

# Measurement of soil moisture with cosmic-ray neutrons in deciduous forests

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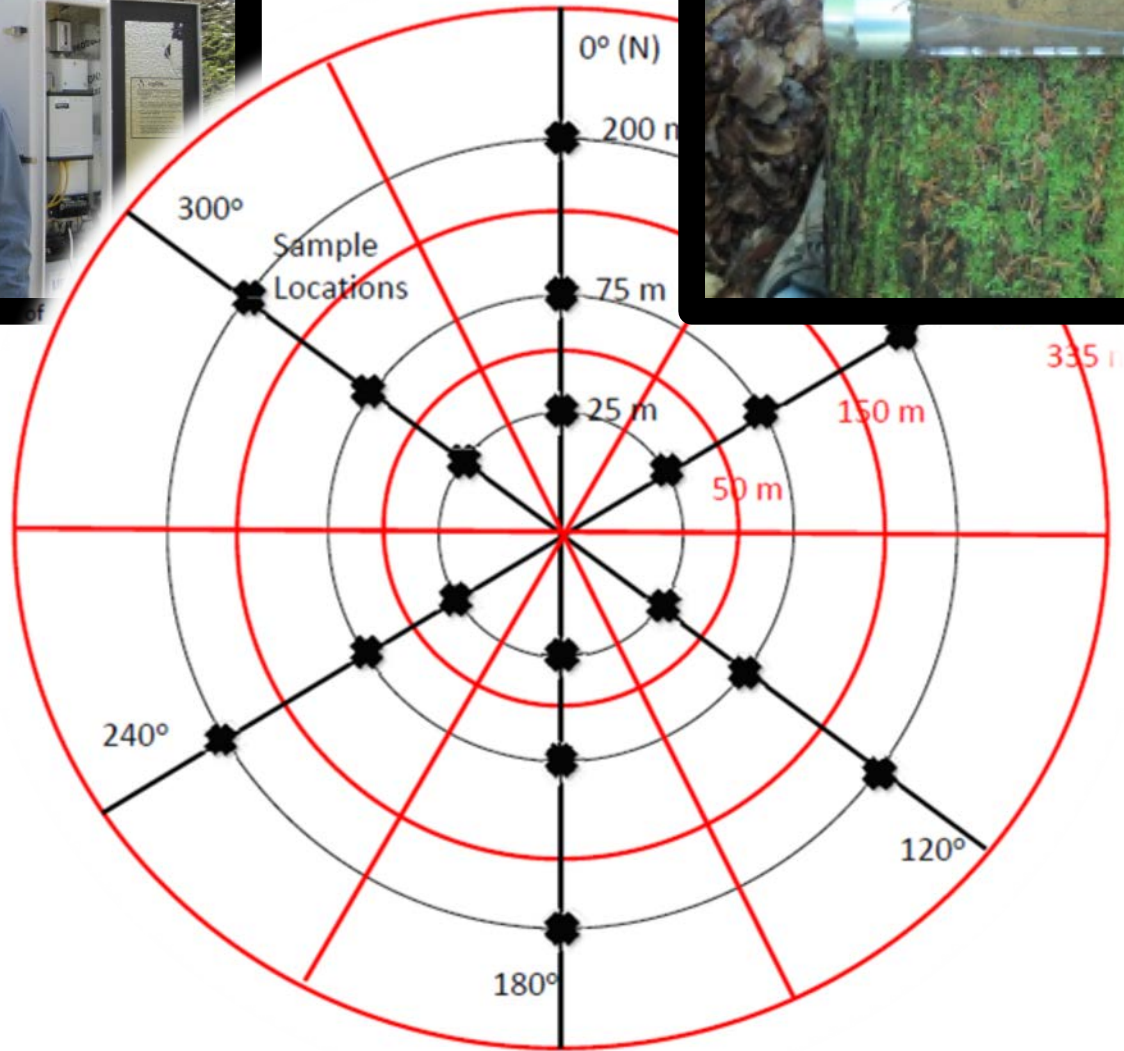
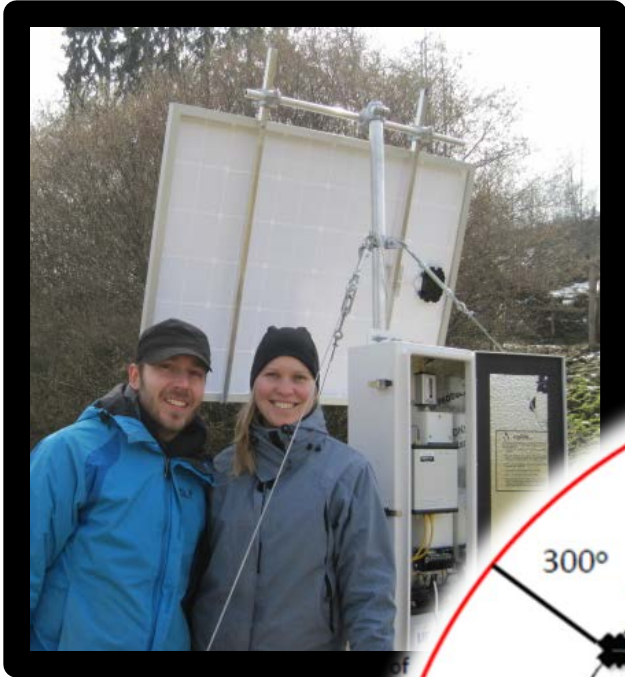
Danmark

