



## Venue

Polytechnic University of Valencia  
NEXUS Conference Building (6G)  
Camí de Vera s/n, 46022  
Valencia (Spain)

## Important dates

### May 13, 2011:

Deadline for abstracts FORUM and  
BW Open Session

### June 1, 2011:

Notification of acceptance

### July 8, 2011:

Deadline Full Texts FORUM and  
BW Open Session

### September 15, 2011:

Deadline for BW solutions of themes

## Proceedings publishers

3IWRDD-Forum: CRC Press/Balkema  
3IWRDD-Benchmark: SPANCOLD

## Fees

Included activities in the agenda  
depending on registration choices

Forum (F): 250€

Technical Tour (T) or Course (C): 125€

Benchmark Workshop (BW): 250€

**Week (F + T + BW or F + C + BW): 495€**

Early registration before September 1, 2011:  
10% Discount

50% Discount for UPV PhD and Master students

**FOR ADDITIONAL INFORMATION:**  
Ms. Jessica Castillo-Rodríguez (UPV)  
E-mail: [jecasrod@aaa.upv.es](mailto:jecasrod@aaa.upv.es)

OCTOBER 17 - 18

3<sup>RD</sup> INTERNATIONAL FORUM ON RISK ANALYSIS, DAM SAFETY,  
DAM SECURITY AND CRITICAL INFRASTRUCTURE MANAGEMENT

CO-ORGANIZER:



Homeland  
Security

OCTOBER 19

PRACTICAL COURSE "RISK MANAGEMENT MODELS"  
OR TECHNICAL TOUR: TOUS DAM

CO-ORGANIZER:



OCTOBER 20 - 21

11<sup>TH</sup> ICOLD BENCHMARK WORKSHOP ON  
NUMERICAL ANALYSIS OF DAMS

CO-ORGANIZERS:



Registration and accommodation  
[www.ipresas.upv.es](http://www.ipresas.upv.es)

SPONSORING ORGANIZATION:



IN COLLABORATION WITH:



COLEGIO DE INGENIEROS DE CAMINOS, CANALES Y PUERTOS  
Comunidad Valenciana

## General

The Institute of Water Engineering and Environment (IIAMA) of the Polytechnic University of Valencia (UPV) is pleased to invite you to the 3rd International Week on Risk Analysis, Dam Safety, Dam Security, and Critical Infrastructure Management (3IWRDD) scheduled to take place in Valencia, Spain, from October 17-21, 2011. Following the success of the its two previous conferences in 2005 and 2008, the purpose of the 3IWRDD is to provide an effective forum for the exchange of knowledge and best practices between key stakeholders, including owners and operators, designers, engineers, researchers and government authorities.

As society continues to increase its demands for higher levels of safety, security and reliability for all critical infrastructures, the design, construction, and operation of dams should be integrated as part of a comprehensive risk management framework that can effectively address natural and manmade hazards. Integrated management strategies are becoming increasingly important in recent years and as such, their related implementation efforts should include aspects such as sustainability, resilience, and public participation.

In support of the 3IWRDD, UPV is collaborating with four co-organizing entities, including the United States Department of Homeland Security (DHS), the Jucar River Authority (CHJ, MMARM), the International Commission on Large Dams (ICOLD), as well as the Spanish Committee on Large Dams (SPANCOLD). In addition, the Professional Association of Civil Engineers (CICCP, Valencia) is also collaborating in the organization of this event. The 3IWRDD is also aligned with several research and development efforts focused on integration of infrastructure safety and security that are currently being conducted by UPV and funded by the Spanish Ministry of Science and Innovation (MICINN, BIA 2010-17852).

The 3IWRDD represents a unique international meeting that will consist of two different events, including the 3rd International Forum on Risk Analysis, Dam Safety, Dam Security, and Critical Infrastructure Management (Forum) from October 17-18, and the 11th ICOLD Benchmark Workshop on Numerical Analysis of Dams (Benchmark Workshop) from October 20-21. These activities, which are described further below, will provide an opportunity for exciting and challenging discussions through the various technical sessions offered through the Forum and the Benchmark Workshop. In addition, attendees will have the opportunity to gain direct insight regarding these issues by participating in a practical course on risk management (Course) or visiting one of Valencia's most impressive structures, Tous Dam (Technical Tour), both scheduled to take place on October 19.

- **SESSION I. CRITICAL INFRASTRUCTURE MANAGEMENT (October 17):** The main objective of this session is to encourage the efficient, equitable, and sustainable management of critical infrastructures.
- **SESSION II. RISK ANALYSIS (October 17):** Risk analysis represents a primary tool for achieving effective management of critical infrastructures along with a suitable framework for the development of risk management models regarding natural, technological and human-induced hazards. The widespread use of risk analysis relies on the ability to develop objective, robust and clear information that can inform effective decision making.

