KARL -ERICH LINDENSCHMIDT

PERSONAL

Address:	Kaiser-Friedrich-Str. 121 U
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Nationality:	Canadian
Visa status:	Permanent residency in Germany
Birth date and place:	October 31, 1964 in Beausejour, Manitoba, Canada
Family Status:	Married with 3 children
Languages:	English (native speaker); German (fluent); French & Spanish (some)

EDUCATION

Oct/2006   Habilitation in Water Resources Management
Technical University of Cottbus supervised by Prof. Uwe Grünewald
Thesis: *River water quality modelling for river basin and water resources management with a focus on the Saale River*

Oct/1998   Doctorate in Environmental Engineering
Technical University of Berlin supervised by Prof. W. Hegemann
Thesis: *On the effect of artificial aeration on the phytoplankton populations of Lake Tegel, Berlin*

1989   Master of Applied Science (Mechanical Engineering),
University of Toronto, Canada

1986   Bachelor of Science (Mechanical Engineering)
University of Manitoba, Canada

TEACHING EXPERIENCE

Course type	Name	Location	Date
Lectures	Surface water and groundwater management	Technical University of Cottbus	summer semesters 2001 - 2006
Lectures	Integrated River Basin Management	Universidad de Concepción, Chile	summer semesters 2003 & 2004
Seminars	Watershed Modeling System	Technical University of Cottbus	summer semesters 2001 - 2006
Practicum	Field limnology	Technical University of Berlin	summer semesters 1997 & 1998
Tutorial	Environmental computer modelling	Technical University of Berlin	summer semesters 1998 & 1999

ENVIRONMENTAL ENGINEERING RESEARCH

Oct/06 – present **University Lectureship** (German = Privatdozent)
Brandenburg Technical University of Cottbus
- responsible for lecturing two full-credit courses per year in the field of *Water Resource Management*
- supervising Master and PhD students with their theses work
- partaking in the design and implementation of new course modules for the international graduate program

Aug/04 – present **Extreme Flood Management and Risk Assessment**
Team leader for junior research group
GFZ – GeoForschungsZentrum, Potsdam, Germany
- assessing and mapping risk to flood damages in dyked and non-dyked reaches of the Elbe and Mulde rivers
- hydrological and hydrodynamic modelling of extreme flood events in large river basins
- coupling models and data in a modelling system using the TDT (Typed Data Transfer) coupling library
- implementing statistical methods to quantify structural uncertainty in modelling systems.

Jun/99 – Jul/04 **River Basin Management**
UFZ – Environmental Research Centre, Magdeburg, Germany
- successful applicant as partner of EU-project "FloodSite"; responsible for developing a real-time flood forecasting model for the lower Mulde river (Elbe catchment, Germany)
- developing a quasi-2D hydrodynamic modelling approach to better capture the flow regimes of flood events.
- river water quality modelling of the Saale river (Elbe catchment, Germany); investigating the effects of floodplains and weirs on the water quality of a heavily modified river
- hydrological and erosion modelling of river catchment areas by coupling the computer models WaSiM and AGNPS
- linking computer models in HLA (High Level Architecture) and OMS (Object Modelling System).
- helped develop a river catchment management system which incorporates an interface between environmental processes with socio-economic and political decision making potential

Nov/98 – May/99 **Biotechnology**
Section Head of Biotechology Department
Energy of Nature GmbH, Leipzig, Germany
- coordinated design of biogas plants
- modelled flow behaviour in bioreactors to optimize configuration of mixing devices
- modelled water and chemical regime of landfills
- modelled chemical and biological processes in bioreactors

Aug/97 – Oct/98	**Environmental Modelling Consulting**

Econumerics, Berlin, Germany (consultant)
Contracts successfully completed:
-   investigated the hydrological effects of expanding the Havel river system - contract from *Assoc. for Environment & Nature*
-   developed a data bank of biological and chemical parameters of 200 German lakes - contract from *German Environment Agency*
-   co-designed TrintSim (<u>T</u>rench-<u>I</u>nfiltration-<u>T</u>rough-<u>S</u>imulation); contract from *Engineering Firm Prof. Sieker mbH*, Berlin.
-   translated technical reports and journal articles – several contracts from *Berlin Water Works*

Jan/95 – Jul/97	**Environmental Management**

Institute for Technical Environmental Protection, TU Berlin
Acquisition and coordination of the following research projects:
-   Loading of solute and suspended solids from rural catchment areas flowing into Lake Victoria in Uganda
-   Control and optimization of mobile and stationary aeration systems for Berlin surface waters

Jan/93 – Dec/95	**Computational Limnology**

Institute for Technical Environmental Protection, TU Berlin
-   modelled the heat budget and mixing behaviour of Tegeler See, Berlin with implementation of hypolimnetic aerators using the computer model DYRESM - Dynamic Reservoir Model
-   developed food web models of lakes

MECHANICAL ENGINEERING RESEARCH

Jan/91 – Dec/92	**Materials Science**

Engineering Mechanics & Design Laboratory, University of Toronto
-   measurement of residual stresses in shot-peened metal surfaces
-   ultrasonic characterization of new materials, such as metal and ceramic matrix composites, and metal plasma coatings
-   finite element modelling & programming signal processing tools
-   laboratory manager and computer system administrator

Jan/90 – Dec/90	**Biomedical Robotics**

Andronic Devices Ltd., Vancouver, Canada
-   designed robotical limb positioners and accessories (traction devices, sterility drapes and weight compensators) for surgery
-   consulted with surgeons and other medical professionals to improve product design and investigate new markets

Sep/86 – Sep/87	**Ultrasonic Non-destructive Testing**
Oct/88 – Dec/89	*Ontario Hydro Research, Toronto, Canada*

-   evaluated various non-destructive ultrasonic techniques for measuring crack depths in thin tubular sections

- optimized a technique and designed a system to measure crack and flaw depths in CANDU reactor pressure tubes

Oct/87 - July/88 **Automobile Stress Analysis**
Vehicle Design Institute, Braunschweig, Germany(10 month contract)
- modelled a 1988 Ford Sierra automobile body using finite elements for stress analysis
- carried out bending and torsional displacement experiments on a car body to correlate results with theoretical computations