Güsterpohl

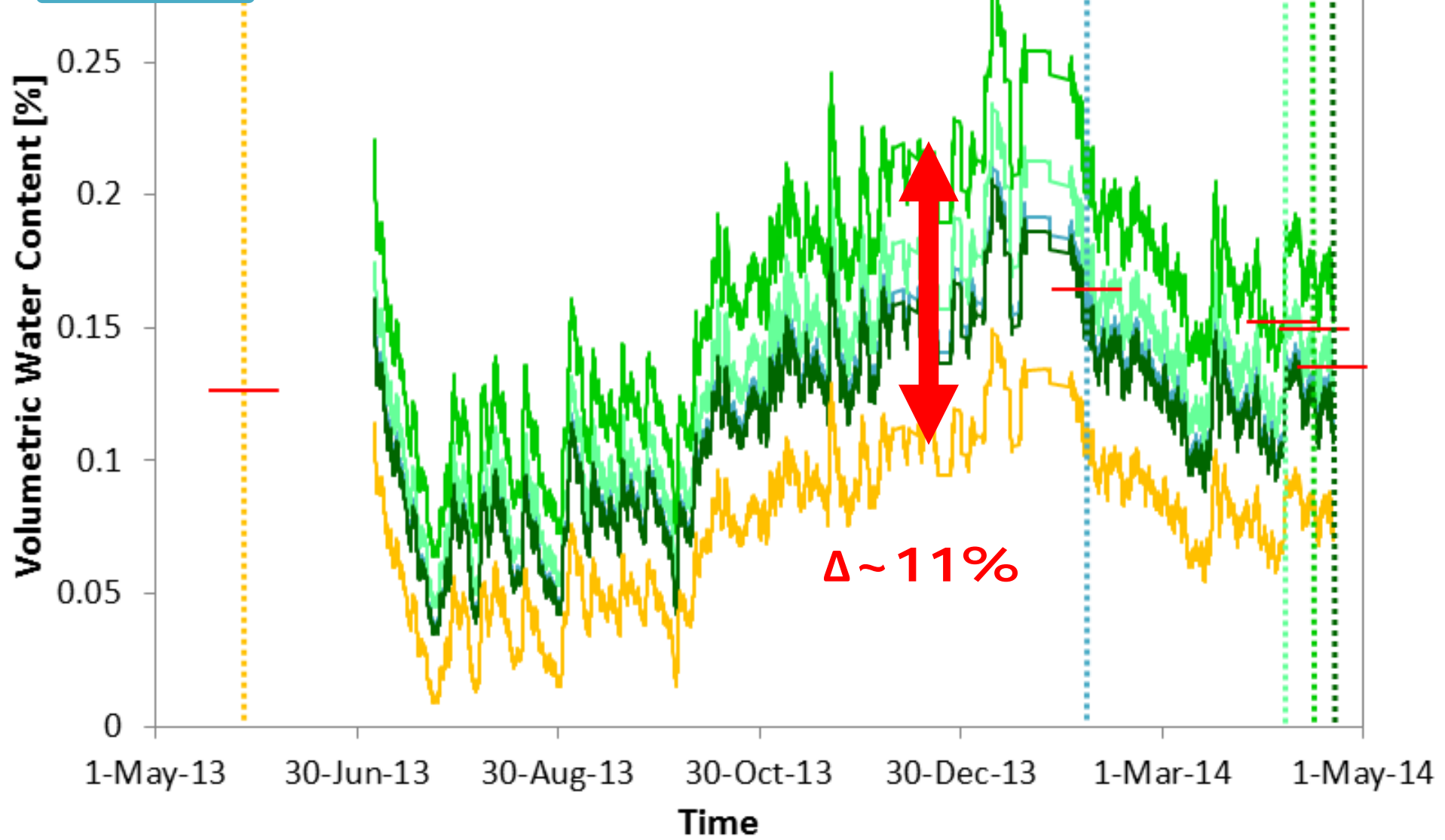
Karte

Google

Bilder © 2014 GeoBasis-DE/BKG, Kartendaten © 2014 GeoBasis-DE/BKG (©2009), Google Bedingungen Datenschutz Problem melden 200 m

