

# CURRICULUM VITAE

**PD Dr. rer. nat. habil. Joachim Gröger**

*Associate Professor for Zoologie / Fishery Biology*

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**Affiliation I (Science/Research):**

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**Affiliation II (Academia):**

University of Rostock  
(1) Faculty of Mathematical and Natural Sciences  
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(2) Interdisciplinary Faculty  
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D - 18057 Rostock  
GERMANY  
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## Personal information

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Nationality:	German
Birthdate:	December 17, 1956
Place of Birth:	Kiel, Germany
Family status:	married to Regina Gröger (September 6, 1994)

## Education

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1964-1977	<b>School</b>
WS 1979 - WS 1986	<b>Student of Biology</b> at Kiel University <b>Pre-Diploma</b> examination (~ <b>BSc</b> ) in <b>Zoology, Botany, Chemistry, Physics</b> (1982) <b>Diploma</b> examination (~ <b>MSc</b> ) in <b>Fishery Biology, Informatics and Zoology</b> (1985) <u>Thesis:</u> Modelling theory concerning growth coupled variables in experimental aquaculture (1986) <u>Supervisors:</u> Prof. Walter Nellen & Prof. Bernd Zeitschel, Institute of Marine Sciences (IfM), Kiel, Germany <u>Overall grade:</u> very good
Sep - Dec 1987	1-semester <b>studies abroad</b> - Fall semester at <b>Pennstate University, Department of Statistics</b> , University Park, Pennsylvania, USA
WS 1988 - WS 1992	<b>PhD program</b> at the Faculty of Mathematical and Natural Sciences +

	<p><b>Student of Statistics and Econometrics</b> at the Institute of Statistics and Econometrics (Kiel University - Prof. Lütkepohl, Prof. Hansen)</p>
WS 1992	<p><b>Doctoral examination (~ PhD) in Fishery Biology, Statistics/Econometrics and Informatics</b></p> <p><u>Thesis:</u> "A probability based approach to optimize the International Young Fish Survey (IYFS) in the North Sea"</p> <p><u>Supervisors:</u> Prof. Dietrich Schnack &amp; Prof. Tony Chapman, Institute of Marine Sciences (IfM), Kiel, Germany</p> <p><u>Overall grade:</u> very good (<i>magna cum laude</i>)</p>
1996 - 2001	<p><b>Habilitation</b> (= professorial qualification ~ <b>DSc</b>) at Rostock university (February 2001)</p> <p><u>Thesis:</u> "Biometric analyses towards an optimization of special coefficients in fish population dynamics" (submitted June 2000)</p> <p><u>Test lecture:</u> "The Principles of Precaution and Sustainability - Implementation Strategies for Harvesting Marine Fish Stocks"</p> <p><u>Supervisors:</u> Prof. Ragnar Kinzelbach, Institute for Biodiversity Research, Rostock University, Germany, Prof. Gerd Hansen, Institute for Statistics and Econometrics, Kiel University, Germany, PD Dr. Thomas Brey, Alfred Wegner Institute of Marine Sciences (AWI), Bremen University, Germany</p> <p><u>Overall grade:</u> "highly recommended" (equivalent to being very good)</p>

## Advanced vocational training

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### Biometrics with SAS

**Factor, principal component, correspondence and discriminant analysis** (4 days FAL, Braunschweig, Germany)

Quantitative **risk analysis** (3 days, FAL, Braunschweig, Germany)

The use of the **Geographical Informations Systems** (GIS) ArcView und ArcInfo (4 days, Forstliche Fachhochschule, Eberswalde, Germany)

**Time series analysis** (4 days, FAL, Braunschweig, Germany)

**Cluster analysis** (4 days, FAL, Braunschweig, Germany)

Multivariate variance analysis (**MANOVA**) (3 days, FAL, Braunschweig, Germany)

**Statistical quality control** (SQC) (3 days, FAL, Braunschweig, Germany)

**Autoregression and autocorrelation** (3 days, FAL, Braunschweig, Germany)

**Geostatistics** (3 days, FAL, Braunschweig, Germany)

**Non-parametric methods** (3 days, FAL, Braunschweig)

**Sequence analysis/Bioinformatics** (3 days, Düsseldorf University)

**Contingency tables** (3 days, FAL, Braunschweig)

## Fish stock assessment

FAO/DANIDA/ICES High Level Training Course in Fish Stock and Quality Assessment (14 days, Hillerød, Dänemark)