- **SESSION III. DAM SAFETY and SESSION IV. DAM SECURITY (October 18):** Due to the important role that dams and reservoirs play for hydroelectric production, water supply, irrigation and protection against floods, these sessions will focus on aspects regarding dam safety and their vulnerabilities in terms of manmade hazards.
- **PRACTICAL COURSE and TECHNICAL TOUR (October 19):** A practical course on risk management models will be offered along with a technical tour to the Tous Dam (a vital infrastructure in Valencia that provides water supply and flood protection, as well as assists in irrigation and environmental uses).
- **ICOLD BENCHMARK WORKSHOP on Numerical Analysis of Dams (October 20-21):** Numerical modeling of dam behavior represents a basic tool for dam safety programmes and maintenance; therefore, the following technical themes will be discussed during the ICOLD Benchmark Workshop:
  - Theme A: Effect of concrete swelling
  - Theme B: Overtopping and seepage evolution in case of rockfill dams
  - Theme C: Relations between probability of failure and safety coefficient
  - Theme D: Open session - Dam numerical modeling

Based on the variety of sessions, topics and themes that will be presented during the 3IWRDD, we hope that all participants will benefit from this unique international opportunity to collaborate with key stakeholders, including public and private entities, universities, research centers, designers, engineers, owners and operators.

## Venue

The 3IWRDD will be held in the Nexus Building at the Campus of the Polytechnic University of Valencia (UPV). The UPV is an innovative and entrepreneurial University, with effective mechanisms for the dissemination of scientific and technological results, which excels as an outstanding institution in research and in training professionals. Currently, the University receives more than 37,000 students.



Nexus Building, UPV

October 17-21, 2011. Valencia, Spain. [www.ipresas.upv.es](http://www.ipresas.upv.es)

## Forum Sessions

### OCTOBER 17 (MONDAY)

#### SESSION I: Critical Infrastructure Management

“Efficient, equitable and sustainable management of critical infrastructures”

- Assessment and classification of critical infrastructures
- Criteria and recommendations for preventive measures and sustainability
- Management strategies and prioritization of investments
- Climate change impacts
- Case histories

#### SESSION II: Risk Analysis

“Development of risk analysis models for natural, technological and human-induced hazards”

- Risk estimation and evaluation
- Risk tolerability
- Risk management
- Case histories

### OCTOBER 18 (TUESDAY)

#### SESSION III: Dam Safety

“Dam Safety Risk Management”

- Legislation and policies
- Hydrological, seismic and operational issues
- Surveillance, monitoring, assessment, evaluation and emergency preparedness
- Case histories

#### SESSION IV: Dam Security

“Dam Security Risk Management”

- Security programs and emergency management
- Security against terrorism, vandalism and sabotage
- Blast damage and vulnerability assessment
- Cybersecurity
- Case histories

## Technical Tour / Practical Course

### OCTOBER 19 (WEDNESDAY)

#### PRACTICAL COURSE “RISK MANAGEMENT MODELS”

The course objective is to explain and provide practical experience in the process of risk modeling and results interpretation in order to support decision making. Thus, the following topics will be covered with a practical focus: guiding principles of risk analysis, necessary data for risk models and its treatment, obtaining results with a risk analysis software and comparison with tolerable risk criteria.

The course will be conducted in English and Spanish concurrent sessions.

### OCTOBER 19 (WEDNESDAY)

#### TECHNICAL TOUR “TOUS DAM”

The objective is to visit a critical infrastructure in the Valencian Region: the Tous Dam. It is located in the Jucar river course and it has become a fundamental infrastructure in terms of flood protection, water supply, irrigation and environment. The technical tour will also include a visit to the Albufera Nature Reserve. Due to the great bio-diversity of this protected natural space, the Albufera Nature Reserve has been included, among others, in the list of wetlands of international importance for birds established in virtue of the Ramsar agreement.

## Benchmark Workshop Themes

### OCTOBER 20 (THURSDAY)

#### THEME A: Effect of concrete swelling

“Effect of concrete swelling on the equilibrium and displacements of an arch dam.”

Formulator: Coyne et Bellier – Tractebel Engineering

#### THEME B: Overtopping and seepage evolution in case of rockfill dams

“Simulation of the behavior of prototype of rockfill dams during overtopping scenarios (Seepage evolution and beginning of failure).”

Formulator: CIMNE, UPM and CEDEX.

