

CURRICULUM VITAE - Dr.-Ing. Patrick Laux

CONTACT INFORMATION	Institute for Meteorology and Climate Research (IMK-IFU) Forschungszentrum Karlsruhe GmbH Kreuzeckbahnstr. 19 82467 Garmisch-Partenkirchen Germany	<i>Voice:</i> +49(0)8821-183 259 <i>Fax:</i> +49(0)8821-183 243 <i>E-mail:</i> patrick.laux@imk.fzk.de
CITIZENSHIP	<i>German</i>	
RESEARCH INTERESTS	<i>Climate Variability, Climate Change</i> Precipitation variability Impacts of climate change on terrestrial water balance Statistical (empirical) downscaling and stochastic precipitation modeling Agro-hydrological decision support for water scarce regions (i.e. West Africa) Crop modeling	
PROFESSIONAL EXPERIENCE	Institute for Meteorology and Climate Research (IMK-IFU) , Garmisch-Partenkirchen, Germany <i>Post Doc Position</i> since Jan. 2009 <i>PhD thesis</i> 2004 - 2009 <ul style="list-style-type: none">• Title: Statistical modeling of precipitation for agricultural planning in West Africa• Supervisors: Prof. Dr. rer. nat. Dr.-Ing. habil. András Bárdossy and Prof. Dr. rer. nat. Jucundus Jacobeit Landesamt für Umweltschutz , Saarbrücken, Germany 2001 - 2003 <i>Contract for services</i> <ul style="list-style-type: none">• Development of a hydro-geological database• Development of a Digital Elevation Model (DEM) for the Saarland, Germany Büro für Umweltplanung , Mertesdorf, Germany 2002 - 2003 <i>Contract for services</i> <ul style="list-style-type: none">• Subsurface investigations for construction trade• Sampling and monitoring of soil water and soil air• Construction of water gauges	
EDUCATION	Karl Marx University , Treves, Germany <i>Diploma, Applied Environmental Sciences</i> graduation 2003 <ul style="list-style-type: none">• Title of Diploma Thesis: Quantification of chemical parameters of sediment samples of the Olewiger Bach using reflectance spectra measurement. Comparison of methods: Partial Least Squares Regression vs. Artificial Neural Networks Supervisor: Prof. Dr. Wolfhard Symader• Major subjects: Hydrology, Meteorology, Remote Sensing, Soil Sciences• Minor subject: International, European and German Environmental Law <i>Prediploma, Applied Environmental Sciences</i> 1999	

Student Internships

Umweltforschungszentrum (UFZ) Leipzig-Halle GmbH, Departments Lake Research and River Ecology, Magdeburg, Germany **2000**

- Quantification of seston losses from the surplus water of the river Elbe into the sediment of a groyne

Staatliche Lehr- und Versuchsanstalt (SLVA), Treves, Germany **2000**

- Impact of fertilization on the water quality in Kordel, Rhineland Palatinate, Germany
- Analysis and visualization of precision farming yield data at different sites in the Eifel regions, Rhineland Palatinate, Germany

Johannes Kepler-Gymnasium, Lebach, Germany

A-Levels **1995**

ACADEMIC EXPERIENCE

Karl Marx University, Treves, Germany

Research Collaboration, Department of Hydrology **2000 - 2001**

- Sampling, preparation, digitalization and statistical analysis of river channel sediment samples

Research Collaboration, Department of Meteorology **2001**

- Statistical analysis of *Growetterlagen* (Hess/Brezowsky) with respect to local meteorological situation and air pollutants conditioned to the meteorological season

Teaching Experience **2008**

- 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 14.01.2008 - 17.01.2008 and at the Direction Générale des Ressources en Eau (DGRE) in Ouagadougou (Burkina Faso) from 22.01.2008 - 25.01.2008.
- Training course in Statistics at International Summer School, University of Würzburg (Germany) from 21.07.2008 - 26.07.2008, Topic: *Land Cover and Climate Change in West Africa*, Elite Network of Bavaria Graduate Program: Global Change Ecology (M.Sc.), organized by University of Augsburg, Würzburg and Bayreuth, Germany

PUBLICATIONS

Peer reviewed publications

Laux, P., Jäckel, G., Tingem, M., Kunstmann, H. (2009): Onset of the rainy season and crop yield in Sub Saharan Africa - Tools and perspectives for Cameroon. IAHS Publication, Hyderabad, India, September 6-12 (accepted for pub.).

Laux, P., Wagner, S., Wagner, A., Jacobeit, J., Bárdossy, B., Kunstmann, H. (2009): Modelling daily precipitation features in the Volta Basin in West Africa; *International Journal of Climatology*, 29(7): 937-954.

Laux, P., Kunstmann, H., Bárdossy A. (2008): Predicting the Regional Onset of the Rainy Season in West Africa; *International Journal of Climatology* 28(3): 329-342.

Laux, P., Kunstmann, H. (2008): Detection of regional weekly weather cycles across Europe; *Environmental Research Letters* 3, 044005.

Laux, P., Kunstmann, H., Lutz, K., Jacobeit, J., Beck, C., Philipp, A., Bárdossy, A. (2008): Comparison of different objective atmospheric circulation pattern analyses in the Jordan region. IAHS Publication, Hyderabad, India, September 6-12 (accepted for pub.).

