University of Zurich[UZH]

URPP Global Change and Biodiversity

Postdoc Soil Biogeochemistry
Deep soil carbon in a warmer world

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We invite applications for a postdoctoral researcher in our group working on "Terrestrial carbon cycle (and global change)". We seek to understand the influence of anthropogenic environmental change, such as increasing temperature, and higher CO_2-concentrations on the terrestrial carbon cycle including turnover of soil organic matter. https://www.geo.uzh.ch/en/units/2b.html

The project „DEEP C: How will deep soil carbon respond to a +4°C warmer world? The molecular perspective“ aims to answer the fundamental question what the role of soils will be in terrestrial feedbacks to warming over the next century. The warming of planet Earth will be accelerated if soil organic carbon is lost to the atmosphere as greenhouse gas. Representations of this positive carbon-cycle-climate feedback are part of many climate projections, but there is little experimental evidence. The project takes advantage of existing multi- year deep soil warming field experiments. We use the rapidly evolving methodological development of isotopic labeling and molecular markers to resolve dynamics as root-microbial-mineral interactions. Ultimately, we want to integrate our results into the next generation of vertically-resolved SOC models as tools for understanding and predicting soil biogeochemical response to global change. https://www.gcb.uzh.ch/en.html

The postdoc is expected to contribute to the group activities in the fields of soil biogeochemistry, and modeling. You will i) conduct experiments to trace carbon and nutrient flows through the terrestrial ecosystem, using molecular markers and stable isotopes to address previously intractable problems, ii) adapt modeling frameworks to both extend the impact of your own experimental data, and to improve our capability to model carbon stabilization and loss in terrestrial systems, iii) publish the results in peer-reviewed journals, iv) supervise Master- or PhD-students, and help in laboratory or field courses, v) contribute to the development of innovative concepts and ideas for further research.

To be successful you ideally will have: i) demonstrated experience in the analysis and interpretation of experiments to trace stable isotopes in the environment, ii) experience in the use of isotope ratio mass spectrometry and chromatography instrumentation, iii) knowledge of modeling of terrestrial carbon and nutrient flows, including adapting existing models, iii) the ability to work effectively as part of a multi-disciplinary research team, plus the motivation and discipline to carry out autonomous research.

Requirements include a Ph.D. in soil biogeochemistry or a related discipline, e.g. environmental or soil sciences, geo-ecology, physical geography, and preferably some postdoctoral work experience. Good knowledge of English is essential. Applicants should have a well-established record in one or more of the areas outlined above, evidenced by papers in refereed international journals and participation in international meetings.

This is a two-year position, and renewable depending upon performance and availabilitiy of funding. Start from January 2019 or upon mutual agreement. Applications from women and under-represented groups are highly encouraged. Send a letter of application, CV, statement of research interests and addresses of three potential references to Prof. Dr. Michael W. I. Schmidt, University of Zurich, Winterthurerstr. 190, 8057 Zürich, Switzerland. Single pdf file to michael.schmidt@geo.uzh.ch. For further details contact M. Schmidt. Review of applications will continue until the position is filled.