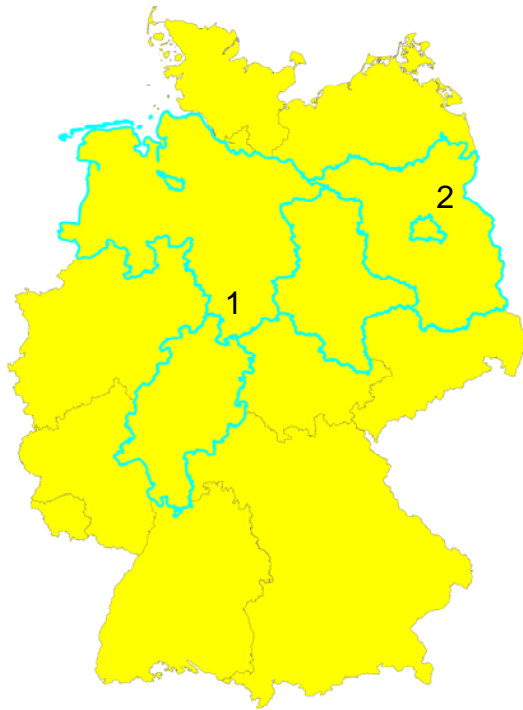


# Supraregional estimation of the **base saturation** of forest soils:

A **generalized linear model** based on Level I data

Fleck<sup>1</sup>, S., Ahrends<sup>1</sup>, B., Evers<sup>1</sup>, J., Riek<sup>2</sup>, W., Meesenburg<sup>1</sup>, H., Paar<sup>1</sup>, U.



<sup>1</sup>: Northwest German Forest Research Station (NW-FVA)

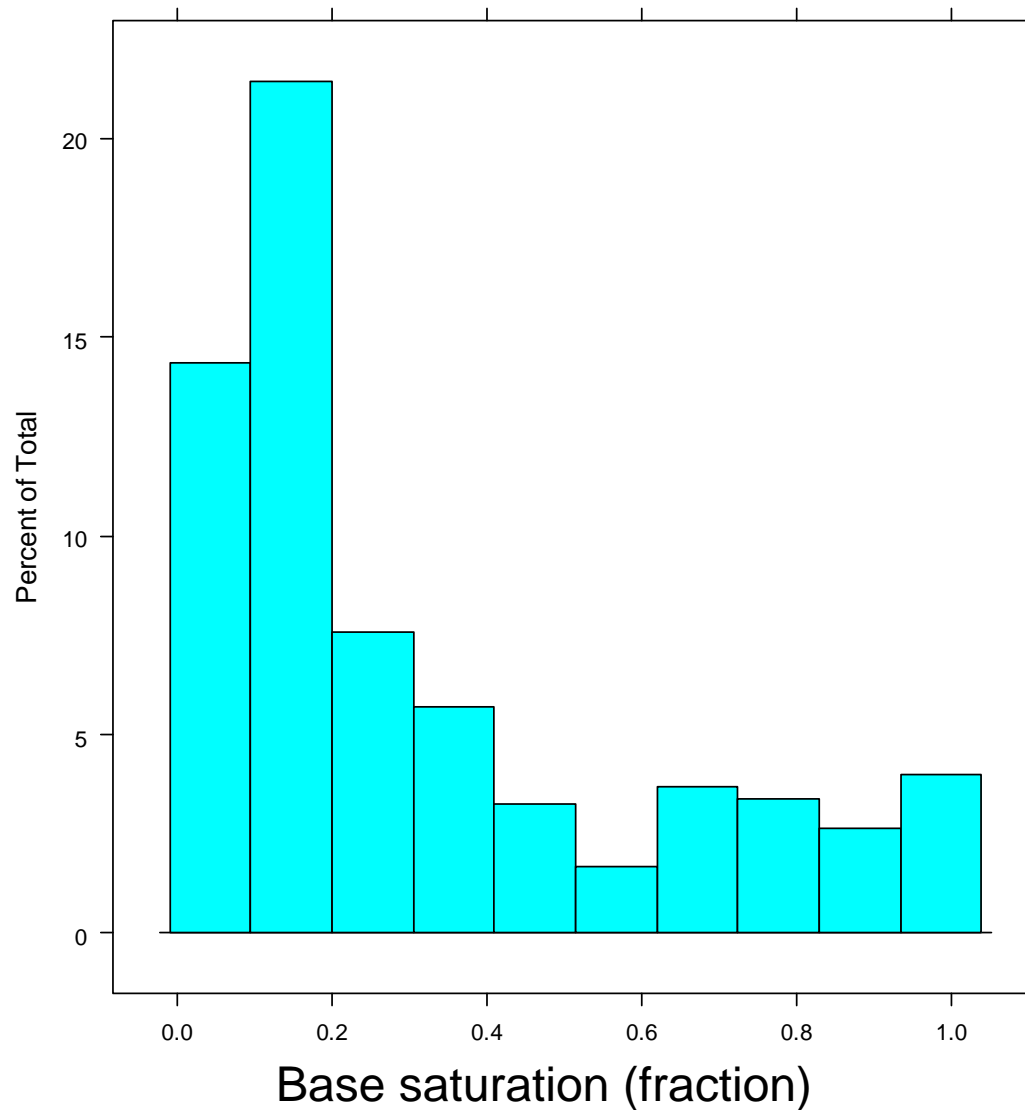
<sup>2</sup>: Landeskompetenzzentrum Forst Eberswalde (LFE)

