



Workshop-Proceedings

Processes in the Yangtze River System

- Experiences and Perspectives -

LAST-Minute Changes/Additions – Final Program

Aachen, Germany, 27. – 29. November 2011



jointly organized by



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Processes in the Yangtze River System

- *Experiences and Perspectives* -

Scientific program

28. November 2011

08:00 – 09:30 **Registration**

09:30 **Opening:**
R. OLLIG, Bundesministerium für Bildung und Forschung, Leiter Referat 724,
R. ROSSAINT, Vice-Rector, RWTH Aachen University,
U. SCHURR, Head of Institute Plant Sciences, Forschungszentrum Jülich GmbH
ZHOU Qi, Dean of the College of Environmental Science and Engineering,
Tongji University, Shanghai

Topic: ***Introduction***

Chair: ***R.-D. WILKEN***

09:45 – 10:05 **The German Yangtze-Project from the beginning to today,**
G. SUBKLEW, Forschungszentrum Jülich GmbH

10:05 – 10:25 **Occurrence of antibiotics and antibiotic resistant genes in drinking water**
from Yangtze River Delta,
D. YIN, Tongji University, Shanghai

10:25 – 10:45 **Ecosystem changes due to river impoundment by the Three Gorges Dam**
in Central China,
T. SCHOLTEN, Tübingen University

10:45 – 10:50 ***Conference Photo***

10:50 – 11:20 ***Coffee and Tea break***

Topic: ***Monitoring and Management I***

Chair: ***S. KÜPPERS***

11:20 – 11:40 **Cyclic process and warning monitor of typical pollutions in Three**
Gorges Reservoir,
X. CHEN, Institute of Hydroecology, Wuhan

11:40 – 12:00 **Monitoring of chlorinated pollutants biodegradation by PCR detection,**
A. TIEHM, Water Technology Center, Karlsruhe

- 12:00 – 12:20** **Eutrophication and its control methods of Lake Taihu,**
L. YANG, Nanjing University
- 12:20 – 13:30** **Lunch**
- Topic:** ***Water body dynamics I***
- Chair:** ***D. YIN***
- 13:30 – 13:50** **Numerical simulation of dissolved and particulate pollutant
transport dynamics in the near dam Yangtze section,**
B. WESTRICH, University of Stuttgart
- 13:50 – 14:10** **Effects of phenolic humus monomers on removal of nonylphenol from
water by a laccase,**
R. JI, Nanjing University
- 14:10 – 14:30** **Exposomics of Virtual Organisms in Three Gorges Area,**
K.-W. SCHRAMM, Technische Universität München
- 14:30 – 14:50** **Bioaccumulation and biotransformation of Polybromodiphenyl Ethers in
Crucian Carp,**
S. GAO, Nanjing University
- 14:50 – 16:10** **Coffee and Tea with Poster session**
- Topic:** ***Processes***
- Chair:** ***G. SUBKLEW***
- 16:10 – 16:30** **Method on ecological security assessment and early-warning in reservoir
watershed based on IROW framework,**
L. WANG, CRAES, Beijing
- 16:30 – 16:50** **Sorption of organic pollutants to Yangtze River sediments and their model
components,**
E. KLUMPP, Forschungszentrum Jülich GmbH
- 16:50 – 17:10** **Effect of transition metal ions on formation and distribution of
disinfection by-products during chlorination of drinking water,**
Z. ZHU, Tongji University, Shanghai
- 17:10 – 17:30** **Degradation of xenobiotics in water under various conditions,**
S. KÜPPERS, Forschungszentrum Jülich GmbH
- 19:30 – 22:30** **Conference Dinner**

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Topic: *Monitoring and Management II*

Chair: *A. SCHÄFFER*

09:00 – 09:30 **Management of Water Reservoirs,**
H. POLCZYK, Wasserverband Eifel-Rur

09:30 – 09:50 **Strategic plan of water pollution control for Three Gorges Reservoir and its upstream basin,**
Y. SU, CRAES, Beijing

09:50 – 10:10 **Assessment of water balance and sediment transport in the Xiangxi Catchment under different land use scenarios,**
K. BIEGER, Universität Kiel

10:10 – 10:30 **Urban impacts on the Yangtze and its tributaries Daninghe, Xiao Jiang and Jialing - gained from water chemistry analyses at selected sites,**
L. REID, Karlsruhe Institute of Technology

10:30 – 11:00 **Coffee and Tea break**

Topic: *Monitoring and Management III*

Chair: *R. JI*

11:00 – 11:20 **Distribution patterns and short term dynamics of water quality parameters in the Daninghe and in its confluence zone with the Yangtze- First results of in-situ analyses with the MINIBAT,**
A. HOLBACH, Karlsruhe Institute of Technology

11:20 – 11:40 **Case study on the polluted urban water body rehabilitation in Yangtze River Basin,**
S. CHENG, Tongji University, Shanghai