### OCTOBER 21 (FRIDAY)

#### THEME C: Relations between probability of failure and safety coefficient

“Estimation of the probability of failure of a gravity dam for the sliding failure mode.”

Formulator: UPV.

#### THEME D: Open session - Dam numerical modeling

Open session to present other relevant issues and results on dam numerical modeling.

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**Co-organizers:**

3<sup>rd</sup> International Forum on Risk Analysis, Dam Safety, Dam Security, and Critical Infrastructure Management

Technical Tour / Practical Course

11<sup>th</sup> ICOLD Benchmark Workshop on Numerical Analysis of Dams

Department of Homeland Security (DHS), United States



Confederación Hidrográfica del Júcar



Technical Committee on Computational Aspects of Analysis and Design of Dams (ICOLD)



Spanish Committee on Large Dams (SPANCOLD)

Sponsoring Organization: Ministry of Science and Innovation of Spain (MICINN)



In Collaboration with: Colegio de Ingenieros de Caminos, Canales y Puertos C.V.



AGENDA	October 17, Monday	October 18, Tuesday	October 19, Wednesday	October 20, Thursday	October 21, Friday
08:00 - 09:45	Registration and posters	09:00 - 13:15 <b>Session III DAM SAFETY</b>	09:00 - 10:00 <b>Curso</b>	08:00 - 09:45 Registration	09:00 - 11:00 Working Session Theme C "Probability of failure and safety coefficient"
10:00 - 11:00	Welcome to the 3IWRDD	09:00 - 09:10 Chair Address Session III	09:00 - 10:00 Registration	10:00 - 11:00 Welcome to the 11 <sup>th</sup> ICOLD Benchmark Workshop	
11:00 - 11:30	Opening Forum	09:10 - 09:45 Invited Conference 3a	10:00 - 11:30 Course "Risk Management Models" Part 1	11:00 - 11:30 Coffee-break	11:00 - 11:30 Coffee-break
11:30 - 12:00	Coffee-break	09:45 - 10:45 Open papers + debate	10:00 - 11:30 Course "Risk Management Models" Part 1	11:30 - 13:30 Working Session Theme C "Probability of failure and safety coefficient"	
12:00 - 14:00	<b>Session I CRITICAL INFRASTRUCTURE MANAGEMENT</b>	10:45 - 11:15 Coffee-break	11:30 - 12:00 Coffee-break	11:30 - 14:00 Working Session Theme A "Effect of concrete swelling"	13:30 - 14:30 Lunch
12:00 - 12:10	Chair Address Session I	11:15 - 11:45 Invited Conference 3b	12:00 - 14:00 Course "Risk Management Models" Part 2	14:00 - 15:00 Lunch	14:30 - 16:00 Session Theme D "Open Technical Session"
12:10 - 12:40	Invited Conference 1a	11:45 - 13:15 Open papers + debate	12:00 - 14:00 Course "Risk Management Models" Part 2	15:00 - 16:30 Working Session Theme B "Overtopping and seepage evolution"	16:00 - 16:30 Coffee-break
12:40 - 14:00	Open papers + debate	13:15 - 14:15 Lunch	14:00 - 15:00 Lunch	16:30 - 17:00 Coffee-break	16:30 - 18:00 Round table
14:00 - 15:00	Lunch	14:15 - 16:00 <b>Session IV DAM SECURITY</b>	14:00 - 15:00 Lunch	17:00 - 18:30 Working Session Theme B "Overtopping and seepage evolution"	18:00 - 18:30 Closing ceremony
15:00 - 15:30	Invited Conference 1b	14:15 - 14:25 Chair Address Session IV	15:00 - 16:30 Course "Risk Management Models" Part 3	20:00 - 23:00 BW Dinner	
15:30 - 18:30	<b>Session II RISK ANALYSIS</b>	14:25 - 15:00 Invited Conference 4	15:00 - 16:30 Course "Risk Management Models" Part 3		
15:30 - 15:40	Chair Address Session II	15:00 - 16:00 Open papers + debate	16:30 - 17:00 Coffee-break		
15:40 - 16:10	Invited Conference 2	16:00 - 16:30 Coffee-break	17:00 - 18:00 Course "Risk Management Models" Part 4		
16:10 - 17:00	Open papers	16:30 - 18:15 Round table	17:00 - 18:00 Course "Risk Management Models" Part 4		
17:00 - 17:30	Coffee-break	18:15 - 18:30 Closing ceremony	18:00		
17:30 - 18:30	Open papers + debate				
20:00 - 23:00	Conference Dinner				

**Fees:**

Included activities in the agenda depending on registration choices

Early registration before September 1, 2011: 10% Discount  
50% discount for UPV PhD and Master students

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**Registration**

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Week (F + T + BW or F + C + BW): 495€

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## Abstracts: Instructions

**DEADLINE FOR ABSTRACTS: MAY 13, 2011**

Prospective participants are invited to submit abstracts by e-mail to the Organising Committee, by using the available document in the following link:

[http://www.ipresas.upv.es/abstract\\_E.html](http://www.ipresas.upv.es/abstract_E.html)

This document should be attached and sent by email to [jecasrod@aaa.upv.es](mailto:jecasrod@aaa.upv.es) (Att: Jessica Castillo).

