

SoPhie Workshop

Gembloux Agro-Bio Tech (Liège University)
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Axel Lamparter
(Federal institute for geosciences and natural resources, BGR, Germany)

„Sinterglaszylinder“ as reference material for the measurement of WRCs and/or saturated hydraulic conductivity

- VitraPOR Sinterglaszylinder der Fa. ROBU
- Borosilicatglas 3.3
- 100 cm³
- Por. ASTM C (40-60µm)
- price 150€ (each)

Cylinder No.	Bulk density [g/cm ³]	Density "Borosilicatglas 3.3" [g/cm ³]	Porevolume [cm ³]
2240	1.457	2.23	34.65
2241	1.402	2.23	37.11
2242	1.426	2.23	36.06
2243	1.424	2.23	36.15
2244	1.432	2.23	35.78

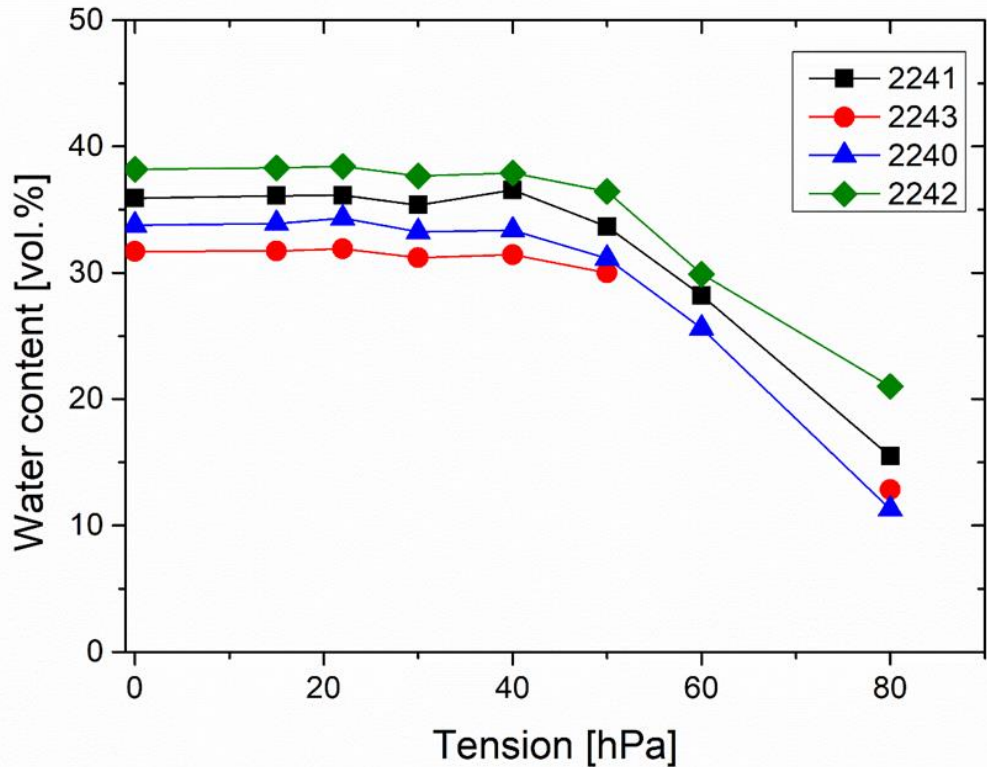


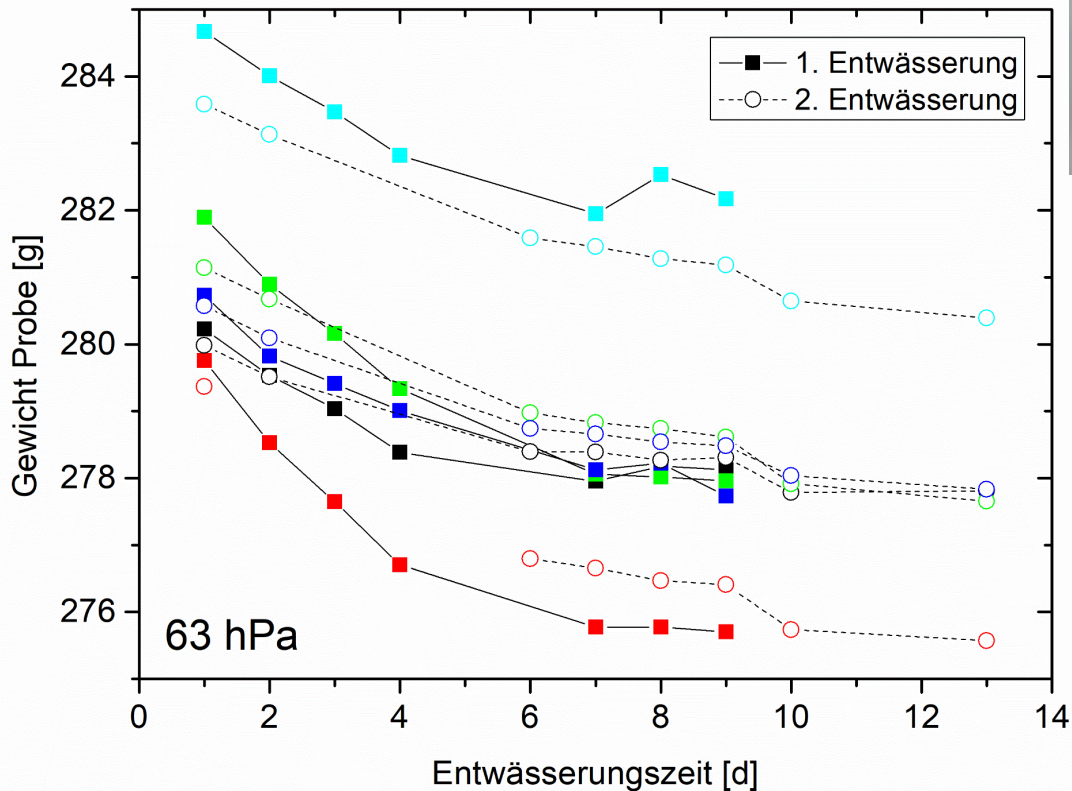
Measurement of WRC in the soil physics lab at „BGR“

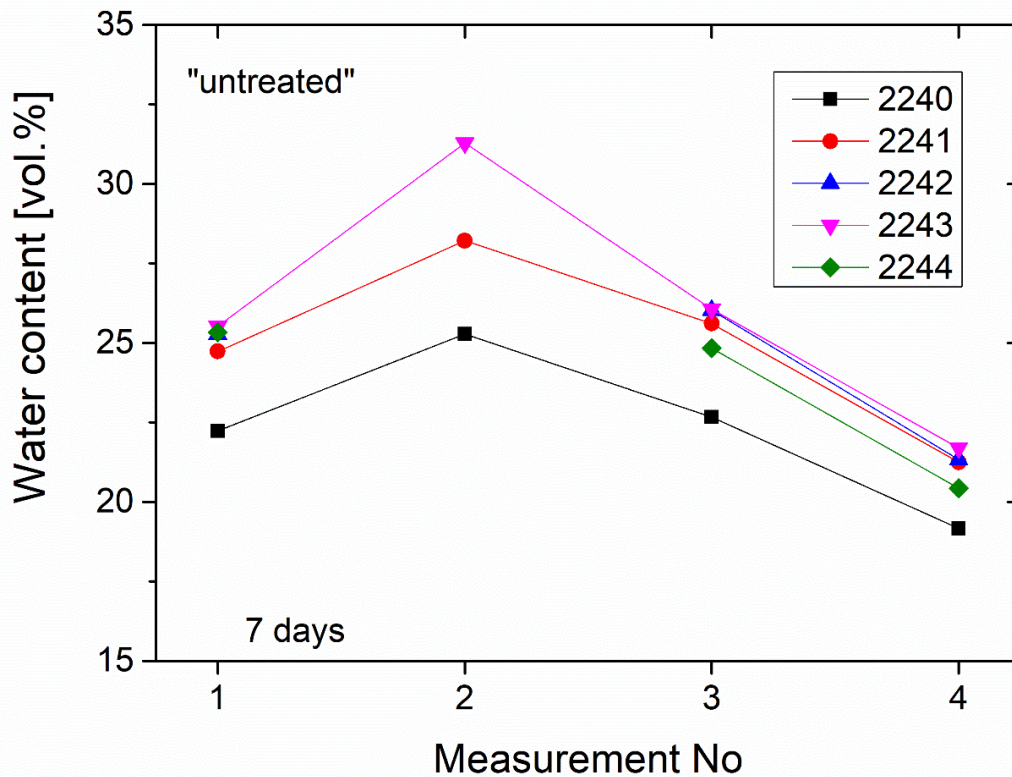
- “pF-Laborstation“ Fa. Ecotech
- 6 pressure plates / 3 pressure units
- Pressures (suctions) from 0 - -750 hPa (-312 hPa)

