

FINAL BULLETIN
OCTOBER 3, 2011

October 17-21, 2011. Valencia, Spain. www.ipresas.upv.es



Venue

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

(See page 8)

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€

50% Discount for UPV PhD and Master students

FOR ADDITIONAL INFORMATION:
Ms. Jessica Castillo-Rodríguez (UPV)
E-mail: jecasrod@upvnet.upv.es

Further information in:
www.ipresas.upv.es

OCTOBER 17 - 18

3RD 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

11TH ICOLD BENCHMARK WORKSHOP ON
NUMERICAL ANALYSIS OF DAMS

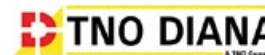
CO-ORGANIZERS:



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COLLABORATING FIRM:



SPONSORING ENTITY:



COLLABORATING ENTITY:



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 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

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:

3rd International Forum on Risk Analysis, Dam Safety, Dam Security, and Critical Infrastructure Management

Technical Tour / Practical Course

11th 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 National Committee on Large Dams (SPANCOLD)



Sponsors:



Collaborating Firm:



Sponsoring Entity:



Collaborating Entity:



AGENDA Monday, October 17

08:00 - 18:30	Registration	08:00 - 09:00	Posters
09:00 - 11:00	3IWRDD and Forum Opening Ceremony	by IGNACIO ESCUDER , Polytechnic University of Valencia "From Dam Safety to Critical Infrastructure Management. A Risk Analysis Inspired Journey" W. CRAIG CONKLIN , Department of Homeland Security, USA "Role and importance of public-private partnerships in security and protection efforts"	
11:00 - 11:30	Coffee break*		
11:30 - 14:00	Session I CRITICAL INFRASTRUCTURE MANAGEMENT	chair MASSIMO MEGHELLA , RSE Milano, Italy	
11:30 - 11:40	Chair Address Session I		
11:40	Special Lecture	1. JOSÉ IGNACIO CARABIAS , National Centre for the Protection of Critical Infrastructure (CNPIC) "Critical Infrastructure Protection - The Spanish Model" 2. IÑIGO LOSADA , University of Cantabria "Risk Evaluation in infrastructures due to the effect of climate change and tsunamis"	
	Open papers	Papers – See details in the Scientific Programme	
14:00 - 15:00	Lunch break**		
15:00 - 18:30	Session II RISK ANALYSIS	chair PEDRO MORENO , Duero River Authority	
15:00 - 15:10	Chair Address Session II		
15:10	Special Lecture	1. GREGORY BAECHER , University of Maryland "Learning from large-systems risk assessments after Katrina" 2. DANIEL SANZ , Duero River Authority "Lessons from full quantitative risk assessment of a dam under construction"	
	Open papers	Papers – See details in the Scientific Programme	
16:40 - 17:00	Coffee break		
17:00	Special Lecture		
	Open papers	Papers – See details in the Scientific Programme	

Tuesday, October 18

08:00 - 18:30	Registration	
09:00 - 14:00	Session III DAM SAFETY	chair ARTURO GIL , Iberdrola
09:00 - 09:10	Chair Address Session III	
09:10	Special Lecture	1. ROSA XUCLÁ , Ministerio de Medio Ambiente, Medio Rural y Marino "New Spanish Dam Safety Guidelines. Updated Draft" Papers – See details in the Scientific Programme
	Open papers	
11:00 - 11:30	Coffee break***	
11:30	Special Lecture	2. JOSE LUIS UTRILLAS , Júcar River Authority "Dam Safety in the Júcar River Authority Portfolio" Papers – See details in the Scientific Programme
	Open papers	
14:00 - 15:00	Lunch break	
15:00 - 17:45	Session IV DAM SECURITY	chair ENRIQUE MATHEU , Department of Homeland Security, USA
15:00 - 15:10	Chair Address Session IV	
15:10	Special Lecture	1. ANTONIO JIMENEZ , Nuclear Safety Council "Analysis of Floods as Extreme Events in Spanish Nuclear Plants" Papers – See details in the Scientific Programme
	Open papers	
16:20 - 16:40	Coffee break	
16:40	Special Lecture	2. EDWARD DRUSINA and ROBERTO F. SALMON , IBWC COMMISSIONERS (USA-MEXICO) "Current binational management of critical infrastructure along the US and Mexico border during tumultuous times" Papers – See details in the Scientific Programme
	Open papers	
17:45 - 18:45	Round Table	chair LIANA ARDILES , Spanish Office of Climate Change co-chair DAVID BOWLES , Utah State University, USA
18:45 - 19:00	Closing Ceremony	
20:30	Forum Dinner	