Laux, P., Heckl, A., Jacobeit, J., Bárdossy, A., Kunstmann, H. (2008): Linking droughty and wet weather in the Jordan region with atmospheric circulation patterns; AEC conference contribution, Tarragona, Spain, October 8-11.

van de Giesen, N., Andah, W., Andreini, M., Barry, B., Jung, G., Kunstmann, H., Laube, W., Laux, P., Liebe, J. (2008): Adapting to Climate Change in West Africa. Expo Zaragoza 2008.

Neumann, R., Jung, G., Laux, P., Kunstmann, H. (2007): Climate trends of temperature, precipitation and river discharge in the Volta Basin of West Africa; *International Journal of River Basin Management*; 5(1): 17-30.

Laux, P., Kunstmann, H., Bárdossy A. (2007): Linking the West African monsoon's onset with atmospheric circulation patterns. IAHS Publication 313: 40-50.

Conference contributions

Laux, P. (2009): Global climate change and its regional agricultural and hydrological impacts for West Africa: Challenges and opportunities for a German-Nigerian collaboration; Lagos Maiden Summit on Global Climate Change 2009, Lagos, Nigeria, March 23-27 (invited oral presentation).

Jäckel, G., Laux, P., Tingem, M., Kunstmann, K. (2009): Onset of the rainy season and crop yield in Sub Saharan Africa - Tools and perspectives for Cameroon; EGU 2009, Vienna, Austria, April 20-24 (poster presentation).

Wagner, S., Laux, P., Jung, G., Kunstmann, K. (2008): Instruments for Hydrometeorological Decision Support in Sustainable Water Management for the Volta Basin; Status Conference GLOWA Volta 2008, August 24-26 (poster presentation).

Laux, P., Kunstmann, Bárdossy, A. (2008): Predicting the regional onset of the rainy season in West Africa; Status Conference GLOWA Volta 2008, August 24-26 (invited oral presentation).

Laux, P., Kunstmann, Bárdossy, A. (2008): Predicting the regional onset of the rainy season in West Africa; Status Conference GLOWA Volta 2008, August 24-26 (poster presentation).

Laux, P., Kunstmann, H., Bárdossy, A. (2008): Assessing the Impact of Climate Change on the Frequency of Droughty and Wet Weather Patterns in the Volta Basin; Status Conference GLOWA Volta 2008, August 24-26 (poster presentation).

Laux, P., Kunstmann, H., Wagner S., Bárdossy, A. (2008): Modelling Daily Precipitation Features for Agricultural Decision Support in the Volta Basin; Status Conference GLOWA Volta 2008, August 24-26 (poster presentation).

Laux, P., Kunstmann, H., Lutz, K., Jacobeit, J., Beck, C., Philipp, A., Bárdossy, A. (2008): Comparison of different objective atmospheric circulation pattern analyses in the Jordan region; HydroPredict 2008, September 15-18 (poster presentation).

Laux, P., Heckl, A., Jacobeit, J., Bárdossy, A., Kunstmann, H. (2008): Linking droughty and wet weather in the Jordan region with atmospheric circulation patterns; AEC conference, August, Tarragona, Spain (poster presentation).

Heckl, A., Laux, P., (2008): High resolution climate scenarios in the Near East. GLOWA Jordan Status Conference, Aqaba, Jordan, June 25-27 (poster presentation).

Laux, P., Kunstmann, H., Bárdossy, A. (2007): Stochastic rainfall simulation for the rainy season of the Volta Basin using ECHAM5 scenarios. 2nd international AMMA Conference 2007, Karlsruhe, Germany, November 26-30 (poster presentation).

Laux, P., Kunstmann, H., Bárdossy, A. (2007): Linking the West African monsoon's onset with atmospheric circulation patterns. IUGG 2007, Perugia, Italy, July 2-13 (oral presentation).

Laux, P., Yang, W., Kunstmann, H., Bárdossy, A. (2007): Stochastic rainfall simulation for the rainy season of the Volta basin in West Africa. EGU 2007, Vienna, Austria, April 15-20 (poster presentation).

Wagner, S., Kunstmann H., Laux, P., Jung, G. (2006): Hydrometeorological Decision Support for Sustainable Water Management; Beitrag zur Veranstaltungsreihe Betrifft Wasser: EZ trifft Wissenschaft, Eschborn, October 31 (poster presentation).

Laux, P., Kunstmann, H., Bárdossy, A. (2006): Analysis of the Monsoon onset in the Volta Basin of West Africa. EGU 2006, Vienna, Austria, April 2-7 (oral presentation).

Laux, P., Kunstmann, H., Bárdossy, H. (2005): Analysis of the onset of the rainy season in Ghana. Status Conference, Cologne, Germany, May 17-19 (poster presentation).

REFEREE

International Journals

Journal of Hydrology

Environmental Research Letters

Ecological Applications

International Journal of Global Energy Issues

Monthly Weather Review

Agricultural and Forest Meteorology

International Association of Hydrological Sciences (IAHS)

Journal of Earth System Sciences

MEMBERSHIPS

Associations

American Geophysical Union (AGU)

European Geophysical Union (EGU)

International Association of Hydrological Sciences (IAHS)

SKILLS

Personal Computer

Programming: MatLab, Fortran, R, UNIX shell scripting

Operating Systems: Microsoft Windows XP/2000, Linux

Applications: L^AT_EX, Microsoft Office, and other common productivity packages for Windows and Linux platforms

Languages6

German (native)

English (fluently)

Spanish and French (elementary)