ASMFC Advanced Stock Assessment Training Workshop (December 5-7, 2005, NMFS, Woodshole, USA)

Workshop on Advanced Fish Stock Assessment Techniques, ICES secretariat in Copenhagen, Denmark, 23 - 28 February 2006

## Military Service

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October 1977  
- December 1978

15 months, **Medical Corps** Centre of the German Armed Forces, Bad Segeberg, Germany

## Work experience

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Jan - Aug 1987

**Systems analyst** at the Federal Institute for Sea Fisheries, Hamburg (Development and implementation of a data management system for krill and fish data on a SIEMENS mainframe by means of FORTRAN and its transfer to PCs)

1988

**Lecturer of informatics** in further education of adults at Kiel College of Economics (Wirtschaftsakademie Kiel)

1989 - 1992

Scientific collaborator at the Institute of Marine Sciences, Kiel

1993

**Software engineer and systems analyst** at "has program service" (development of an object-oriented Management Information Systems for insurance companies, PASCAL)

1994 - 2003

**Scientist** at Federal Research Centre for Fisheries, Institute for Baltic Sea Fisheries in Rostock (biostatistical and econometrical modelling of fishery related problems), Germany

2001 - 2006

**Associate Professor** for Zoology (Fishery Biology) at Rostock university, Germany

2004 + 2005

2-years appointment as an **Associate Professor for Fisheries Oceanography** (tenure track) at the School for Marine Science and Technology (SMAST), University of Massachusetts (UMassD), New Bedford, USA (unpaid leave)

January 2005

1-year **re-appointment** as an **Associate Professor for Fisheries Oceanography** at the School of Marine Science Technology (SMAST), University of Massachusetts (UMassD), New Bedford, USA **for academic year 2006** (not assumed)

2006 - present

**Head of "Pelagic fish stocks working group"** and "**commissioneer for biometrics**" at the Institute for Sea Fisheries (ISH) of the newly founded "von-Thünen Federal Research Institute for Rural Studies, Forestry and Fisheries" in Hamburg, Germany

2006 - 2008

**Associate Professor for Fishery Biology** at Kiel university, Germany (Umhabilitation)

2009 - present

**Associate Professor** for Zoology (Fishery Biology) at Rostock university,

## Scholarships/Awards

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1982 - 1986	<b>Scholarship</b> for "highly gifted students" provided by "Friedrich Naumann Foundation" (during Hauptstudium)
June 2006	<b>Honorific appointment:</b> Adjunct Research Professor, Physics Department, College of Engineering, University of Massachusetts at Dartmouth
August 2006	<b>Honorific appointment:</b> Adjunct Associate Professor, Department of Conservation Biology, University of Massachusetts at Amherst

## University teaching experience

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1992 - 2003 (Classes in Germany)	<b>Populations dynamics</b> of fish stocks (including assessment methods and fishery management) (Rostock university, Germany, 2 SWS) <b>Fish stock assessment</b> models (IfM Kiel, Germany, 1 SWS) <b>Informatics</b> (course in adult education, WAK Kiel, Germany) Introduction to <b>Biostatistics</b> with exercises (IfM Kiel, within Major Practicals, Germany, 2 SWS) Basics in <b>Biometrics</b> (Rostock university, Germany, 2 SWS) <b>Ecosystem modeling</b> (Rostock university, Germany, 1 SWS) <b>Biometrical modeling</b> in space and time (Rostock university, Germany, 2 SWS) <b>Biometrical design of experiments and surveys</b> (Rostock university, Germany, 1 SWS)
2004 - 2005 (Classes in USA)	<b>Certification as IGS-Teacher</b> (IGS = Intercampus Graduate School for Marine Science and Technology, Massachusetts, USA) (Spring 2004) <b>Fundamentals in Biometrics</b> (MAR 580, 3 credits, SMAST, UMassD) Quantitative Concepts in <b>Fish Population Dynamics</b> (MAR 625, 3 credits, SMAST, UMassD)
2006 + 2007 (Classes in Germany)	<b>Fundamentals in Biometrics</b> (IfM-Geomar, # 500011, 2 SWS) <b>Populationsdynamik, Assessment und Management</b> genutzter Fischbestände (IfM-Geomar, # 500051, 2 SWS)
2008 - present (Classes in Germany)	<b>Populationsdynamik, Assessment und Management</b> genutzter Fischbestände (SS 2008, 3 SWS) <b>Grundlagen biometrischer und biostatistischer Analysen</b> (WS 2008/09, 3 SWS)