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€

50% discount for UPV PhD and Master students

Registration
www.ipresas.upv.es

* By kind courtesy of IIAAMA
 ** By kind courtesy of ETSICCP
 *** By kind courtesy of DEPHMA

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3rd International Forum on Risk Analysis, Dam Safety, Dam Security, and Critical Infrastructure Management

Technical Tour / Practical Course

11th ICOLD Benchmark Workshop on Numerical Analysis of Dams

Department of Homeland Security (DHS), United States



Confederación Hidrográfica del Júcar



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Spanish National Committee on Large Dams (SPANCOLD)



Collaborating Firm: **TNO DIANA**

Sponsoring Entity:



Collaborating Entity:



Wednesday, October 19

Technical Tour		Course
08:00 Leave from UPV	09:00 - 10:00	Registration
09:00 Tous Dam Visit	10:00 - 11:30	Course "Risk Management Models" Part 1
	11:30 - 12:00	Coffee-break
13:00 Lunch	12:00 - 14:00	Course "Risk Management Models" Part 2
	14:00 - 15:00	Lunch
16:00 Arrive in Valencia	15:00 - 16:30	Course "Risk Management Models" Part 3
	16:30 - 17:00	Coffee-break
	17:00 - 18:00	Course "Risk Management Models" Part 4

See course details on page 6

Thursday, October 20

08:00 - 17:00	Registration	
09:00 - 11:00	Opening Ceremony 11 th ICOLD BW	by ALAIN CARRERE , Coyne et Bellier, France <i>"The importance of numerical modelling on dam engineering"</i> JOSÉ POLIMÓN , Spanish National Committee on Large Dams IGNACIO ESCUDER , Polytechnic University of Valencia <i>"New challenges for ICOLD Committee A - Committee on Computational Aspects of Analysis and Design of Dams"</i>
11:00 - 11:30	Coffee break	
11:30 - 14:00	Session Theme A "Effect of Concrete Swelling"	chair CHRISTINE NORET , Coyne et Bellier, France
14:00 - 15:00	Lunch break	
15:00 - 15:30	Special Lecture	EUGENIO OÑATE , International Center for Numerical Methods in Engineering (CIMNE) <i>"Advance in development of particle-based methods and finite element methods for fluid-soil-structure interaction problems"</i>
15:30 - 16:00	Special Lecture	CAMILO MARULANDA , INGETEC (Colombia) <i>"Behavior and analysis of CFRDs – a follow up of the 10th ICOLD Benchmark Workshop"</i>
16:00 - 16:30	Special Lecture	DEREK SAKAMOTO , British Columbia Hydro, Canada <i>"A Case Study in Loss of Life Risk Assessment for Dam Facilities Using a Simulation Model"</i>
16:30 - 17:30	Session Theme B "Overtopping and seepage evolution"	chair ANTONIA LARESE , International Center for Numerical Methods in Engineering (CIMNE)
20:30	BW Dinner	

Friday, October 21

08:00 - 17:00	Registration	
09:30 - 11:00	Session Theme C "Probability of failure and safety coefficient"	chair LUIS ALTAREJOS , Polytechnic University of Valencia
11:00 - 11:30	Coffee break	
11:30 - 14:00	Session Theme D "Open Technical Session"	chair GUIDO MAZZA , RSE Milano, Italy
14:00 - 15:00	Lunch break	
15:00 - 17:00	Round Table	chair IGNACIO ESCUDER , Polytechnic University of Valencia

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Sponsors:



Collaborating Firm:



Sponsoring Entity:



Collaborating Entity:



practical course "RISK MANAGEMENT MODELS"

Wednesday, October 19

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 includes two practice sessions where complete risk calculations will be carried out: one for the hydrologic safety of a dam and another one for the flood risk in an urban area. The software used in the practice sessions will be made available to participants.

The course will be conducted in two different groups: English and Spanish. See next the planned schedule.

