

IWHR + ICFM + WFEO-CEIT ~ UNESCO-FLOODS



Jing Peng, Ph.D.

*Vice President, IWHR
Secretary General, ICFM
Chair, WFEO-CEIT*

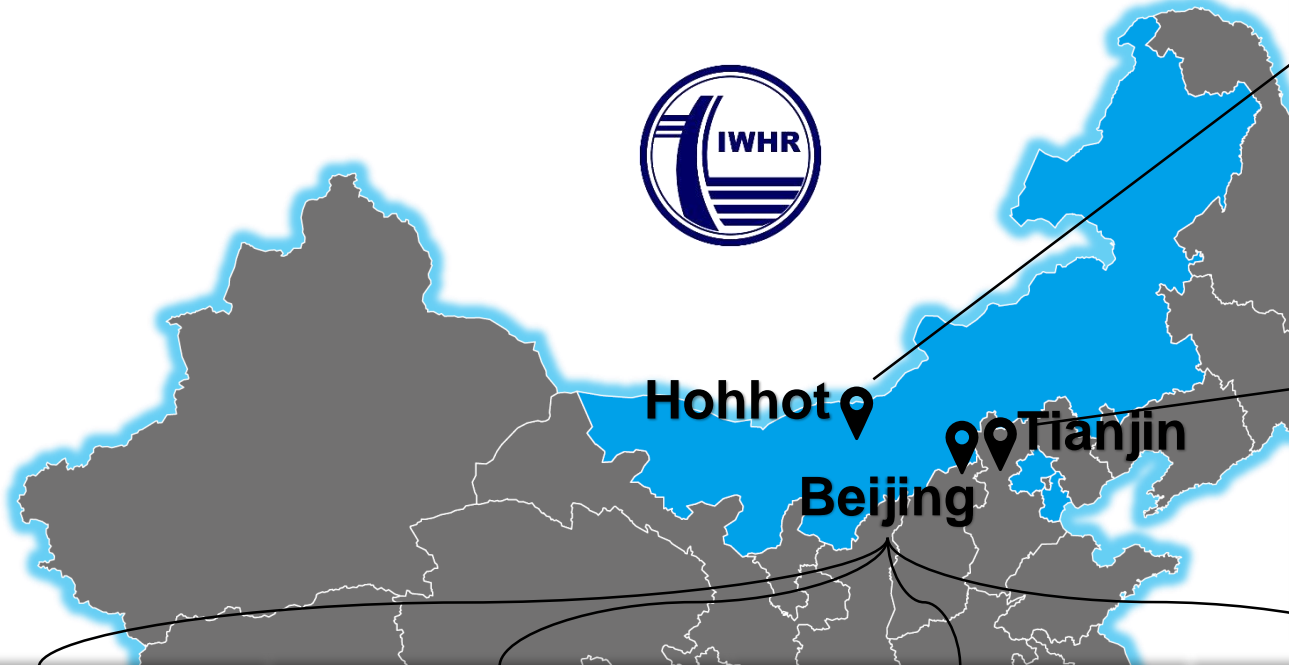
**APRIL 5, 2019
LJUBLJANA, SLOVENIA**

IWHR: Locations



中国水利水电科学研究院
China Institute of Water Resources and Hydropower Research

China Institute of Water Resource and Hydropower Research



Dep't of Water
Resources for
Pastoral Areas



Tianjin Institute of
Hydroelectric and
Power Research



IWHR Headquarters
South



IWHR Headquarters
North



Daxing
Experimental Base

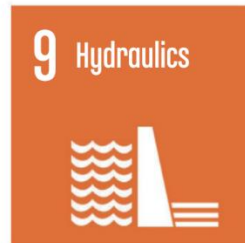
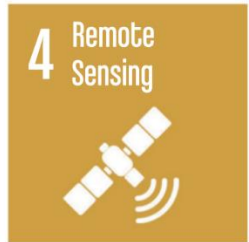
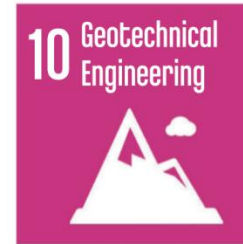
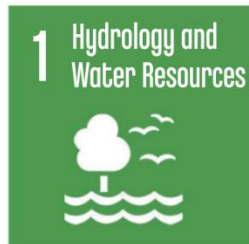