## Organisation of Seminars and Colloquia

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1996 - 2004	Organisation of the <b>scientific IOR colloquia</b> , Rostock, Germany
May 2003	Co-organizer of the <b>German federal symposium</b> "Bedrohung der biologischen Vielfalt durch invasive gebietsfremde Arten: Erfassung, Monitoring, Risikoanalyse" (BBA, Braunschweig, Germany)
Academic year 2004/5	Organisation of the <b>SMAST seminar</b> , School for Marine Science and Technology (SMAST), UMassD, New Bedford, USA
Calendar year 2006	Organizer of <b>ISH colloquia</b> , Institute for Sea Fisheries, Federal Centre for Fisheries Research, Hamburg, Germany

## Interests and Activities

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**biometrics** and statistical/numerical **modelling** including pattern recognition, time series analysis, geostatistics, multivariate statistics

analysis of **interactions** between biotic and abiotic factors/variables on **ecosystem** level including **climate** issues

**population dynamics/ecology** and its modelling

**management** questions including spatial and temporal issues, conservation/rebuilding/restoration/protection/risk issues

**numerical optimization** issues (control theory, operations research, decision support system development)

development of **new technology** (AUV, array systems, etc)

survey and experimental **design**

**bio-economic** issues including applying **econometric** approaches

## Summary of professional memberships in (inter-)national committees/commissions (previous and present)

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**German Scientific Commission for Marine Research** (Deutsche Wissenschaftliche Kommission für Meeresforschung, DWK)

**Ressource Management Committee** of the International Council for the Exploration of the Seas (RMC ICES)

**Advisory Committee for Fisheries Management** of the International Council for the Exploration of the Seas (ACFM, ICES)

**ASCOBANS** (UN Agreement on the Conservation of Small Cetaceans of the Baltic and North Seas)

**International Biometric Society**

**American Fisheries Society** (NE Chapter)

## Summary of professional memberships in (inter-)national working groups (previous and present)

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Member of the Ad Hoc Working Group of Experts on the Standardization of Fishing Effort in Cod Fishery in the Baltic Sea (IBSFC)

Member of the ICES Study Group on Baltic Cod Age Reading

Member of the ICES Baltic Herring Age Reading WG

Member of the ICES Comprehensive Fishery Evaluation WG

Member of the ICES Baltic International Fish Survey WG

Member of the ICES Working Group on Statistical Aspects of Environmental Monitoring

Member of the US Groundfish Plan Development Team (PDT)

Member of the ICES Herring Assessment Working Group in the North Sea (HAWG)

Member of the ICES Study Group of Risk Assessment and Management (SGRAMA)

Member of the ICES Study Group on Mixed Fisheries Management (SGMIXMAN)

Member of the ICES Study Group on Recruitment variability in North Sea planktivorous fish (SGRECVAP)

Member of the ICES Study Group on Management Strategies (SGMAS)

## Poster

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Rumohr, H., Hukriede, W., **Gröger, J.** (1998). Long-term changes in Baltic benthos data in relation to climate change.

**Gröger, J.**; Debus, L. (1999/2000). Morphometric comparison of *Acipenser sturio* populations by means of a mixed estimation procedure.

Gröhsler, T.; **Gröger, J.**; Hahlbeck, E.; Winkler, H.M. (2001). Fischbestandsmonitoring in den deutschen Ostseegewässern.

**Gröger, J.**; Rohlf, N. (2007). Mögliche Ursachen des geringen Heringsnachwuchses in der Nordsee.

## Activities as referee for following scientific journals

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Archive of Fisheries and Marine Research (**AFMR**)  
ICES Journal of Fisheries and Marine Science (**IJFMS**)  
Journal of Applied Ichthyology (**JAI**)  
Journal of Fish Biology (**JFB**)  
Journal of Fisheries Oceanography (**JFO**)

## Collaboration in national and international projects

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### Europe

**Coordinator** of the national project "Development of a modular approach for simulating fish distributions" (Institute of Marine Sciences, Kiel)

**Coordinator** of EU study "Investigations on the fishing effort of towed demersal fishing gears in the Baltic" (EU-No. 95/077) (IOR, Rostock)

Collaborating **partner** in EU study "Separation of spring and autumn spawning herring in the Skagerrak and Kattegat" (EU-No. 96/073) (IOR, Rostock)