Armando Serrano
CTO, iPresas
www.ipresas.com

Registration

www.ipresas.upv.es/inscripcion_E.html

Registration fees

Practical course: 125€

50% discount for UPV PhD and

Tous Dam technical tour: 125€

Master students

Course schedule

09:00 - 10:00	Registration
10:00 - 11:30	Course "Risk Management Models" Block 1
11:30 - 12:00	Coffee-break
12:00 - 14:00	Course "Risk Management Models" Block 2
14:00 - 15:00	Lunch
15:00 - 16:30	Course "Risk Management Models" Block 3
16:30 - 17:00	Coffee-break
17:00 - 18:00	Course "Risk Management Models" Block 4

PRACTICAL COURSE "RISK MANAGEMENT MODELS"

BLOCK 1

- RISK INFORMED INFRASTRUCTURE SAFETY MANAGEMENT
- UNDERSTANDING THE ARCHITECTURE OF RISK MODELS

BLOCK 2

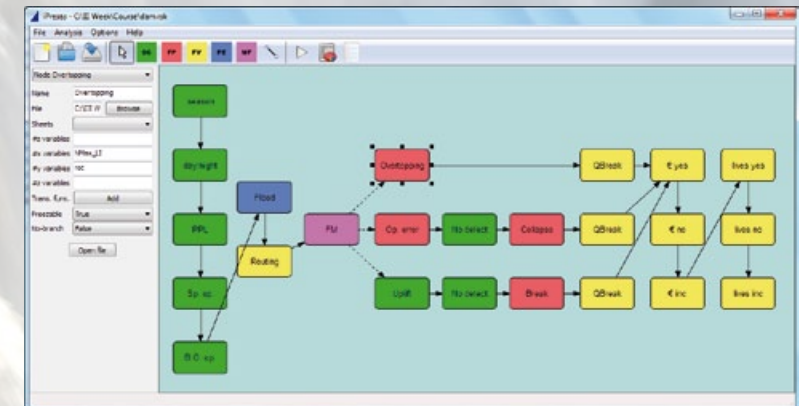
- HYDROLOGIC SAFETY EVALUATION OF DAMS WITH SIMPLIFIED RISK MODELS (PRACTICE SESSION)

BLOCK 3

- FLOOD RISK ANALYSIS IN URBAN AREAS (PRACTICE SESSION)

BLOCK 4

- DECISION SUPPORT AND EVALUATION OF RISK REDUCTION MEASURES IN A PORTFOLIO OF DAMS



SPONSORS

Sponsorship categories:

Level A - 5.000 €

Two free registrations for the 3IWRDD and stand, logo as Sponsor Level A

Level B - 2.500 €

Two free registrations for Forum or Benchmark and stand during 2 days of the 3IWRDD, logo as Sponsor Level B

Collaboration with the 3IWRDD - 600 €

Logo as Entity in collaboration with the 3IWRDD organization

FOR FURTHER INFORMATION: jecasrod@upvnet.upv.es

Registration: Instructions

The 3rd International Week (3IWRDD) includes two main events: 3rd International Forum on Risk Analysis, Dam Safety, Dam Security, and Critical Infrastructure Management, and the 11th 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 3rd 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.

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 3rd International Week. However, accompanying persons will be able to attend the Forum and BW dinners. Registration in advance is required (please find further details in www.ipresas.upv.es "3IWRDD Evening Events")

Cancellation policy: No taxes will be refunded for cancellations from October 7 on.

Accommodation

The 3rd 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 32nd America's Cup Edition and the F1 Grand Prix of Europe.



City of Arts and Sciences

Accommodation can be booked through the travel agency BCD TRAVEL (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>

