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# DIE VERTIKALE VERTEILUNG DER KONZENTRATION VON ORGANISCHEM KOHLENSTOFF IM OBERBODEN

# THE VERTICAL DISTRIBUTION OF ORGANIC CARBON CONCENTRATION IN THE TOP SOIL LAYER

TIMO LÜCKSMANN, ROBERT PETICZKA & FRANZ HOLAWE

## SUMMARY

The loss of nutrients in soils due to wind erosion is an important topic. The vertical distribution of the concentration of nutrients in soils is of great relevance. In this paper, organic carbon is examined as a proxy. Soil sampling techniques had to be tested in order to find out, which technique is suitable to measure and analyze the changes in the vertical concentration of organic carbon. A soil sampler ("Pürckhauer") was used on the study area to generate mixed soil samples. The samples were analyzed with a carbon-water-analyzer and statistically tested. The results indicate that with increasing depth and volume of the sampled soil, the amount and concentration of organic carbon decreases by up to 13 % compared to the top-soil layer.

**Keywords:** Organic carbon, concentration, vertical distribution, wind erosion, top soil layer, test design, depth profile, soil sampling method

## ZUSAMMENFASSUNG

Der Verlust von Nährstoffen im Boden durch Winderosion ist ein wichtiges Thema. Die vertikale Verteilung der Konzentration dieser Nährstoffe im Boden ist dabei von großer Relevanz. Um die Fragestellung beantworten zu können, wurden Methoden der Bodenprobenahme getestet, die es ermöglichen, die Konzentration von organischem Kohlenstoff als exemplarisch ausgewählten Proxy in der Tiefe korrekt zu messen und darzustellen. Dazu wurden auf einer vorbereiteten Testfläche Mischproben mit einem Bohrstock („Pürckhauer") genommen. Die Proben wurden mittels eines Kohlenstoff-Wasser-Analysators im Labor ausgewertet und statistisch überprüft. Die Ergebnisse der analysierten Mischproben zeigen, dass der Anteil an organischem Kohlenstoff mit zunehmender Tiefe und zunehmendem Volumen abnimmt. Im Vergleich zu den obersten Bodenschichten konnten Unterschiede von bis zu 13 % organischen Kohlenstoffs nachgewiesen werden.

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**Anschriften der Autoren:**

**M.Sc. Timo Lücksmann**
Universität Wien
Institut für Geographie und Regionalforschung
Althanstraße 14 (UZA II)
A – 1090 Wien
E-Mail: t.luecksmann@gmail.com

**Ass.-Prof. Mag. Dr. Robert Peticzka**
Universität Wien
Institut für Geographie und Regionalforschung
Althanstraße 14 (UZA II)
A – 1090 Wien
E-Mail: robert.peticzka@univie.ac.at

**Ass.-Prof. Dr. Franz Holawe**
Universität Wien
Institut für Geographie und Regionalforschung
Althanstraße 14 (UZA II)
A – 1090 Wien
E-Mail: franz.holawe@univie.ac.at