Yanqing
Experimental Base

IWHR: Research Areas



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China Institute of Water Resources and Hydropower Research



IWHR: Int'l Cooperation



中国水利水电科学研究院
China Institute of Water Resources and Hydropower Research

Partners with Cooperative Agreement



Hosting of International Organizations



IWHR: Organizational Structure



中国水利水电科学研究院
China Institute of Water Resources and Hydropower Research

Research Departments

(11)

- Department of Water Resources
- Research Center on Flood and Drought Disaster Reduction (*including the Remote Sensing Technology Application Research Center and the Department of Water Resources History*)
- Department of Water Environment
- Department of Irrigation and Drainage
- Earthquake Engineering Research Center
- Department of Geotechnical Engineering
- Department of Structures and Materials
- Department of Sediment Research
- Department of Hydraulics
- Research Center for Sustainable Hydropower Development
- Department of Water Resources for Pastoral Areas

Division of Comprehensive Business

(3)

- Section of Postgraduate Education
- Standardization Research Center
- Information Center

Enterprises

(5)

- Beijing IWHR Corporation
- Beijing IWHR Technology Co., Ltd.
- Beijing IWHR-KHL Co., Ltd.
- Tianjin Institute of Hydroelectric and Power Research
- Beijing Zhongshui Runke Certification Co., Ltd.

Research Activities Related to Flood

Disaster Events

2005, Shalan Town



117
death

105
student
death

2006, Hunan Prov.



346
death

89
losing

2010, Zhouqu County



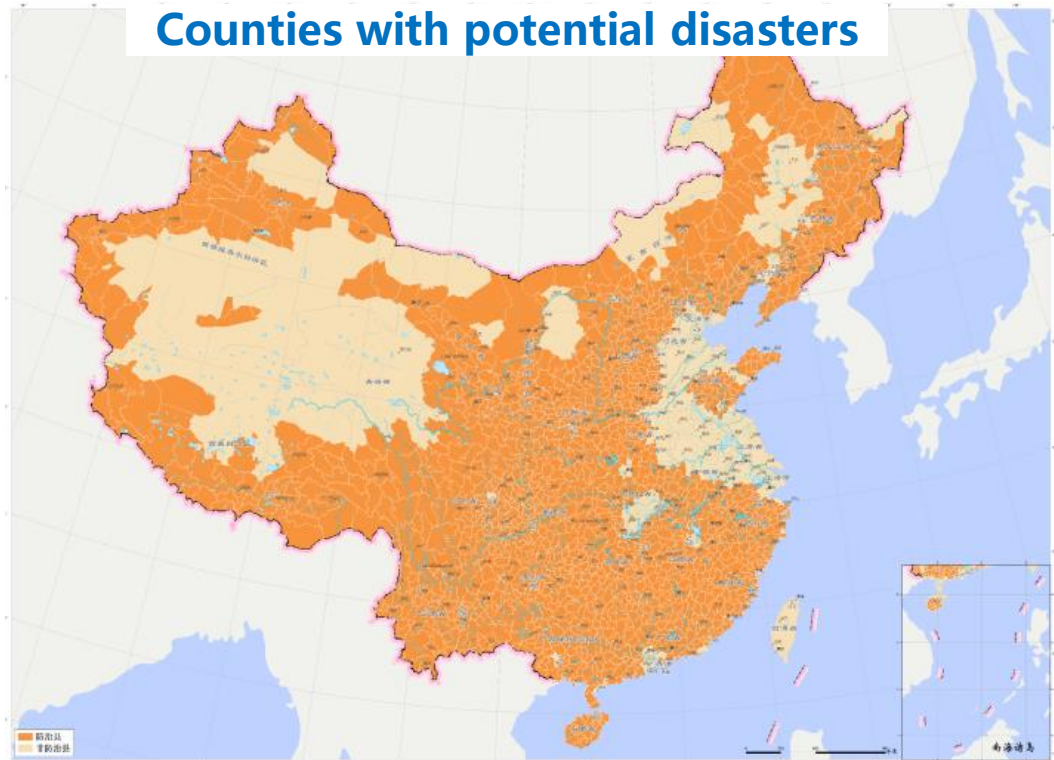
1501
death

264
losing

Death toll takes up
70% of that caused by
all flood disasters.

