10.1	16.3	-39.9	5.7
29.09	3.40	Dem. Rep. Congo, Gangala na Bodio	-24.4	11.7	17.6	-29.7	3.9
25.09	-0.28	Dem. Rep. Congo, Loyo	-24.6	10.7	16.8	-42.7	5.1
26.23	1.52	Dem. Rep. Congo, Panga	-24.6	12.1	17.1	-39.9	5.2
18.20	-1.55	Dem. Rep. Congo, Leopold ii meer	-25.9	10.9	17.1	-39.7	6.2
23.55	-1.35	Dem. Rep. Congo, Moma	-24.1	11.3	16.6	-40.9	6.3
23.55	-1.35	Dem. Rep. Congo, Moma	-25.6	10.8	16.9	-44.4	5.7
23.55	-1.35	Dem. Rep. Congo, Moma	-24.2	9.9	16.8	-35.4	6.7
23.55	-1.35	Dem. Rep. Congo, Moma	-24.0	10.5	15.4	-44.8	5.7
27.18	2.25	Dem. Rep. Congo, Medje	-24.2	11.9	17.4	-37.8	6.8
16.20	-2.06	Dem. Rep. Congo, Monguende	-25.0	11.4	15.2	-49.2	4.9
23.20	-1.00	Dem. Rep. Congo, Tshuapa	-26.4	12.1	16.2	-46.3	5.7

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

“0.13369966, 0.05677265, 0.00001310, 0.00001310, 0.00001310, 0.00001310, 0.00000962, 0.00000701, 0.00000503, 0.00000503, 0.00000358, 0.00000250, 0.00000250, 0.00000116, 0.00000077”

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**”