# Nutzung von GeoDaten in den Sozialwissenschaften - Das Arbeiten mit OpenStreetMap Daten

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### Ausschnitte herunterladen

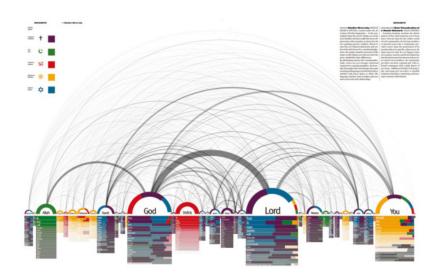
<www.openstreetmap.org/export>



Figure 1: osm export

### Das R-Paket XML - Gaston Sanchez

### library("XML")



Wichtiger für mich:

work with XML data

## Funktionen im XML Paket

Function	Description
$\times$ mlName()	name of the node
xmlSize()	number of subnodes
xmlAttrs()	named character vector of all attributes
xmlGetAttr()	value of a single attribute
xmlValue()	contents of a leaf node
xmIParent()	name of parent node
xmlAncestors()	name of ancestor nodes
getSibling()	siblings to the right or to the left
xmINamespace()	the namespace (if there's one)

### Beispiel: administrative Grenzen Berlin

#### Administrative Grenzen für Deutschland

```
url <- "http://api.openstreetmap.org/api/0.6/relation/62423</pre>
BE <- xmlParse(url)</pre>
```

```
-- com version="0.6" generator="CGimap 0.4.0 (1984 thorn-03 opentretmap.org)" copyright="OpenStreetMap and contributors" attribution="http://www.openstreetmap.org/copyright" liceus="http://opendatecommons.org/liceus=code/1-0/">
- crelation id="6-2222" visible="rule" version="2005" changeset="36072269" timestamp="2015-12-20T19:49-522" user="tbics" uid="278800">
- cmember type="nude" ref="201091899" role="admin contre*/>
- cmember type="mude" ref="79193359" role="outer"/>
- cmember type="mude" ref="79193359" role="outer"/>
- cmember type="mude" ref="79183598" role="outer"/>
- cmember type="mude" ref="79187568" role="outer"/>
- cmember type="mude" ref="79187568" role="outer"/>
- cmember type="mude" ref="99035898" role="outer"/>
- cmember type="mude" ref="97035898" role="outer"/>
- cmember t
```

Figure 3: Admin Berlin

# Das XML analysieren

► Tobi Bosede - Working with XML Data in R

```
xmltop = xmlRoot(BE)
class(xmltop)
## [1] "XMLInternalElementNode" "XMLInternalNode"
## [3] "XMLAbstractNode"
xmlSize(xmltop)
## [1] 1
xmlSize(xmltop[[1]])
## [1] 322
Xpath, the XML Path Language, is a query language for selecting
```

xpathApply(BE,"//tag[@k = 'source:population']")

nodes from an XML document

# More working example with XML files:

- Extracting data from XML
- Duncan Temple Lang A Short Introduction to the XML package for R

### Further information

- Manipulating Data from the Web
- Information on xquery
- ▶ R and the web (for beginners), Part II: XML in R
- String Manipulation

## Kompletter Datensatz

- geofabrik
- ► Shapefiles are not complete
- but e.g. germany-latest.osm.pbf

#### Referenzen

#### citation("XML") ## ## To cite package 'XML' in publications use: ## Duncan Temple Lang and the CRAN Team (2016). XML: Too. ## ## Parsing and Generating XML Within R and S-Plus. R pack version 3.98-1.4. https://CRAN.R-project.org/package= ## ## ## A BibTeX entry for LaTeX users is ## ## @Manual{. ## title = {XML: Tools for Parsing and Generating XML \ author = {Duncan Temple Lang and the CRAN Team}, ## ## $vear = \{2016\}.$ note = {R package version 3.98-1.4}, ## url = {https://CRAN.R-project.org/package=XML}, ## ##