In 2010, National Flash Flood Project was launched.

Counties with potential disasters

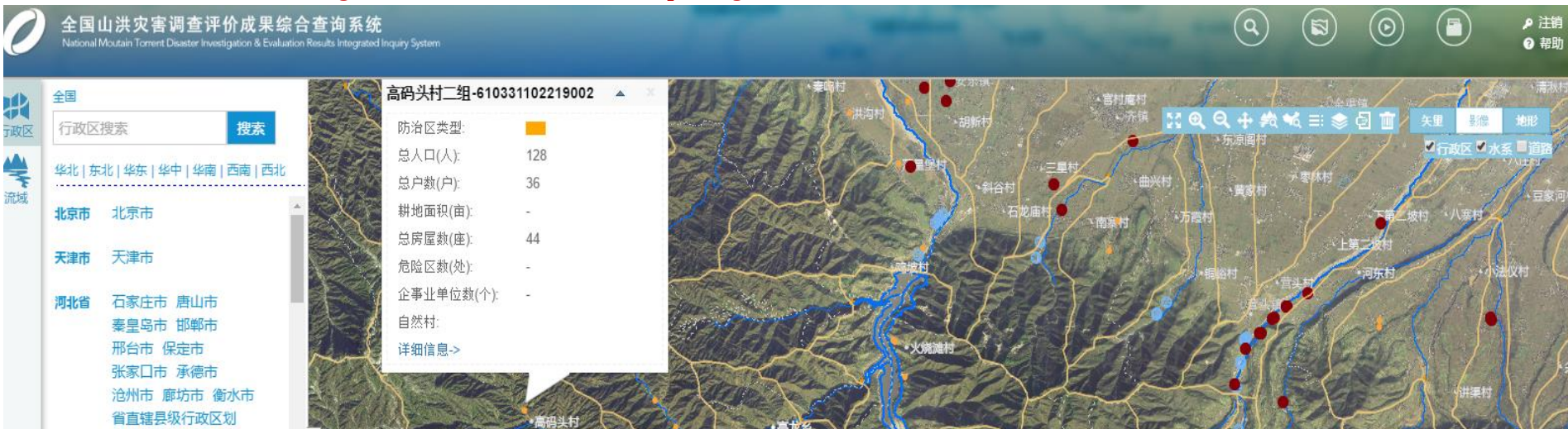


Main contents include:

- Flash flood investigation and assessment
- Monitoring and warning system
- Community-based prevention system

