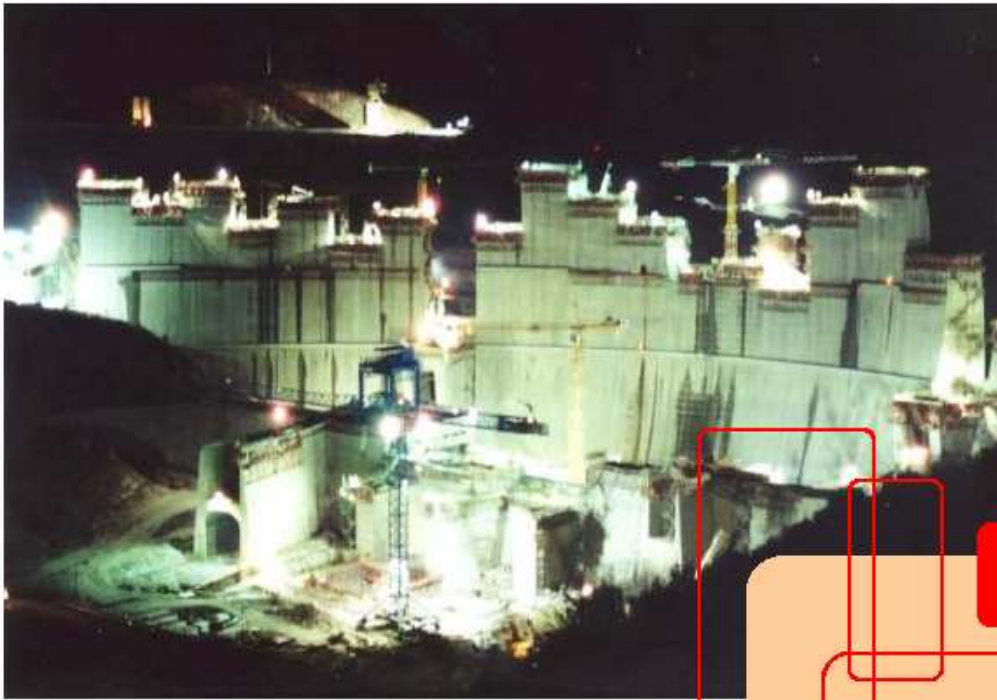


5th International Conference on
DAM ENGINEERING

14 - 17 February 2007
Congress Centre of LNEC
Lisbon, Portugal



Alqueva Dam, Alentejo, Portugal

Preliminary Program

Organizers:



LABORATÓRIO NACIONAL
DE ENGENHARIA CIVIL



CI-PREMIER

Co-sponsors:



EMPRESA DE
DESENVOLVIMENTO
E INFRA-ESTRUTURAS
DO ALQUEVA, S.A.



Preliminary Program

5th International Conference on
DAM ENGINEERING

General Program

	Wednesday 14th February	Thursday 15th February	Friday 16th February	Saturday 17th February
8:00 – 9:00	-	Registration	-	Technical Visit
9:00 – 9:30		Opening Session	Plenary Lectures	
9:30 – 10:45		Plenary Lectures		
10:45 – 11:15		Coffee Break	Coffee Break	
11:15 – 13:00		Parallel Sessions	Parallel Sessions	
13:00 – 14:30		Lunch	Lunch	
14:30 – 16:15	Registration	Parallel Sessions	Parallel Sessions	
16:15 – 16:45		Coffee Break	Coffee Break	
16:45 – 18:30		Parallel Sessions	Parallel Sessions	
18:30 – 19:00	Reception	Bus leave to Banquet	Closing Session	
19:00 – 19:30				
19:30 – 22:30	-	Banquet	-	
22:30 – 23:30		Bus leave to Hotel		

Preliminary Program

Wednesday, 14th February

14:30 – 18:30	REGISTRATION
18:30 – 19:30	RECEPTION HALL OF THE CONGRESS CENTRE

Thursday, 15th de February

08:00 – 09:00	REGISTRATION
09:00 – 09:30	OPENING SESSION Auditorium
09:30 – 10:45	PLENARY LECTURES Auditorium
10:45 – 11:15	COFFEE BREAK
11:15 – 13:00 Auditorium Small Auditorium Room 2	PARALLEL SESSIONS Monitoring and Surveillance Spillways Embankment Dams
13:00 – 14:30	LUNCH
14:30 – 16:15 Auditorium Small Auditorium Room 2	PARALLEL SESSIONS Monitoring and Analysis Spillways Concrete Face Rockfill Dams
16:15 – 16:45	COFFEE BREAK
16:45 – 18:30 Auditorium Small Auditorium	PARALLEL SESSIONS Methods of Analysis and Design of Dams Rolled Compacted Concrete Dams

Friday, 16th February

09:00 – 10:45	PLENARY LECTURES Auditorium
10:45 – 11:15	COFFEE BREAK
11:15 – 13:00 Auditorium Small Auditorium Room 2	PARALLEL SESSIONS Methods of Analysis and Design of Dams Hydraulic: Spillways and General Aspects Rockfill dams