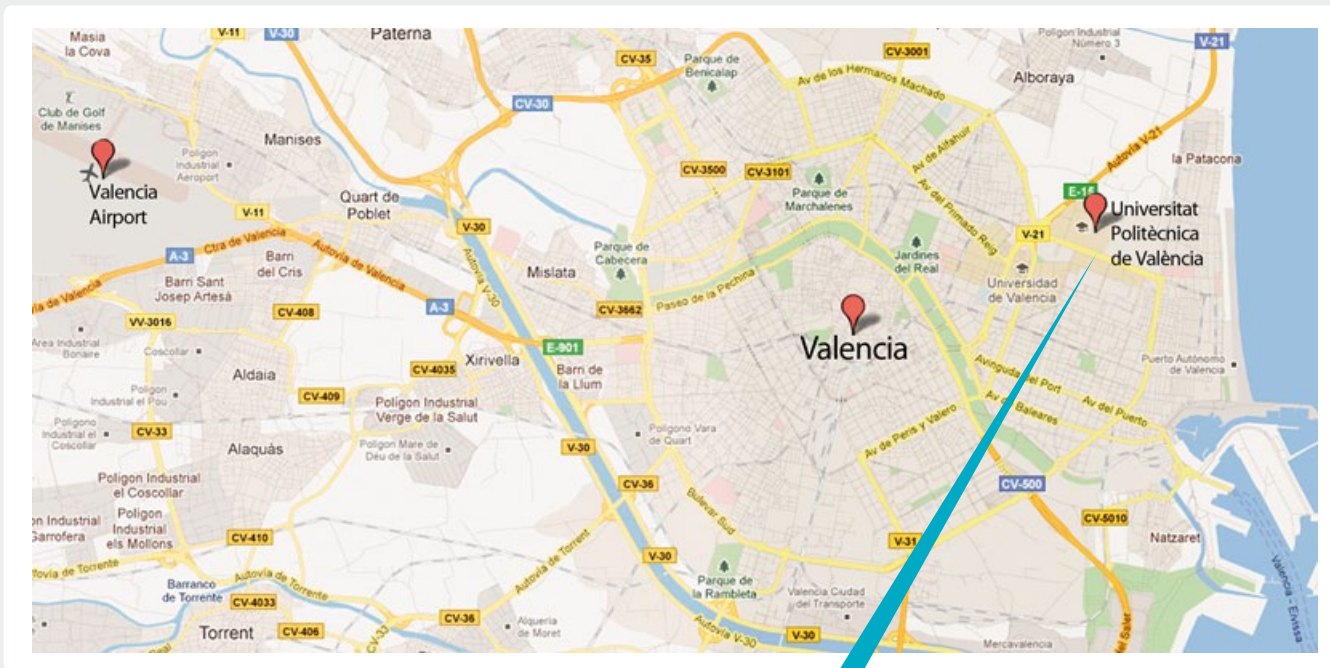
For more information, please check the document "3IWRDD - INFORMATION - ACCOMMODATION" available in www.ipresas.upv.es/11semana_E.html

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



October 17-21, 2011. Valencia, Spain. www.ipresas.upv.es

How to get there



Venue

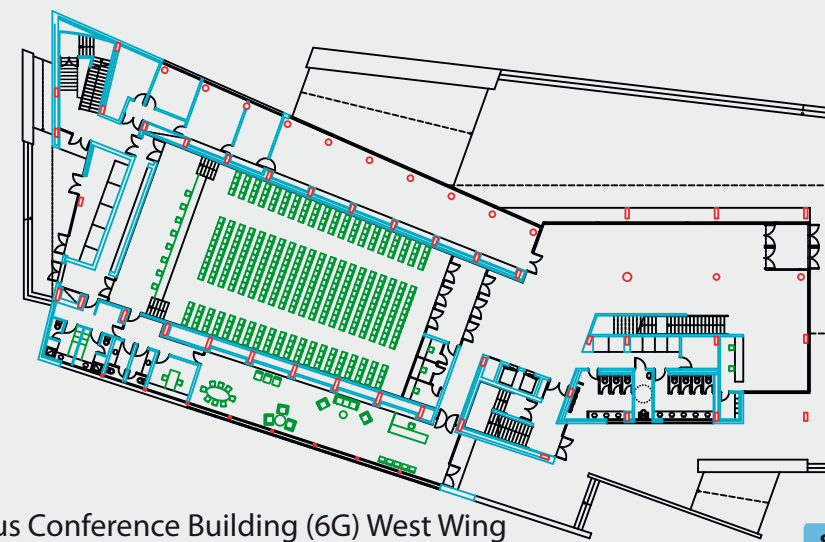
Polytechnic University of Valencia (UPV)
NEXUS Conference Building (6G)
Camí de Vera s/n, 46022
Valencia (Spain)



Nexus Conference Building (6G)



Nexus Conference Building (6G) location on UPV Vera Campus map



Nexus Conference Building (6G) West Wing

Social Events

Tuesday, October 17

Forum Dinner

Time: 20:30h

Venue: Ayre Hotel Astoria Palace

Address: Plaza de Rodrigo Botet 5,
46002 Valencia



Wednesday, October 19

Lunch during Technical Tour

Time: 14:00h

Venue: Restaurant L'Establiment

Address: El Palmar, Valencia.



Registration in advance will be required to attend both 3IWRDD evening events!