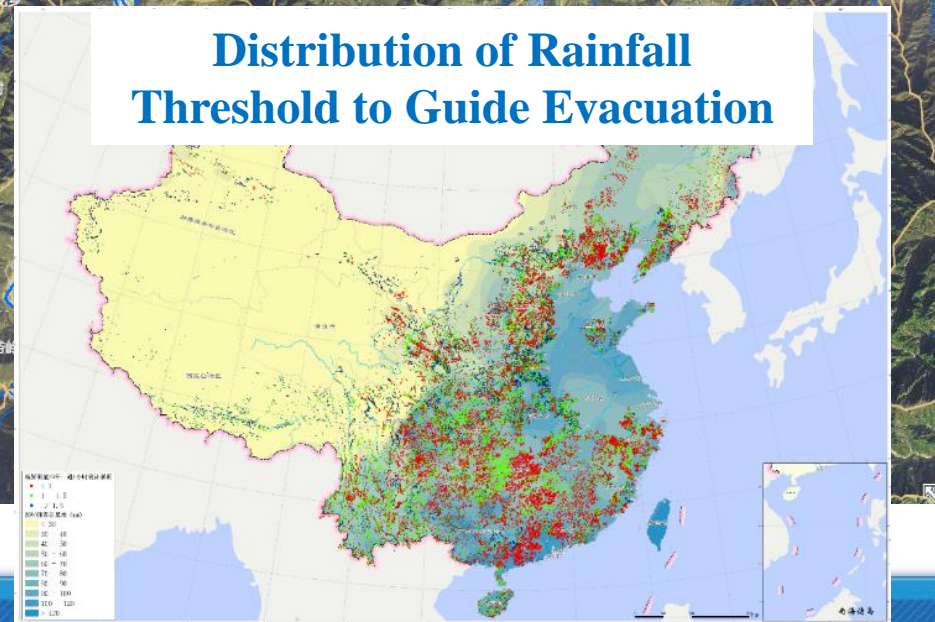
National Flash Flood Project

Information System (result inquiry)



Distribution of Village
with Flash Flood Risk

Distribution of Rainfall
Threshold to Guide Evacuation



National Flash Flood Project

Monitoring and warning information management system at state, province and city level



Automatic Monitoring (46000 Rain gauge and 20000 stage gauge)

County-level monitoring and warning operation platform



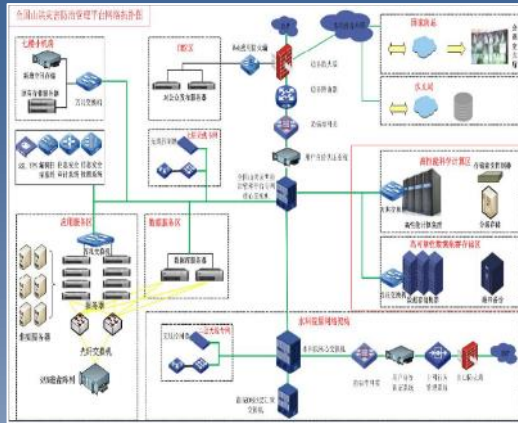
Alert system



Warning message transfer, evacuation

State-Level Flash Flood Monitoring and Warning Platform

Hardware and Network

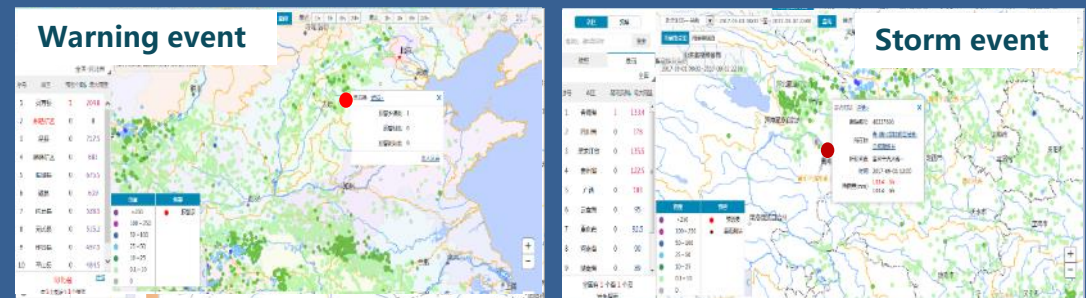


- High-performance computer cluster;
- High-reliability storage cluster;
- Special Network connection.

