

PATRICK LAUX



CURRICULUM VITAE

Born: January 08, 1976, in Wadern
Unmarried, 1 child

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RESEARCH ACTIVITIES

- Climate variability within the Volta Basin (West Africa):
 - Investigation of long-term trends of temperature, precipitation and runoff
 - Analysis of climate indices and circulation patterns with respect to climate variability
- Impacts of climate change on the terrestrial water balance in West Africa (Volta Basin):
 - Statistical downscaling using objective circulation pattern analysis, canonical correlation analysis and linear regression analysis
- Development of an agro-hydrological decision support system for the Volta Basin:
 - Predicting the optimal planting time on regional and local scales
 - Derivation of rainfall occurrence probabilities
 - Occurrence probability of droughts and floods
 - Occurrence probability of intra-seasonal dry spells
- Statistical analysis of climatological time series for Germany:
 - Weekly periodicities in climatological variables
 - Analysis of the weather conditions for artificial snowing
 - Weather pattern analysis

Project membership:

GLOWA-Volta: Analysis of the physical and socio-economic determinants of the hydrological cycle in the Volta Basin in the face of global change, financed by the Federal Ministry for Education and Research, with additional funding from the Ministry of Science and Research of North Rhine – Westphalia (<http://www.glowa.org/>; <http://www.glowa-volta.de/>)

EDUCATION

- 1996 – 2003 Study of Applied Environmental Sciences, Karl Marx University of Treves:
Major subjects: Hydrology, Meteorology, Remote Sensing, Soil Sciences
Minor subject: International, European and German Environmental Law
- 2003 Diploma in Applied Environmental Sciences
Diploma Thesis: “Quantification of chemical parameters through reflectance spectra measurement of sediment samples of the Olewiger Bach. Comparison of methods: Partial Least Squares Regression (PLSR) versus Artificial Neural Networks (ANN).”
- 1999 Prediploma in Applied Environmental Sciences
- 1995 A-levels, Johannes Kepler-Gymnasium, Lebach

WORKING EXPERIENCE

Current:

- Ph. D. thesis in Climatology at the Institute for Meteorology and Climate Research, (IMK-IFU), Forschungszentrum Karlsruhe GmbH, Kreuzteckbahnstraße 19, 82467 Garmisch-Partenkirchen
Title of the thesis: “Statistical modelling of precipitation for agricultural planning in West Africa” under the supervision of Prof. Dr. rer. nat. Dr.-Ing. habil. András Bárdossy and Prof. Dr. Jucundus Jacobeit (anticipated termination: 07/2008)

Internships:

- Umweltforschungszentrum (UFZ) Leipzig-Halle GmbH, Departments Lake Research and River Ecology, 2000
Quantification of seston losses from the surplus water of the river Elbe into the sediment of a groyne
- Staatliche Lehr- und Versuchsanstalt, Treves, 2001
Impact of fertilization on the water quality in Kordel (Rhineland-Palatinate)
Visualization and analysis of precision farming yield data at different sites in the Eifel Region (Rhineland-Palatinate)

Student collaborator:

- Department of Hydrology, University of Treves, 2000-2001
Sampling, preparation, digitalization and statistical analysis of channel sediment of the Olewiger Bach
- Department of Meteorology, University of Treves, 2001
Statistical analysis of Großwetterlagen (Hess/Brezowsky) with respect to local meteorological measures and air pollutants conditioned to the meteorological seasons

Contract for services:

- Landesamt für Umweltschutz, Saarbrücken, 2001-2003
Software evaluation (AquaInfo, UnScanIt)
Completion of a hydro-geological database (Digitalization)
- Office for environmental planning, Mertesdorf, 2002-2003
Diverse engineering services, e.g. subsurface investigation for construction trade, construction of water gauges in order to observe the water quality
Sampling of soil water and soil air

Other:

- Social service (Zivildienst), Hochwaldkliniken, Weiskirchen

EDV

Operating Systems: Windows, Linux, Unix

Programming languages: Matlab, Batch Scripting , Fortran (Basic skills), Ansi C (Basic skills)

GIS: ArcView, ArcGIS, IDL Envi, Surfer, Erdas Imagine

Numerical Modelling: MM5, WaSiM

TEACHING EXPERIENCE

Training course in Hydro-Meteorological Decision Support for the Volta Basin at the United Nations University Institute for Natural Resources (UNU-INRA) in Accra (Ghana) from 14. – 17.01.2008 and at the Direction Générale des Ressources en Eau (DGRE) in Ouagadougou (Burkina Faso) from 22. – 25.01.2008.

LANGUAGES

German (native)

English (fluently)

French, Spanish (elementary)

Garmisch-Partenkirchen, 28 January 2008