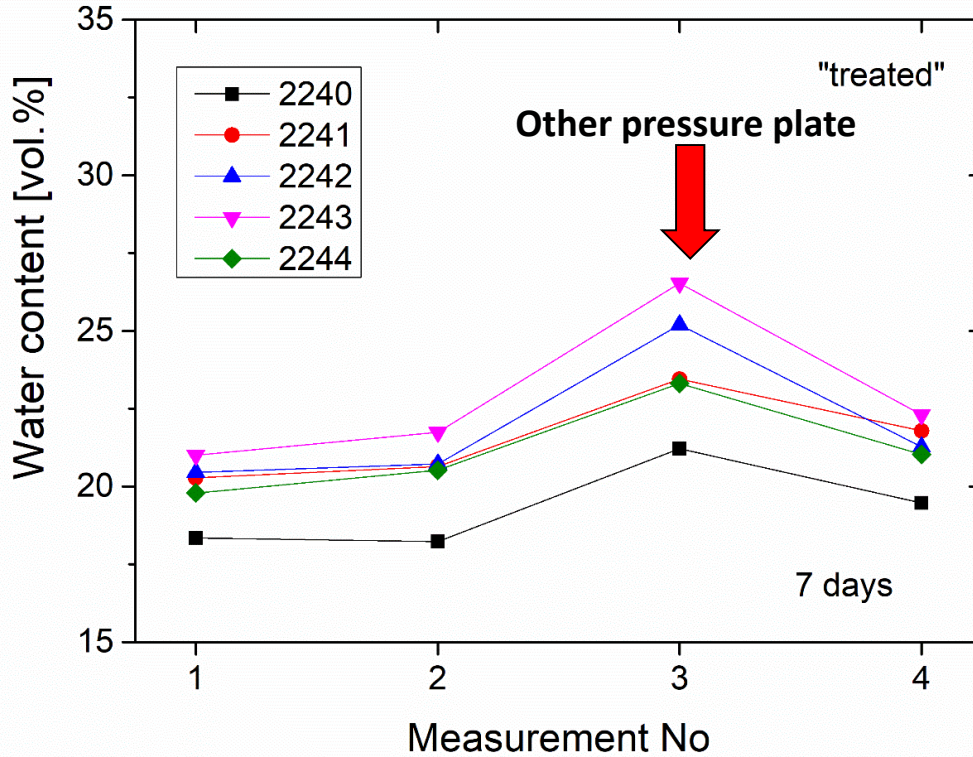


WRC of "Sinterglaszylinder"