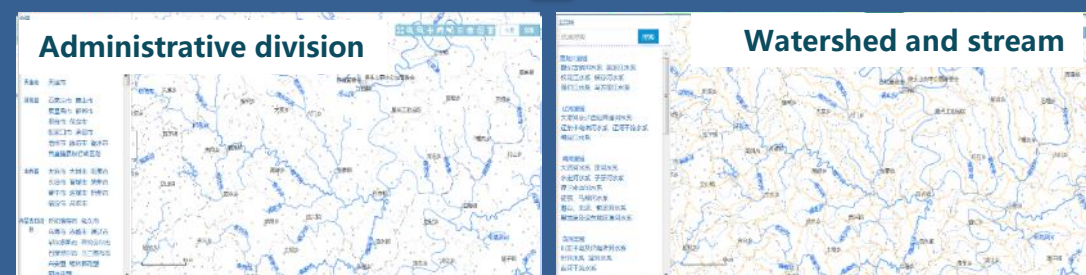
Application Software



Four typical level, to supply information service in different scale



Two type of events, to drive around central tasks



Two Principle path, to organize disaster prevention information

Sponge City Construction

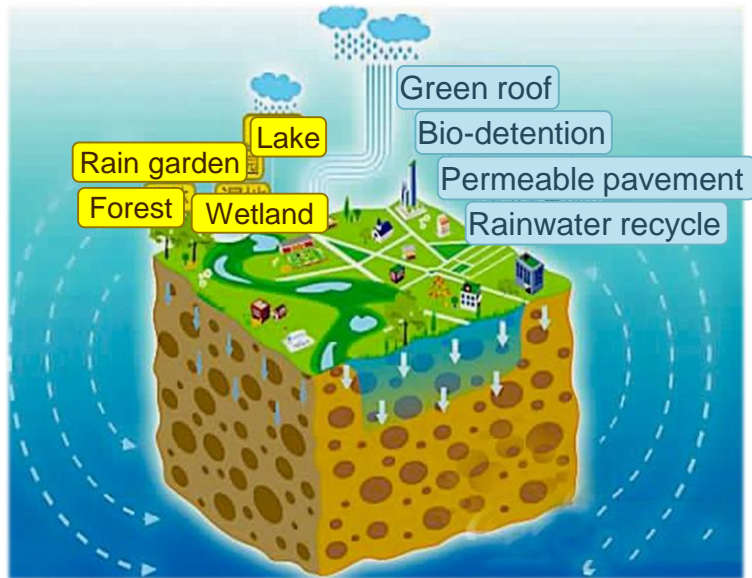


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- More than **100** cities suffered from urban flood disasters every year since 2006
- More than **100** million population was directly affected.

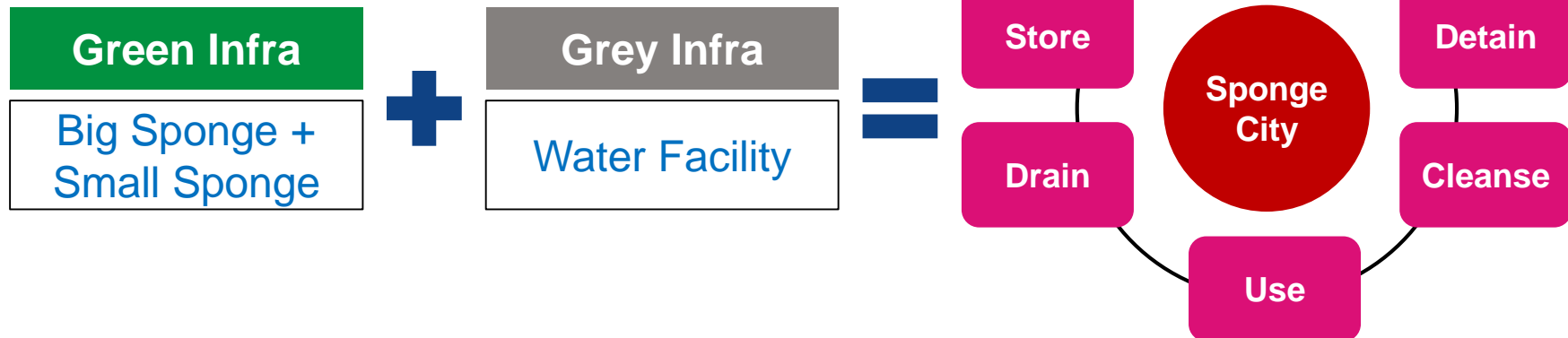


Managing Water for a Sustainable and Resilient Society



Concept

To build sponge cities with natural accumulation, natural infiltration and natural purification