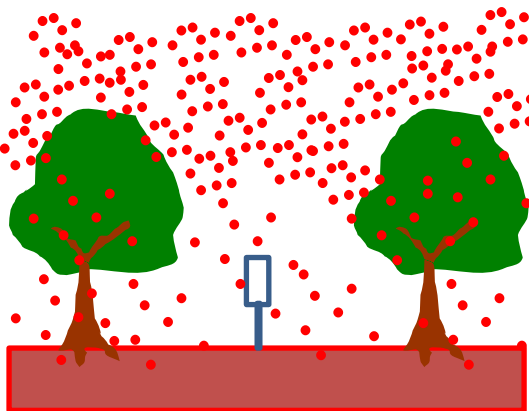
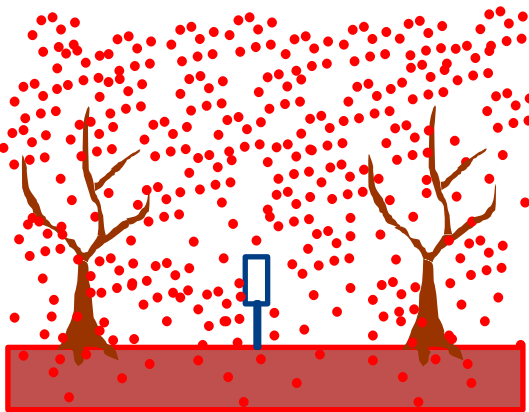






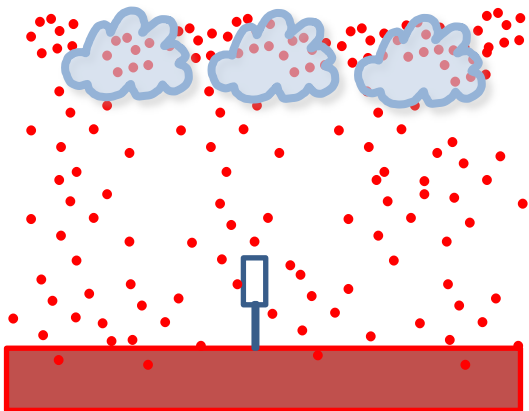
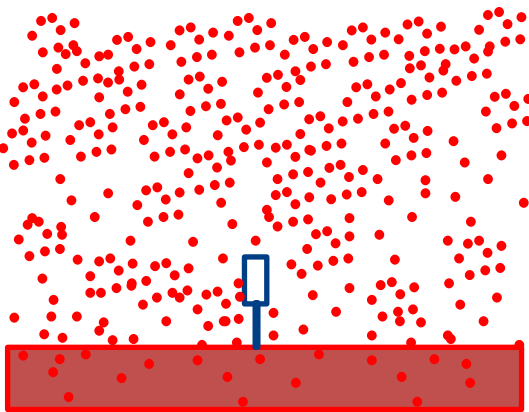
?