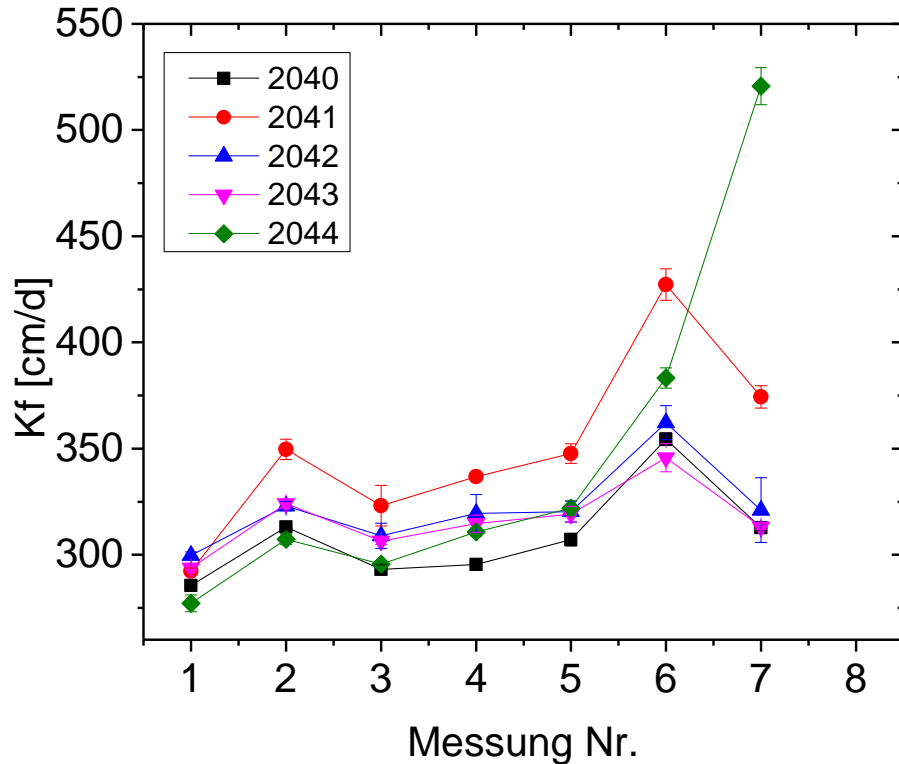




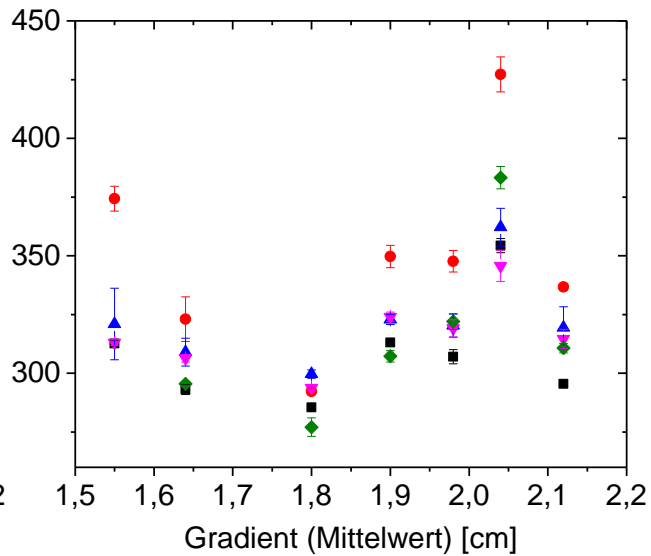
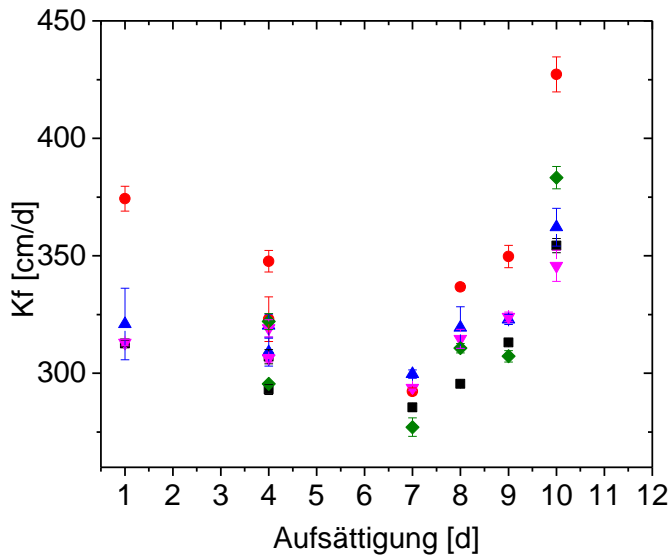
treated=washed
in H₂O₂ (1%)

63 hPa

Measured saturated hydraulic conductivity K_f (K_s) of „Sinterglaszylinder“



Permeameter
Fa. Eijkelkamp (NL)



Conclusions

- Glass cylinders were tested as reference material for WRC (and Ks)
- Pore size distribution of cylinders shows highest sensitivity at 63 hPa
- Problem: high standard deviation (SD)
- But: maybe just the measurement device is responsible for high SD

Conclusions

- Glass cylinders seem not to be useful as a reference for the measurement of the saturated hydraulic conductivity

(but is a reference really necessary?)



We keep on testing...

