Two PhD positions in uncertainty quantification for inverse problems with applications in geosciences and cosmology

The Uncertainty Quantification and Optimal Design group at Idiap Research Institute is seeking two highly qualified,
motivated and creative PhD students to work on the project "Uncertainty quantification and efficient design of
experiments for data- and simulation-driven inverse problem solving" funded by the Swiss National Science Foundation.

The ideal candidates will have a master degree with a focus on mathematical/statistical topics, and a taste for
both theoretical investigations and numerical experiments.

One PhD student will work primarily on "Modelling and predicting distribution-valued fields with applications to
inversion under uncertainty". The corresponding subproject will involve applications in computational cosmology
(with Prof. Alexandre Refregier's cosmology research group at ETH Zürich) and also in stochastic optimization for
hydrogeology within an ongoing interdisciplinary collaboration.

The other PhD student will focus on "Stochastic approaches to estimate implicit sets under indirect measurements".
The corresponding subproject will involve applications in computational geosciences, and notably the development
of experimental design algorithms for planning volcano gravimetry measurements (collaboration with Prof. Niklas
Linde's research group at the University of Lausanne). Also, applications in filament estimation will be considered.

The two PhD students will be supervised by Prof. David Ginsbourger, head of the Uncertainty Quantification and
Optimal Design group at Idiap and titular professor at the University of Bern. While the students will be mainly
affiliated with Idiap Research Institute, they will be registered as PhD students in statistics at the University
of Bern, where they will also be affiliated with the Institute of Mathematical Statistics and Actuarial Science (IMSV)
and will have the possibility to take part in IMSV's life (e.g. teaching). Besides this, the project will also benefit
from the expertise in mathematical statistics of Prof. Wolfgang Polonik (UC Davis).

For both positions, funding is available for a maximal duration of four years.
Annual gross salary ranges from 47,000 Swiss Francs (first year) to 50,000 Swiss Francs (last year).
The starting date is negotiable, preferably September-October 2018.
All enquiries should be sent to ginsbourger@idiap.ch.
Applications need to be submitted via the dedicated Idiap online recruitment system;
See http://www.idiap.ch/en/join-us/job-opportunities