11:40 – 12:00 **WATERUSE - First assessment of water quality concerning micropollutants in the TGR and its tributaries,**
A. WOLF, IWW, Mülheim

12:00 – 13:30 **Lunch**

- Topic:** *Water body dynamics II*
- Chair:** *A. TIEHM*
- 13:30 – 13:50** **The adsorption and degradation of pesticide atrazine in the soil of the WFZ in Three-Gorges Reservoir,**
L. MA, Tongji University, Shanghai
- 13:50 – 14:10** **Conceptual approach and first results of the MICROTOX project: Fate, effects and bioaccumulation of model pollutants in the Yangtze river,**
B. SCHOLZ-STARKE, RWTH Aachen
- 14:10 – 14:30** **Microhabitat preference and population structure of Chinese kissing loach, *Leptobotia tchangii*,**
J. LI, TONGJI University, Shanghai
- 14:30 – 15:00** **Coffee and Tea break with Poster session**
- Topic:** *Water body dynamics III*
- Chair:** *L. WANG*
- 15:00 – 15:20** **Residues of Organohalogen Contaminants in Sediment and Water from Dianshan Lake in Yangtze River Delta,**
Y. QIU, Tongji University
- 15:20 – 15:40** **Dynamics of Performance Reference Compounds (PRC) in Virtual Organisms (VO) exposed in TGA,**
C. TEMOKA, Technische Universität München
- 15:40 – 16:00** **Data base and evaluation for numerical modelling of pollutant transport in the Yangtze,**
H. WEI, Universität Stuttgart
- 16:00 – 17:30** **“World Café”**
- 17:30 – 17:45** **Outlook and Perspectives**
- 19:30 – 21:00** **Farewell Reception**

Conference WLAN

- Network: mops
- Login: Yangtze
- Passwort: xokene

Process of Circulation and Pre-warming Supervision of Typical Pollutants of the Three Gorge Reservoir

Jianbo Chang, Xiaojie Pan and Xiaojuan Chen

Institute of Hydroecology, Ministry of Water Resources, Chinese Academy of Sciences, Wuhan 430079, P.R. China

The Three Gorge Project (TGP), a multi-purpose, multi-benefit, systematic project, has some impact to the eco-environment when it is showing its giant, comprehensive effect. Storage of water makes the water in the reservoir less movable and thus lower ability of diluting and diffusing. Therefore, density of pollutant is increased gradually and may be passed through the food chain towards the whole ecosystem by the effect of enrichment and accumulation, and badly hamper the function and bio-diversity of the aquatic ecosystem. This article focuses on analyzing the translocation and transformation of typical pollutants and operating the study of biological index of water quality in the reservoir, for assessing the state of pollutants in the water and their prospective damage.

Investigation on heavy metal and persistent organic pollutants in the Three Gorge Reservoir (TGR) indicates that production of 5 kinds of metal, Pb, Hg, Cd, Cr⁶⁺ and As, in the City of Chongqing is 305.8ton/yr and the discharge of that is 6.83ton/yr. Most of them come from three industries: surface treatment of metal and thermomechanical treatment, manufacture of synthetic material and manufacture of primary chemicals.

Supervision of water in the TGR indicates that the monitoring sections of the Yangtze River, Jialing River and Wujiang River in the river course of Chongqing, Cr⁶⁺, As, Hg and Pb reach Class of National Environmental Quality Standard for Surface Water GB3838-2002 and Cd reaches. As for the distribution, the river course of TGR has higher content of heavy metal than the whole water body.

The study of translocation and bio-enrichment bases on the primary supervision of the lower reach of Wujiang River, and primary supervision of Hg. Content of Total-Hg in the Wujiang River in general reaches and class of National Environmental Quality Standard for Surface Water, but still it is below the Standard for Fishery. As for the content of Hg, suspended matter(including plankton and suspended particle) deposits water body. That in zoobenthos is a little lower, not reaching Hg-limit Standard of Aquatic Products GB 2762-1994. That in fishes is high, and that in carps, elongate loach and *Spinibarbus sinensi* exceed Hg-limit Standard of Aquatic Products GB 2762-1994. The extent of enrichment of total Hg inside fishes is related to their position of trophic level and environment of the layer of water in which they live. Carnivores have higher content than omnivores and those in upper layers higher than that in lower layers in the river.

And then, by advanced apparatus, through the research on the impact of heavy-metal exposing on the respiratory response of fish and on the efficiency of photosynthesis of algae, we operate research on pre-warming index of heavy metal during the early period of fish and algae, and the relevant research process will be of great importance upon biological pre-warming supervision of heavy metal.

Last minute participants

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Yangtze-Project - contributions of German Water-Project-Partners:

Website now in English online: <http://www.yangtze-project.de/index.php?index=45>