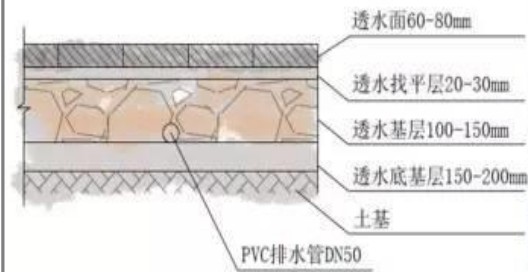


Elements in Sponge City Construction

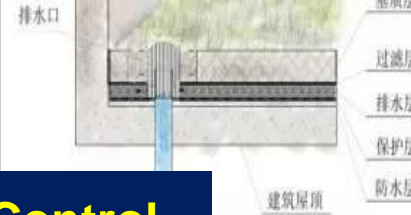


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Permeable Pavement



Low Elevation Greenbelt



Source Control

Green Infrastructure



Gray Infrastructure



Process Regulation

Drainage Capacity



Dredge River Cannal



Emission Control

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Urban Rainfall and Flood Modeling with Super-standard Rainfall

上海市浦东新区暴雨洪水仿真模型

降雨水量
 $V=13099984.0(m^3)$
 年 月 日 时
 2000.8.31 18:
 物节点点内的水量
 $V=37547436.0(m^3)$
 水量平衡系数
 $F=1.009151$
 降雨面积
 $A=152.9km^2$

地面高程(m)

1.00 ~ 2.00
2.00 ~ 3.00
3.00 ~ 4.00
4.00 ~ 5.00
5.00 ~ 6.00
6.00 ~ 7.00
7.00 ~ 8.00
8.00 ~ 9.00
9.00 ~ 10.00
10.00 ~ 50.00
50.00 ~ 100.00
100.00 ~ 150.00

水深(m)

0.00 ~ 0.15
0.15 ~ 0.30
0.30 ~ 0.50
0.50 ~ 1.00
1.00 ~ 1.50
1.50 ~ 3.00
3.00 ~ 5.00
5.00 ~ 30.00

比例尺: 4000 米

降雨量mm **徐汇降雨过程线**

时间(hr)

水位m **吴淞口水位过程线**

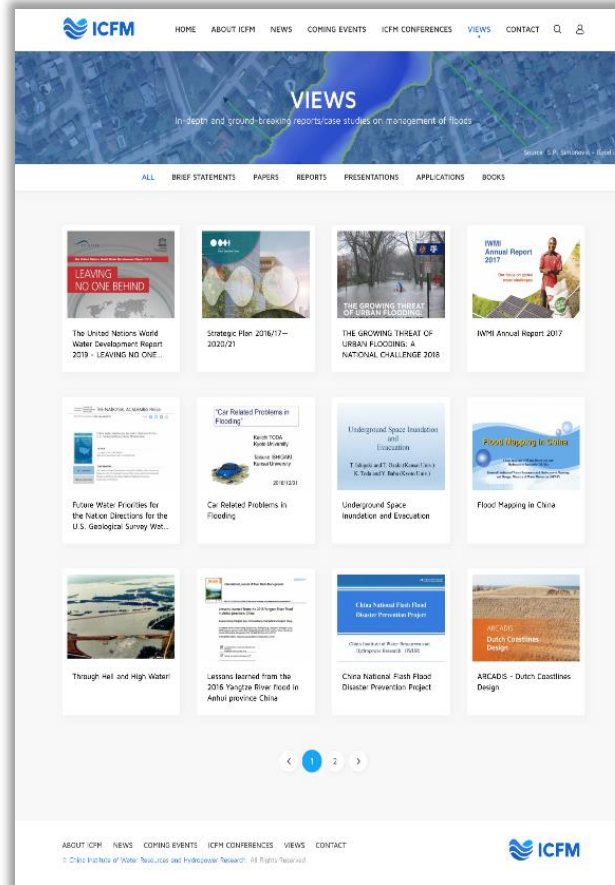
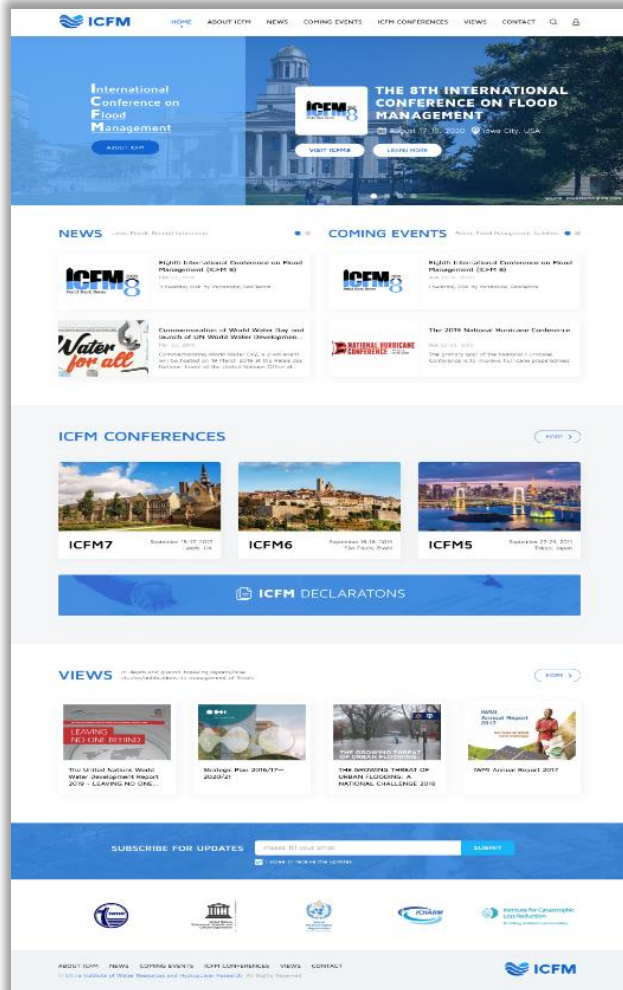
时间(hr)