**Influence of leaves?**



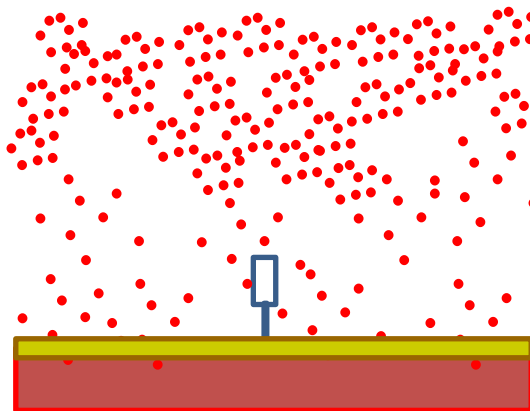
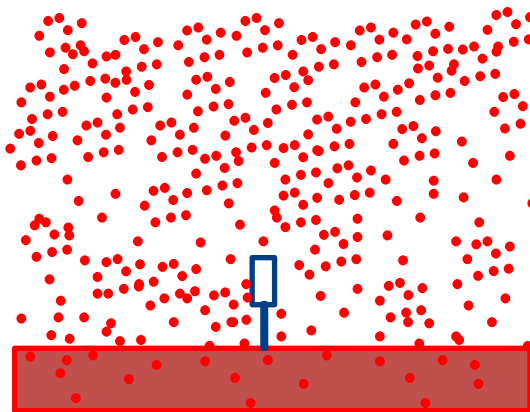
Above canopy →  
 Above soil → +  
 Out of soil → +

**Influence of clouds?**



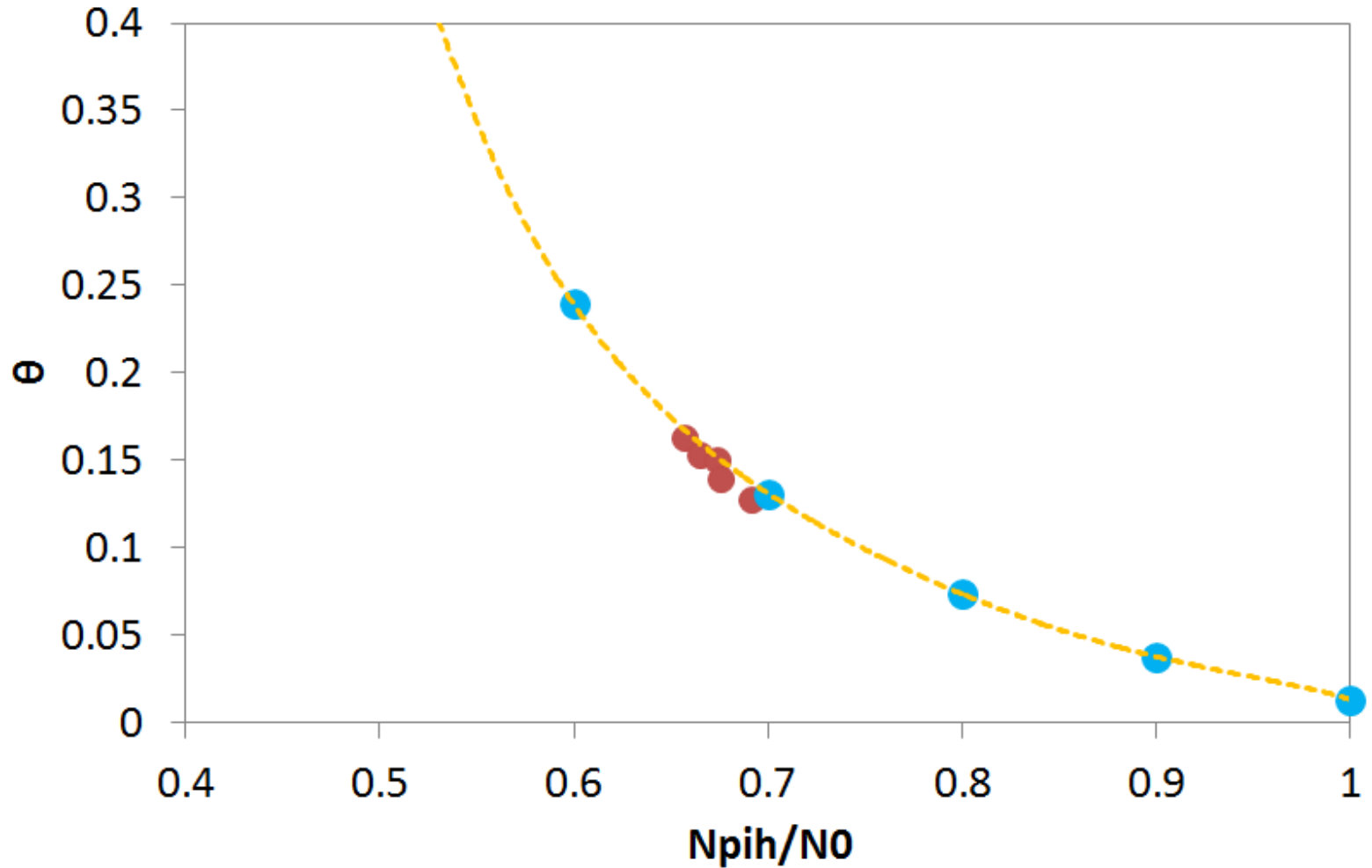
Above clouds →  
 Above soil → +  
 Out of soil → +