Please confirm registration for the Forum Dinner up to **October 12**, 2011 in this link: DOODLE - POLL "A":

<http://www.doodle.com/wc6ynrc47m8iqcne>

Please confirm registration for the 11th ICOLD BW Dinner up to **October 12**, 2011 in this link: DOODLE - POLL "B":

<http://www.doodle.com/3m8sgvbak6fehhyxp>

Accompanying person participation at Forum or BW dinner (€50,- p.p.). Please contact us for further details: jecasrod@upvnet.upv.es

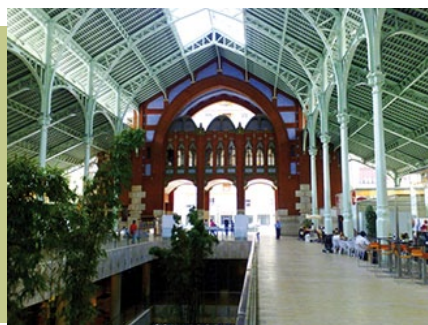
Thursday, October 20

11th ICOLD Benchmark Workshop Dinner

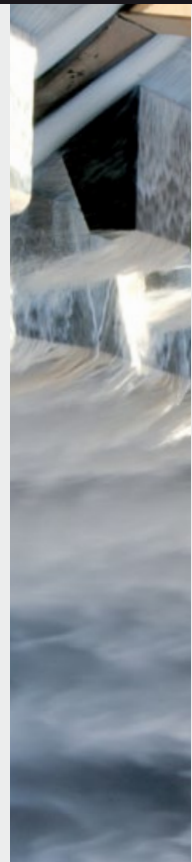
Time: 20:30h

Venue: Restaurant Bamboo de Colón

Address: Colón Market Building (basement),
Calle Jorge Juan 19,
46004 Valencia



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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
Polytechnic University of Valencia (UPV)
Institute of Water Engineering and Environment (IIAMA)
Camí de Vera, s/n 46022 Valencia (Spain)
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Fax: + 34 96 387 76 18

FOR ADDITIONAL INFORMATION:
Ms. Jessica Castillo-Rodríguez (UPV)
E-mail: jecasrod@upvnet.upv.es

Further information in:
www.ipresas.upv.es

Organizing Committee FORUM

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Matheu, Enrique (USA), Co-Chair
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Ardiles, Liana (Spain)
Aviñó, Mercedes (Spain)
Bonet, Federico (Spain)
Gil, Arturo (Spain)
González, Javier (Spain)
Meghella, Massimo (Italy)

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Carrère, Alain (France)
de Cea, Juan Carlos (Spain)
Larese, Antonia (Spain)
Mañueco, Gabriela (Spain)
Mazza, Guido (Italy)
Noret, Christine (France)

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Bowles, David (USA)
Cifres, Enrique (Spain)
Fernández, Ricardo (Spain)
Fleitz, Jürgen (Spain)
Fry, Jean-Jacques (France)
Hijos, Francisco (Spain)
Isander, Anders (Sweden)
Jonkman, Sebastian (Netherlands)
Knoblauch, Helmut (Austria)

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Dakoulas, Panos (Greece)
de Blas, Jesús (Spain)
Estaire, José (Spain)
Fanelli, Michele (Italy)
Glagovsky, Vyacheslav (Russia)
Gunn, Russell M. (Switzerland)
Hassanzadeh, Manochehr (Sweden)
Marco, Carlos (Spain)

Landín, Rafael (Spain)
Macián, Javier (Spain)
Marcano, Arturo (Venezuela)
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Rocha Afonso, José (Portugal)
Sánchez, Javier (Spain)
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Utrillas, José Luis (Spain)

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Mira, Pablo (Spain)
Popovici, Adrian (Romania)
Saletе, Eduardo (Spain)
Sheng Hong, Chen (China)
Tancev, Ljubomir (F.Y.R.Macedonia)
Uchita, Yoshihisa (Japan)
Varpasuo, Pentti (Finland)
Zenz, Gerald (Austria)

3RD INTERNATIONAL FORUM ON RISK ANALYSIS, DAM SAFETY,
DAM SECURITY AND CRITICAL INFRASTRUCTURE MANAGEMENT



Homeland Security

OCTOBER 17 - 18

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



MINISTERIO DE MEDIO AMBIENTE, Y MEDIO RURAL Y MARINO

CONFEDERACIÓN HIDROGRÁFICA DEL JÓCAR

OCTOBER 19

11TH ICOLD BENCHMARK WORKSHOP ON
NUMERICAL ANALYSIS OF DAMS



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