流量m³/s **上游流量过程线**

时间(hr)

ICFM: hosted in IWHR

International Conference on Flood Management



www.icfm.world



ICFM8, University of Iowa, Aug. 17-19, 2020



中国水利水电科学研究院
China Institute of Water Resources and Hydropower Research

8th International Conference on Flood Management

"Lowering Risk by Increasing Resilience"

The University of Iowa, Iowa City, Iowa, USA

August 17 - 19, 2020



About ICFM

Started in Germany in 1999, the International Conference on Flood Management (ICFM) offers an international conference platform, hosted every 3 years, to discuss a range of flood related issues and realize significant change in a multidisciplinary, multi-sectoral area. ICFM provides a unique opportunity for various specialists including engineers, planners, natural and social scientists, health specialists, disaster managers, decision makers, and policy makers to come together to exchange ideas and experiences. Since September, 2017, the permanent secretary of ICFM has been officially stationed at China Institute of Water Resources and Hydropower Research (IWHR).

Stay tuned...Subscribe for updates and conference details at www.icfm2020.org or www.icfm.world

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Permanent ICFM Secretary

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T: +86-10-68789897 F: +86-10-68412316 Email: icfm@icfm.world

Eight International Conference on Flood Management (ICFM 8)

"Lowering Risk by Increasing Resilience"

The University of Iowa, Iowa City, Iowa, USA

August 17 - 19, 2020

KEY DATES & REGISTRATION

Key Dates

Abstract submission:

July 1, 2019 - September 15, 2019

Notification of acceptance:

December 1, 2019

Full paper submission:

January 15, 2020 - April 27, 2020

Registration

Early-bird registration:

January 31 - May 3, 2020

Standard/student registration:

May 4 - July 17, 2020

Late registration:

July 18 - August 3, 2020

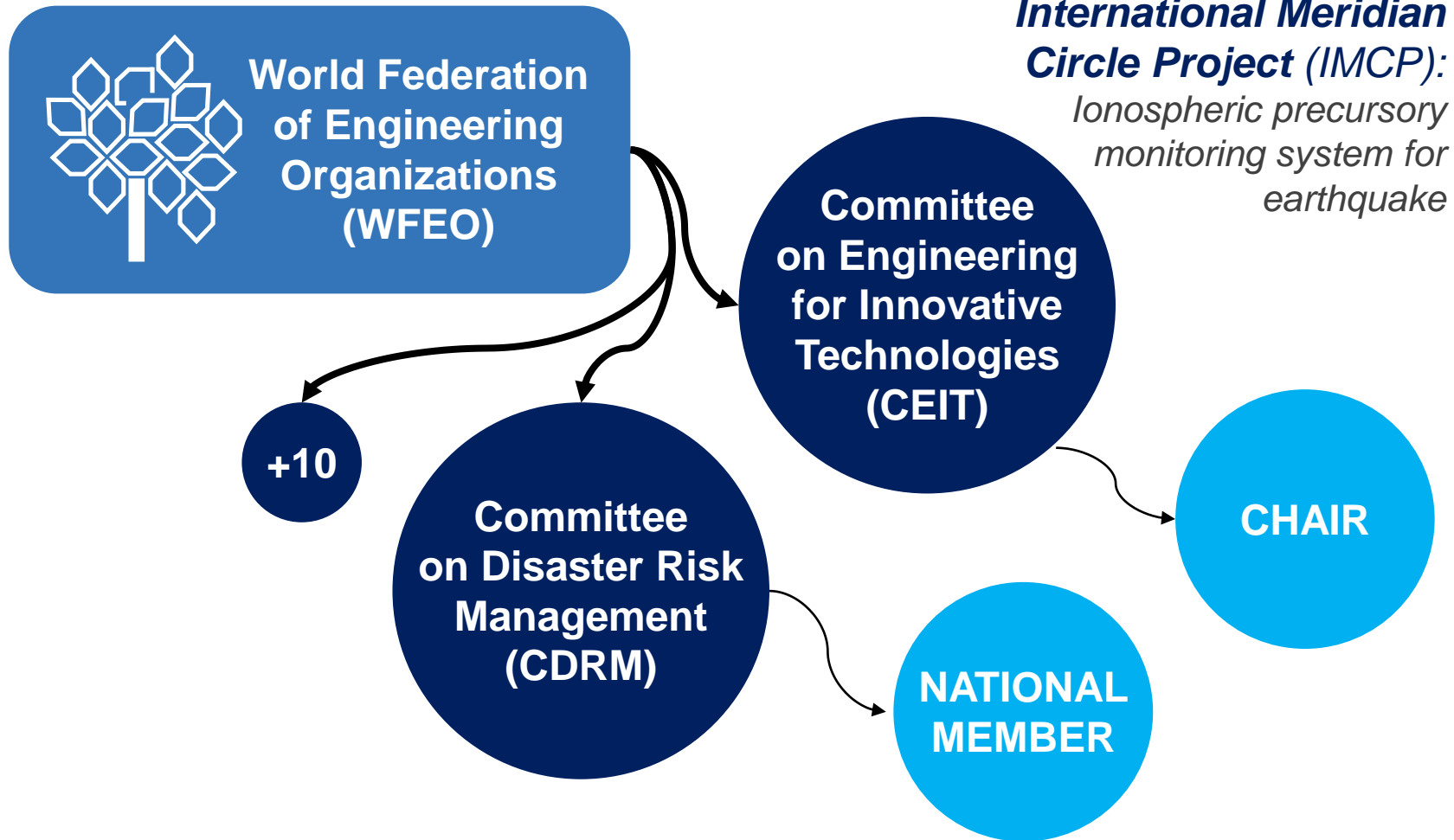
Early-bird: TBD

Full fee: TBD

Student Early-bird: TBD

Full student: TBD

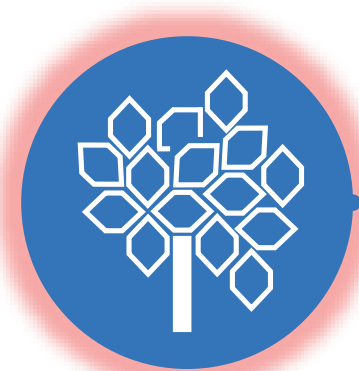






Evidence-Based Science for Disaster Risk Reduction

*a 10-year research program to
deal with natural disaster
challenges, mitigate impacts,
and improve policy-making*



Int'l Program Office

*hosted by
Chinese
Academy of
Sciences*

Contact Us

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Hvala vam!