**Influence of litter?**

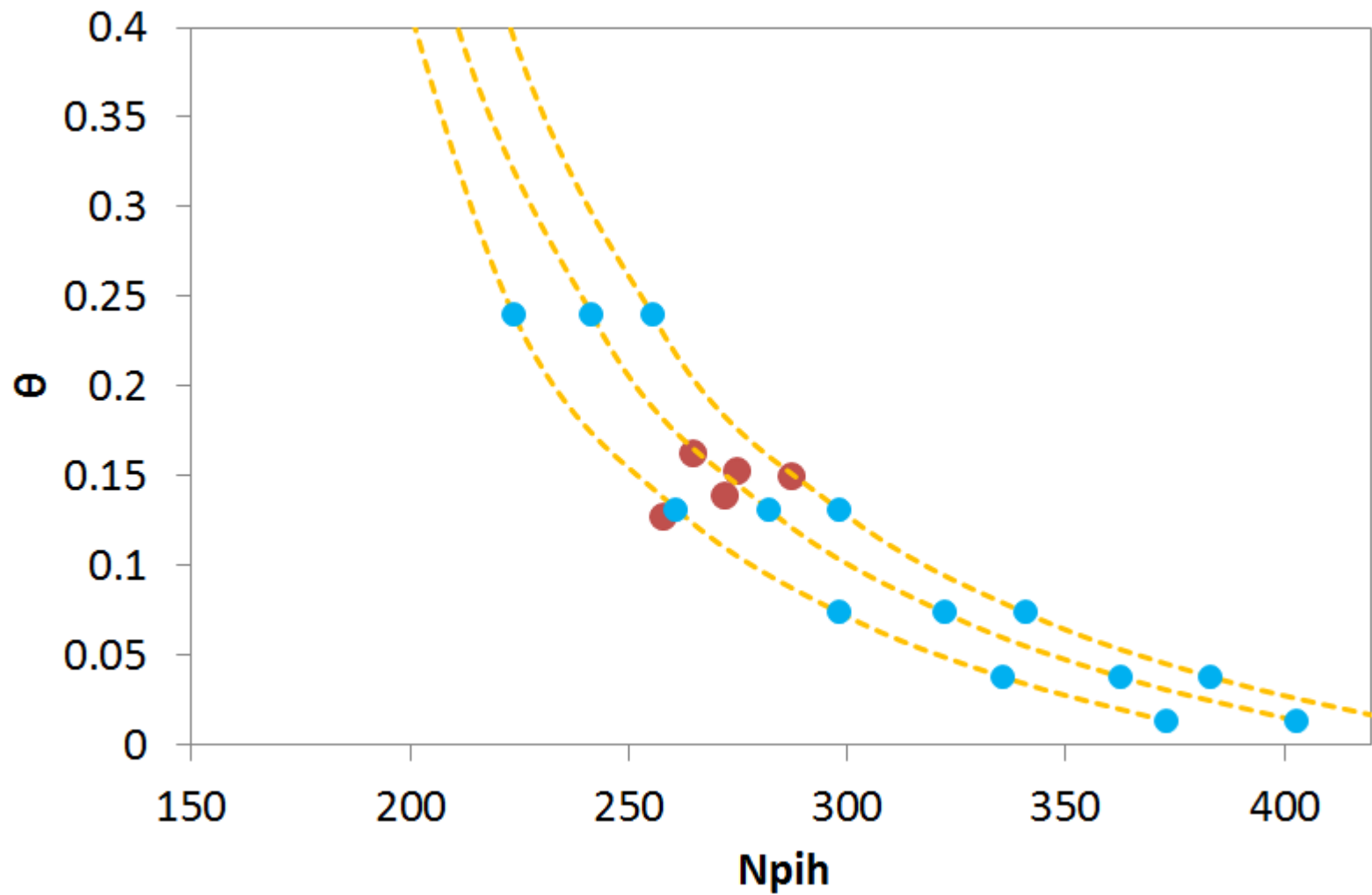


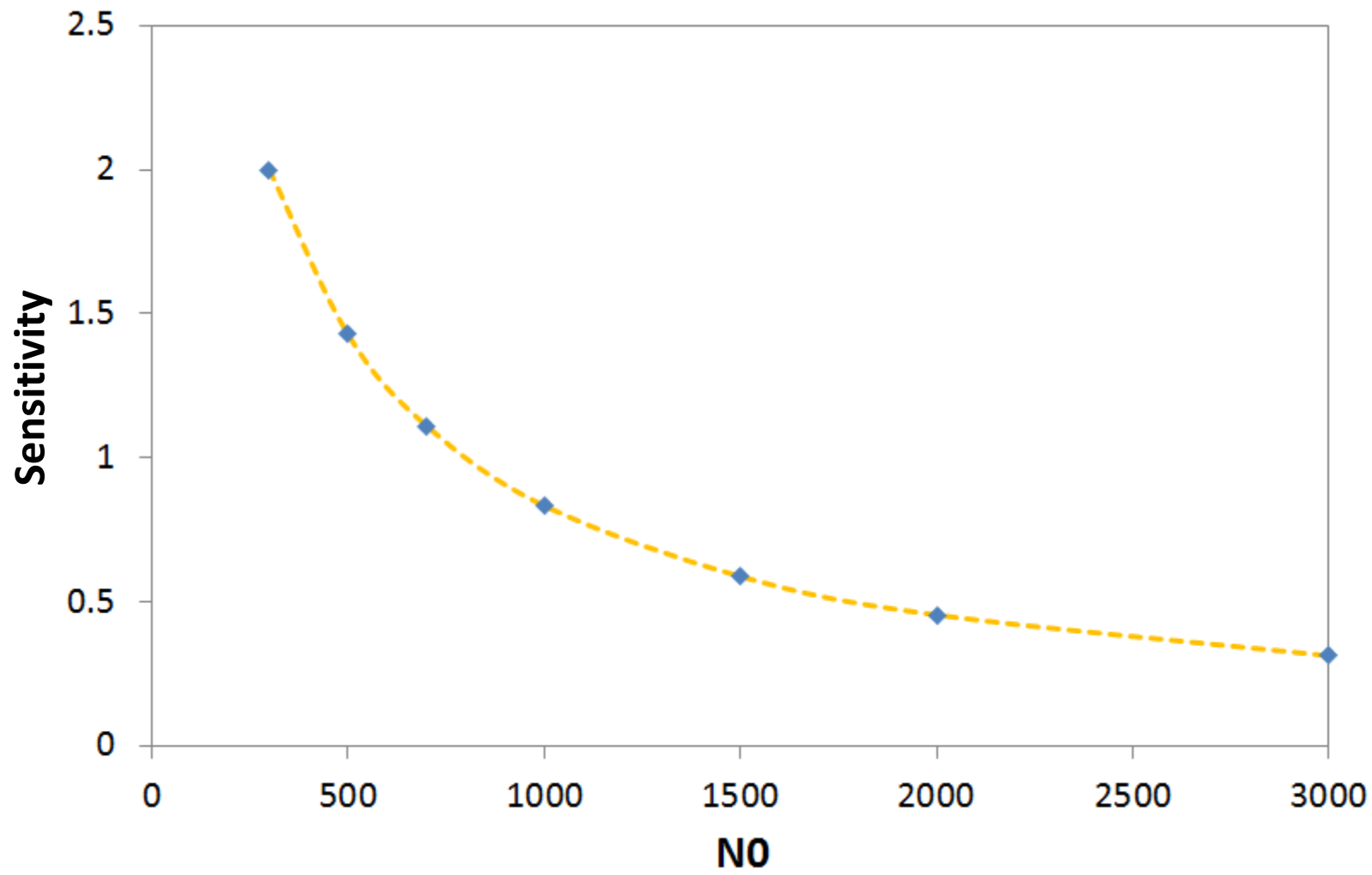
Above soil → +  
 In soil → +  
 Out of soil → +

# Calibration Function









# Solution?

- If neutron counts are low
- Calibrate more than once
- Average over several calibrations
- Add uncertainty
- $N_0 = 403 \pm 17.5$  Counts per Hour
- I'll try that and report back