Collaborating **partner** in EU study "A new sampling regime for resource assessment of herring in the Skagerrak, Kattegat and southwest Baltic" (EU-Nr. 98/026)" (IOR, Rostock)

**Local coordinator** of EU study "Environmental and fisheries influences on fish stock recruitment (STORE, EU-No. FAIR-CT-98-3559)" (IOR, Rostock)

### United States

**CoPi**, 2004: "Analysis and Development of Acoustic Systems to Improve CPUE Statistics and Track Movements and Migration of Fish" (NOAA - NA04NMF4720024, budget for 1 year: ~ ca. 500 000 US\$) (SMAST, USA)

**CoPi**, 2004: "New England Multispecies Survey" (NOAA - NA04NMF4720339; funding period: Aug 1, 2004 - Jul 31, 2005; total budget for 1 year: ca. 2.8 Mio. US\$) (SMAST, USA)

**Pi**, 2004: "Cooperative, industry-based and scientifically controlled at-sea experiment to test the performance of a haddock-separator trawl in Georges Bank B Closed Area I" (Broad Agency Announcement (BAA EAC # 04-0001) - Cooperative Research Partners Initiative (CRPI), funding period: Sep 20, 2004 - Sep 19, 2005; 6 month nc extension to March 19, 2006; budget: ca. 300 000 US\$) (SMAST, USA)

**CoPi**, 2005: "Extended New England Multispecies Survey" (NA05NMF4720339x, Total Budget for 1 year: ca. 2.94 Mio. US\$; start in 2006) (SMAST USA)

## Invited talks/lectures

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2008	"Versorgung mit Meeresfisch - Ist es wirklich <i>Fünf vor Zwölf?</i> ", 20.8.2008, ICD 2008, Davos, Schweiz
2007	<p>Risk assessment of North Sea Herring for stock rebuilding purposes using an optimization algorithm, 6.2.2007, Applied Mathematics Department, University of Cape Town, Cape Town, Südafrika</p> <p>On the detection of internal and external signals in the stock-recruitment relationship of North Sea herring, 12.3.2007, ICES, Kopenhagen, Dänemark</p> <p>Mögliche Ursachen des geringen Heringsnachwuchses in der Nordsee, 18.4.2007, Institut für Hydrobiologie und Fischereiwissenschaft, Uni Hamburg, Hamburg</p> <p>Shedding light on recruitment mysteries - internal and external signals in the stock-recruitment relationship of North Sea herring, 8.5.2007, SAHFOS, Plymouth, UK</p> <p>Vor- und Nachteile des "neuen" Konzepts des Maximum Sustainable Yield in der gemeinsamen Fischereipolitik der EU. 5.6.2007. Meeresumwelt-Symposium, BSH, CCH, Hamburg</p> <p>Die Nutzung Innovativer Monitoringkonzepte für ein Automatisiertes Raum-Zeit-Management von Fischbeständen. 18.6.2007. DWK, FTZ, Büsum</p> <p>Shedding light on recruitment mysteries - internal and external signals in the stock-recruitment relationship of North Sea herring, 18.9.2007, ICES ASC, Helsinki, Finland</p>
2006	<p>A framework for an optimal control of multispecies, multistock, multiarea fisheries (Workshop on Simple Mixed Fisheries Management Models, WKMIXMAN, ICES, Copenhagen, Dänemark, 10.1.2006)</p> <p>A fish population rebuilding framework to control multispecies, multistock, multiarea fisheries (Study Group on Management Strategies, ICES, Copenhagen, Dänemark, 24.1.2006)</p> <p>A fish population rebuilding framework to control multispecies, multistock, and/or multiarea fisheries for medium to longterm management purposes, 24.1.2006, SGMAS, ICES, Kopenhagen, Dänemark</p> <p>A framework for an optimal control of multispecies, multistock, multiarea fisheries, 13.2.2006, ISH-Kolloquien, BFAFi, Hamburg</p> <p>New Optimization Methods for Sustainably Managing Groundfish Stocks in New England Waters (12.4.2006, CAU Kiel, Kiel)</p> <p>Innovative Technologien - neueste technische und methodische Ansätze in der Fischereiforschung Neu-Englands, USA (24.5.2006, IfM-Geomar, Kiel)</p> <p>A rebuilding framework for an optimal control of multispecies, multistock, and/or multiarea fisheries (28.6.2006, ICES Symposium on Fisheries Management Strategies, Galway, Irland)</p> <p>A stock rebuilding algorithm featuring risk assessment and an optimal control of single or multispecies fisheries (22.8.2006, UNCERTAINTY Meeting (EU Concerted Action), Rom, Italien)</p>



