



## PhD in agro-hydrological modelling for integrated climate change impact studies

The [Oeschger Centre for Climate Change Research \(OCCR\)](#) in connection with [Agroscope](#) is seeking an enthusiastic PhD candidate with a background in environmental sciences and a strong interest in interdisciplinary research to address pressing management challenges in the face of progressing climate change.

### Project background

With climate change, summer and autumn streamflow is expected to decrease, while agricultural droughts are expected to become more frequent and severe. Increasing irrigation water use is not always an option. Alternative options are crucial to limit productivity losses with minimum dependency on irrigation water inputs; moreover, they may imply co-benefits by buffering hydrological extremes at catchment-scale.

### Job description

The aim of this PhD project is to quantify potential benefits of measures to increase agricultural water use efficiency (e.g. deeper rooting crops and cultivars, mulching, soil organic amendments) both for alleviating drought-related yield losses as well as for mitigating hydrological extremes (low flows and peak flows). To address this aim, the PhD candidate will work with climate projection data as input to both a field-scale soil-water-atmosphere-plant model and a catchment-scale hydrological model, while elaborating possibilities for model integration. Based on findings from this project, particular measures may be identified to facilitate a transition towards sustainable adaptation in Switzerland.

### Requirements

- An excellent master degree (90/120 ECTS) in environmental sciences, hydrology, climate sciences or a related field
- Very good knowledge of one or more of the following fields: plant growth processes, hydrology or climatology
- Experience in environmental modelling
- Good programming skills (R, Python, Fortran or C)
- Good level of written and spoken English
- High level of self-motivation; strong communication and organisational skills are essential

### We offer

- Work spaces both at [Agroscope](#) (Federal Research Institute for Agriculture), Zurich and the [Institute of Geography](#) at the University of Bern
- National and international networking opportunities and the possibility to gain experiences and insights in both applied and academic research environments
- Mandatory enrolment in the [Graduate School of Climate Sciences](#) at the University of Bern
- Support from an interdisciplinary team of supervisors embedded in the OCCR: [PD Dr. Holzkämper](#) (with a close link to the team [Climate risks and adaptations at Agroscope](#)), [Prof. Dr. Schaeffli](#) and [Prof. Dr. Raible](#)
- Salary according to SNSF and University of Bern guidelines (47,000 to 50,000 CHF, 100%)
- Flexible working hours and room for creative thinking

**Starting date:** April 2022 or upon agreement

**Duration of employment:** 3.5 years

**Location:** Agroscope Zurich / University of Bern, Switzerland

**Application deadline:** 31 January 2022

For more information on this position, please contact PD Dr. Annelie Holzkämper (Phone: +41 58 46 87516).

We look forward to receiving your application (incl. motivation letter, CV, transcripts, grades, certificates, web link to your master thesis, names of at least two references) as a single pdf-file by January 31<sup>st</sup>, 2022 via the [online portal](#).