Please **note**, that Forum and Benchmark-Open Session have different templates.

## Benchmark Solutions: Instructions

**DEADLINE FOR BW SOLUTIONS TO THEMES A, B AND C: SEPTEMBER 15, 2011**

Solutions for the different BW themes (A, B or C) should be submitted by e-mail to the Organising Committee, using the template given in the following link:

[http://www.ipresas.upv.es/soluciones\\_E.html](http://www.ipresas.upv.es/soluciones_E.html)

The report should be attached and sent by email to [jecasrod@aaa.upv.es](mailto:jecasrod@aaa.upv.es) (Att: Jessica Castillo).

## Registration: Instructions

The 3<sup>rd</sup> International Week (3IWRDD) includes two main events: 3<sup>rd</sup> International Forum on Risk Analysis, Dam Safety, Dam Security, and Critical Infrastructure Management, and, the 11<sup>th</sup> ICOLD Benchmark Workshop on Numerical Analysis of Dams. There are also two additional activities: a practical course on Risk Management Models and a technical tour to visit Tous Dam.

You can make the registration for each event separately (please note that technical tour and practical course will be conducted on October 19, simultaneously; consequently, you can only register to one of these two activities).

The registration for the whole 3<sup>rd</sup> International Week (3IWRDD) has a particular fee (495 €), including Forum and Benchmark, as well as one of the two additional activities on October 19, 2011.

Fees include: attendance to the different sessions, proceedings, coffee-breaks, lunches and scheduled dinners.

Please register as early as possible to take advantage of discounted prices (10%) before September 1, 2011. Those participants who need to apply for a visa should begin the visa application process as soon as possible.

Students of PhD or Master programmes of the Polytechnic University of Valencia will have a 50% discount.

### PLEASE NOTE THAT:

Accompany person's programme is not going to be offered during the 3<sup>rd</sup> International Week.

At least one author should be registered to include abstracts and full papers in the Forum or Benchmark proceedings.

## Accommodation

The 3<sup>rd</sup> International Week on Risk Analysis, Dam Safety, Dam Security, and Critical Infrastructure Management (3IWRDD) will be held in the city of Valencia (Spain). Valencia is located in the East coast, about 352 km east of Madrid and 350 km south of Barcelona. Valencia has around 800,000 inhabitants and it is the third largest city in Spain. It is worldwide known for its modern and contemporary architecture (e.g., City of Arts and Sciences) and its cultural heritage. Recently, it has held several international events such as the 32<sup>nd</sup> America's Cup Edition and the F1 Grand Prix of Europe.



Ciudad de las Artes y las Ciencias

Accommodation can be booked through the travel agency BCD TRAVEL ([upv@bcdtravel.es](mailto:upv@bcdtravel.es)). This agency offers guarantee prices with several hotels in Valencia, such as:

**SH VALENCIA PALACE 5\*** <http://www.hotel-valencia-palace.com>

**BARCELO VALENCIA 4\*** <http://www.barcelovalencia.com>

**ABBA ACTEON 4\*** <http://www.abba-acteonhotel.com>

**RENASA 3\*** <http://www.hotel-renasa.com/>

For more information, please check the document "3IWRDD - INFORMATION - ACCOMMODATION" available in [www.ipresas.upv.es](http://www.ipresas.upv.es)

For more information on Valencia you can visit <http://www.turisvalencia.es/>



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## Venue

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Valencia (Spain)

## Steering Committee

Prof. Ignacio Escuder-Bueno, Chair  
*Polytechnic University of Valencia (UPV, Spain)*

Dr. Enrique Matheu, Forum Co-Chair  
*U.S. Department of Homeland Security (USA)*

Dr. José Polimón, Benchmark Workshop Co-Chair  
*Spanish Committee on Large Dams (SPANCOLD)  
and European Club of ICOLD.*

## Contact

### Prof. Ignacio Escuder-Bueno

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## FOR ADDITIONAL INFORMATION:

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Registration and accommodation:  
[www.ipresas.upv.es](http://www.ipresas.upv.es)



## Organizing Committee FORUM

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