Level I data from Hesse, Lower-Saxony,  
Saxony-Anhalt, and Brandenburg

Project NaLaMa-nT

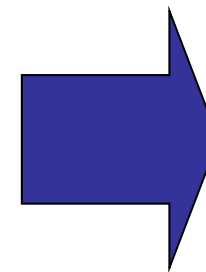


# No normal or binomial distribution: base saturation was **overdispersed**



Base saturation data of:

- 579 Level I plots
- uppermost 90 cm



Quasi-GLM with  
binomial  
distribution

Software: R

# Predictors used in GLM-approximation

- Liming y/n
- stone content
- precipitation variables
- temperature variables
- soil type
- country
- deposition of S and N
- clay content
- tree species
- podzolation
- inclination
- parent material (consolidated and unconsolidated)
- potential cation exchange capacity ( $\text{CEC}_{\text{pot}}$ )
- weathering surface area
- $\text{C}_{\text{org}}$
- and more

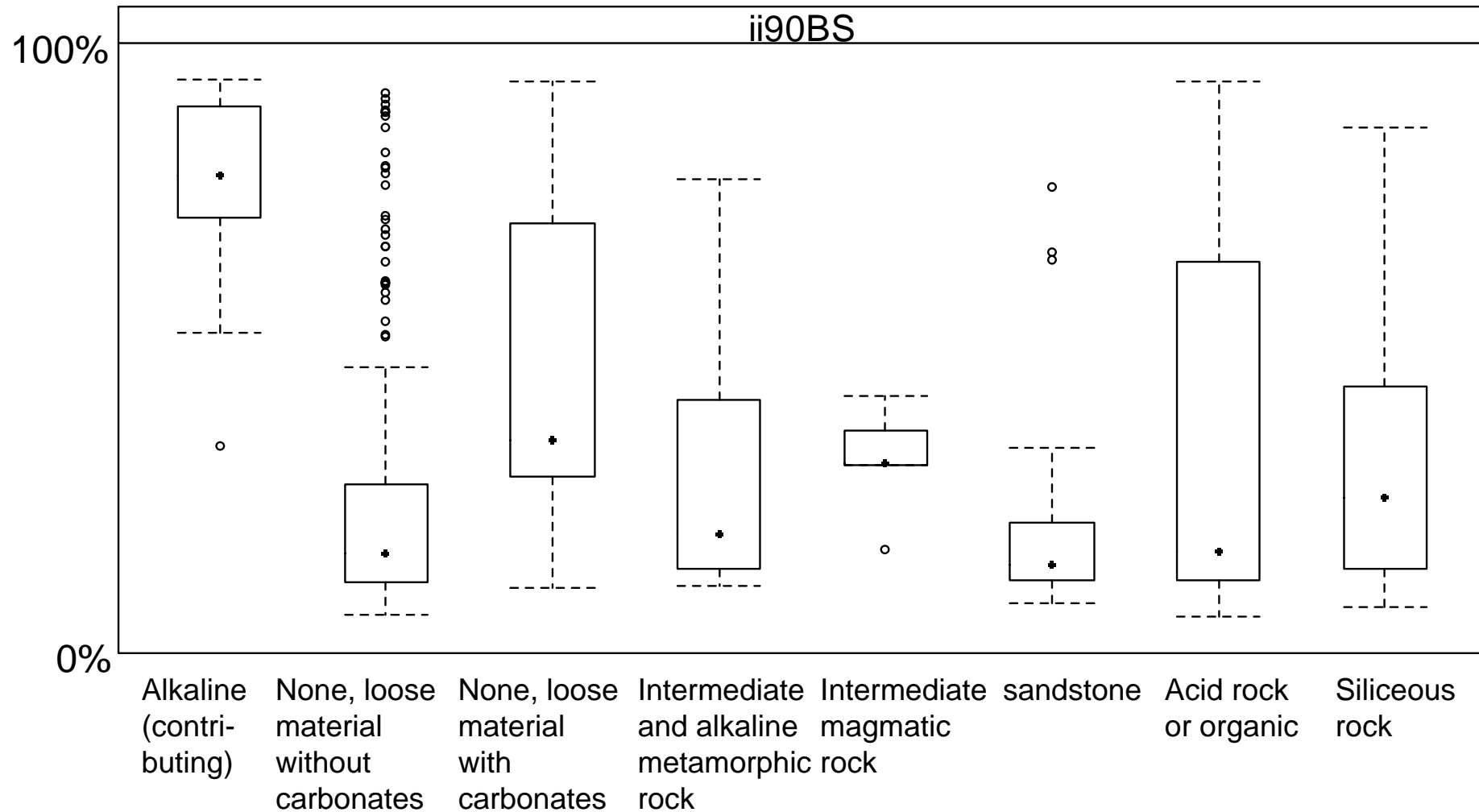
## Most significant:

1. Consolidated parent material
2. Podzolation
3. Weathering surface area
4. Broadleaf/coniferous
5. Unconsolidated parent material

$$R^2 = 0.66$$

# Relationship between **consolidated parent material** and base saturation

8 classes of consolidated parent material:



## Relationship to explaining variables

