PhD Opportunity at Chair of Soil Science Technical University of Munich (TUM), Germany

As part of the research project Interaction between phosphorus heterogeneity patterns in silicate and calcareous soils and root architecture, P nutrition, and growth of European beech and Norway spruce, which contributes to the Priority Programme 1685 Ecosystem Nutrition – Forest strategies for limited phosphorus resources (www.ecosystem-nutrition.uni-freiburg.de) funded by the German Research Foundation (DFG), the Chair of Soil Science at the Technical University of Munich offers a 3-yr-doctoral position.

Project description: We investigate heterogeneity patterns of different P fractions and P species in calcareous soils in the Bavarian Limestone Alps and the Swabian Alb at various spatial (sub-micron to profile) scales and relate them to heterogeneity patterns of other soil properties. Furthermore, we study interrelations/interactions between the P status of soils on silicate and calcareous bedrock and biotic systems (forest plants + associated microorganism communities) in laboratory and field experiments with tree seedlings grown on model soils. We use standard methods of soil and plant analysis, but focus on ground-breaking innovative technologies like synchrotron-based X-ray spectro(micro)scopy (XRF, XANES, μ-XRF, μ-XANES) and high-resolution Secondary Ion Mass Spectrometry (NanoSIMS).

Candidate profile: We are looking for a highly motivated candidate, who should hold an MSc degree (or equivalent) in geo-ecology, biology, forestry, environmental chemistry, geology, agriculture or related natural sciences and have sound knowledge of soil science. Applicants should be able to work self-organized and in a team, have excellent management and communication skills, and should be committed to pursuing interdisciplinary research. Good computer and language skills (English) are necessary. Candidates with experience in synchrotron-based X-ray spectroscopy or X-ray microscopy or high-resolution Secondary Ion Mass Spectrometry (NanoSIMS) are highly welcome. The candidate is expected to present her/his results in highly-ranked international journals and at conferences.

The Soil Science Group at TUM (<u>http://www.soil-science.com</u>) offers a vibrant academic environment with well-equipped facilities located nearby Munich in southern Germany. The framework of the Priority Programme 1685 provides the opportunity to interact and co-operate with excellent scientists in different fields of life and environmental sciences.

The project is funded by the German Research Foundation (DFG) for three years and provides a salary of 65 % of German TVL E13 (approx. EUR 1400 per month/net) scheme together with health and social security benefits. The **envisaged starting date is March 1, 2017.**

Interested candidates are asked to send a <u>single</u> pdf-file including letter of motivation, research experience, CV, and any publications by email to Prof. Dr. Jörg Prietzel (<u>prietzel@wzw.tum.de</u>). Application deadline is January 15, 2017.

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