- Extraction of daily activity pattern and vertical migration behavior from the benthic fish, *Lophius americanus*, based on depth analysis from data storage tags (21.9.2006, ICES ASC 2006, Maastricht, Niederlande)
- Schwerpunkte der Fischereiforschung in Hamburg (17.10.2006, Chinesische Besuchergruppe, BFAFi, Hamburg)
- Schwerpunkte der Fischereiforschung in Hamburg (20.10.2006, Türkische Besuchergruppe, BFAFi, Hamburg)
- 2005
- Geolocating Yellowtail Flounder on Georges Bank (National Marine Fisheries Service, Woodshole, Annual YT Tagging Meeting, 14.2.2005)
- On the Geolocation of Cod on Stellwagenbank (Gulf of Maine Research Institute, Portland, Maine, USA, Annual Cod Tagging Meeting, 21.6.2005)
- The SMAST Marine Groundfish Survey on US-Georges Bank using acoustic/optic autonomous underwater vehicles and deployed array systems (International InWaterTec Conference, Kiel, 2.9.2005)
- Geolocation of Massachusetts Bay Cod (*Gadus morhua*) - a tidal method approach. ICES/ASC Theme Session on How to Improve Environmental Monitoring and Biological Studies - Integrating Ecology and Statistics (ICES Annual Science Conference, Aberdeen, Scotland, 23.9.2005)
- The Use of Innovative Monitoring Strategies for a Spatial and Temporal Management of Fish Stocks in the Gulf of Maine. University of Rhode Island (GSO, URI, Rhode Island, USA, 12.10.2005)
- The Use of Innovative Monitoring Strategies for a Spatial and Temporal Management of Fish Stocks in the Gulf of Maine. University of Massachusetts at Amherst (Conservation Biology Dept., UMass Amherst, MA, USA, 24.10.2005)
- The Use of Innovative Monitoring Strategies for a Spatial and Temporal Management of Fish Stocks in the Gulf of Maine. National Marine Fisheries Service (NMFS, Woodshole, MA, USA, 16.11.2005)
- The Use of Innovative Monitoring Strategies for a Spatial and Temporal Management of Fish Stocks in the Gulf of Maine. University of Massachusetts at Dartmouth (Electrical and Computer Engineering Dept., UMassD, MA, USA, 18.11.2005)
- 2004
- The SMAST Decision Support System: Management of Groundfish Stocks in the Gulf of Maine and on Georges Bank - a brief overview of the idea (Marine Fisheries Institute Council, ATM Center, Fairhaven, MA, USA, 16.6.2004)
- On the SMAST Decision Support System - Management of Groundfish Stocks in the Gulf of Maine and on Georges Bank (IGS, Hoagland Pincus Conference Center, Shrewsbury, MA, USA, 30.6.2004)
- "A New Approach Towards an Optimal Control of Fisheries on Georges Bank: the SMAST Groundfish Optimization Simulation Model" (ICES Annual Science Conference, Vigo, Spain, 23.9.2004)
- 2003
- "On some general aspects of collecting reliable information" (SGFI, New Castle, UK, 18.2.2003)

