

Post Doc position - Modelling sub-soil tillage effects on crops (Bonn, Germany)

The Crop Science Group within the Institute of Crop Science and Research Conservation at the University of Bonn offers a Post Doc position within the research project “Soil³ – Sustainable Sub-soil Management”.

The project “Soil³ – Sustainable Sub-soil Management” is part of the BMBF research program BONARES (Soil as sustainable resource) and aims at evaluating different management options to optimize the utilization of the entire soil volume for plant growth by e.g. improving sub-soil properties through the combined growth of deep-rooting crops and mechanical sub-soil improvement. In order to test the sustainability of management options and to extrapolate these findings to larger areas, model simulation tools will be developed to quantify management effects on sub-soil properties, root and shoot growth of crops as well as crop yields. Dynamic crop models at the field scale will provide a helpful mean for the quantitative description of water and nutrient dynamics within the plant-soil system. In the first project phase (2015- 2017) the sub-project will focus on the improvement of existing crop model solutions within the modeling framework SIMPLACE (www.simplace.net) to simulate the effects of different sub-soil management options at the field scale taking into account experimental data from different sites gathered by the project partners.

The major task of the incumbent is to develop model components within the modelling framework SIMPLACE for the effects of sub-soil management practices on soil properties, crop growth and yield at the field scale. Model development, calibration and validation take advantage of data from long-term field experiments and from additional experiments performed during the project period. Close cooperation with agronomists, engineers, soil scientists and with other model developers running high resolution 3D root growth models is anticipated.

We are looking for a highly motivated person to work in an interdisciplinary team. The successful candidate has a PhD degree in soil science, crop science, geo-ecology or related sciences with a background in crop production, plant nutrition and/or soil physics and expertise in using simulation models. Experiences in developing process-based, numerical models at the soil-plant interface and in object-oriented computer programming is an advantage.

The position is a full position and paid according to the German regulations for scientists at the Post Doc level (TVL-13). Applicants with more than three years of experience in scientific research may be eligible for additional upgrades. The position is available for an initial period of 3 years with the possibility of extension by another 6 years after successful evaluation. Starting date of the position is October 1st, 2015 depending on the final approval of the proposal.

Applications of handicapped persons will be favored when all other qualifications are equal. Female candidates are encouraged to submit their applications. Applications (CV including diploma certificates/transcripts, list of publications, statement of research interests and achievements, addresses of two references) should be sent until September 20th, 2015 to

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