2002	<p>"Differentiation of Baltic Sea herring stocks in Sound, Kattegat and Skagerak: a biometrical comparison of methods" (SGHAUB, Gdynia, Poland, 19.4.2002).</p> <p>"Nachhaltigkeit, Umweltvorsorge und Ökosystemansatz! Wie lassen sich diese Komponenten zu einer integrativen fischereibezogenen Umweltpolitik zusammenfügen?" (BLANO, BFAFi, Hamburg, 13.5.2002).</p> <p>"Nachhaltigkeit, Umweltvorsorge und Ökosystemansatz als Komponenten einer integrativen fischereibezogenen Umweltpolitik" (ISH Colloquium, BFAFi, Hamburg, 24.6.2002).</p> <p>"Bedeutung und Probleme von fischereibiologischen Forschungssurveys dargestellt am Beispiel des internationalen Heringslarvensurveys (IHLS) in der Nordsee" (Graduierten-Kolleg, Bergakademie TU Freiberg, Freiberg/Sachsen, 4.7.2002).</p> <p>"Einrichtung eines Ökosystemansatzes für das Fischereimanagement auf der Grundlage einer verantwortungsvollen Umweltpolitik" (Colloquium, IfM, Kiel, 12.7.2002).</p> <p>"Fish Stock Assessment under Restrictions: Taking into Account Variability, Precaution and Sustainability" (Seminar, SMAST, UMass, New Bedford, MA, USA, 26.11.2002).</p>
2001	<p>"Die Prinzipien von Vorsorge und Nachhaltigkeit - Umsetzungsansätze bei der Nutzung von Fischbeständen" (Universität Rostock, Mathematisch-Naturwissenschaftliche Fakultät, 5. Februar 2001).</p>
2000	<p>„Evaluierung und Korrektur von Alterslesungen bei Fischen mit Hilfe von Kalibrierungstechniken“ (Jahrestagung der Internationalen Biometrischen Gesellschaft in Rostock vom 20.-23. März 2000).</p> <p>"Sample design considerations with respect to sampling Baltic Sea herring otoliths" (Tvarminne, Finnland).</p> <p>„Alternative Modellansätze zur Trennung von Heringsbeständen in der Übergangzone von Nord- und Ostsee anhand meristischer Merkmale“ (Universität Rostock, Fachbereich Mathematik, 12. Juni 2000).</p>
prior to 2000	<p>„On the separation of herring stocks in the Western Baltic“ (ICES-WG On the assessment of herring stocks south of 62°, Kopenhagen).</p> <p>"Herring Stock Discrimination in Division IIIa" (Tagung der "Study Group on the Stock Structure of Baltic Herring" in Lysekil, Schweden).</p> <p>"On the Discrimination of Herring Stocks in Division IIIa" (ICES Council Meeting, Aalborg, Dänemark).</p> <p>"Zur Bestandstrennung von Hering in Division IIIa" (IOR Rostock, 25.3.1996).</p> <p>"Zur biostatistischen Kalibrierung von Alterslesungen bei Fischen" (Fachbereich Biologie, Uni Rostock, 11.6.1996).</p> <p>"Cod Age Reading Calibration" (Tagung der "Working Group On Cod Age Reading" im IOR Rostock).</p> <p>"Herring Age Reading Calibration" (Tagung der "Study Group on Herring Age Reading" in Riga, Lettland).</p>

„Statistische Kalibrierung und Korrektur von Alterslesungen an Fischotolithen“ (IOR, Rostock).

„On the quality control of cod age readings“ (Tagung der „Study Group On Cod Age Reading“ in Kopenhagen, Dänemark)

„The use of statistical calibration techniques for the analysis of age readings and their correction“ (4. EFAN-Meeting, Heraklion, Kreta)

„Gemeinsame Schätzung von experimentellen Daten und externer Information“ (ISH, Hamburg).

„Lineare Modellierung anhand experimentell gewonnener Daten mit zusätzlicher Literaturinformation - eine Anwendung in GAUSS“ (FBN, Dummerstorf, 13.5.1996).

„Gemischte Modellierung bei Vorliegen von experimenteller sowie Literaturinformation“ (Vortrag im Rahmen der Freitagskolloquien am IFM Kiel).

„Outline of the data organisation realized in the Bundesforschungsanstalt für Fischerei in Hamburg (BFAFi HH), Germany“ (Vortrag in RIVO-DLO, Ijmuiden, Niederlande).

„Variance Optimizing Cluster Algorithms as Instruments for a Geographical Stratification of Aggregated Fish Populations“ (Vortrag am Department of Applied Mathematics, University of Cape Town, Cape Town, South Africa).

„The Importance of Frequency Distributions for the Interpretation of Catch Data and the Fit by the Very Adaptable and Realistic Beta Distribution“ (ICES Council Meeting, Rostock-Warnemünde)

„A Modular Probability Model for Numerical Simulation of Fishery Surveys“ (ICES Council Meeting, La-Rochelle, Frankreich)

„Zur Optimierung der Survey- und Auswertungsstrategie des International Young Fish Survey in der Nordsee“ (Vortrag im Rahmen des Doktoranden-Seminars des IfM Kiel).

„Systemanalyse als Ansatz zur Optimierung von Aquakulturverfahren“ (Vortrag vor der DWK, BFAFi, Hamburg, 26.5.1987)