13:00 – 14:30	LUNCH
14:30 – 16:15	PARALLEL SESSIONS
Auditorium	Rolled Compacted Concrete Dams
Small Auditorium	Scour of Rock: Plunge Pools and Sedimentation
16:15 – 16:45	COFFEE BREAK
16:45 – 18:30	PARALLEL SESSIONS
Auditorium	Hydropower Projects, Warning Systems and Dam Legislation
Small Auditorium	Dam Foundation

Preliminary Program

5th International Conference on
DAM ENGINEERING

Thursday, 15th February

08:00 – 09:00 REGISTRATION

09:00 – 09:30 OPENING SESSION
AUDITORIUM

09:30 – 10:45 PLENARY LECTURES
Auditorium
Chairman: Carlos Pina, Portugal

E. Maranha das
Neves *Rockfill: new developments*
Neves, E. M.

Gao Lin *On the dynamic stability of potential sliding mass during earthquakes*
Gao Lin, Jianquan Wang, Zhiqiang Hu and Jun Liu

10:45 – 11:15 COFFEE BREAK

11:15 – 13:00 PARALLEL SESSIONS
Auditorium **Monitoring and Surveillance**

Franco Robotti *Latest monitoring techniques for dam control*
Robotti F

Julián Portillo
Aguilar *Automatic system for the management of monitoring information in 16 dams*
in the South of Spain
Juan de Dios Gallego, Emiliano Martinez Olias, Diego del Saz Lopez and
Aguilar, Julián Portillo

Aldo Marcello *The importance of monitoring in the analysis of operating dams*
Marcello Aldo

Henrique S Silva *Structural Surveillance of Cahora Bassa Dam*
Carvalho EF, Tembe IM and Silva H S

Juan Mata *Application of artificial neural networks to dam safety control*
Mata J, Eliane Portela and Joaquim Dias

A Berberan *Enhancing on-site dams visual inspections*

Small Auditorium **Spillways**

- F. Lempérière *Dam safety and low cost spillway designs
Lempérière F and Vigny J P*
- C Cortes *Hydraulic Operation of the Spillway on "Aguamilpa" Hydro-Electric Power
Plant
Marengo and Cortes C*
- Farhang Danesh-
mand *The Hydraulic Test of the Spillway of the Sivand Dam
Daneshmand F, E Azadi Yazdi & T. Liaghat*
- E Gonzalez *On-Tunnel Spillway Design on Hydraulic Model of "La Yesca" Hydroelectric
Project
Gonzalez E and Camargo J*
- Farhang Danesh-
mand *Numerical Investigation and Hydraulic Model Test of the Bottom Outlet of
Vaniar Dam
Daneshmand F and Bazargan Y*

Room 2 **Embankment Dams**

- A. Veiga Pinto *Nacala Dam. Structural safety assessment and corrective measures
Veiga Pinto A*
- Laura Caldeira *New Proposal For Portfolio Safety Assessment Of Embankment Dams
Caldeira L, Pimenta L and Silva Gomez A*
- Andrea Brito *Compaction control of soil-rock mixtures at Odelouca Dam by vibratory
compaction tests and rammer compaction tests
Brito A and Caldeira L*
- R Minasyan *The rational technology on research of an actual condition of earth dams
related to their safe operation
R.Minasyan, S. Zeizafun and S. Minasyan*
- Sajjad Kazempoor *Finite Element modeling and back analysis of Gavoshan Dam during con-
struction and pondage intervals
MAHBOUBI, Ahmad reza, Aminpoor, Mohammad and Kazempoor, Sajjad*
- Stella Pytharouli *Kremasta Dam (Greece): Long-term behaviour and performance of the high-
est earthfill dam in Europe
Pytharouli S, Kontogianni V., Psimoulis P. and Stiros S.*

13:00 – 14:30 LUNCH

14:30 – 16:15
Auditorium **PARALLEL SESSIONS**
Monitoring and Analysis

- Antonella Frigerio *Histride: an integrated software environment for the diagnosis of large dams via modal identification*
Frigerio A and E Bon
- Paulo Mendes *Experimental dynamic behaviour characterization of concrete dams based on continuous monitoring*
Mendes, P, Oliveira, S, Garrett, J.A. and Costa C.O
- Stephane Bonelli *The impulse response function analysis of pore pressures monitoring data*
Bonelli S and Radzicki K
- José Muralha *Contribution of incremental extensometers In the monitoring of concrete dam foundations*
Muralha, José and de Castro, António Tavares
- Maria Luísa Braga Farinha *Analysis of seepage in the foundation of Pedrógão Dam*
M L Braga Farinha, de Lemos J V and de Castro A T
- Shrirang Nivrutti Tande *Seismic analysis of gravity dam with opening*
Tande S N and Patil S A

Small Auditorium **Spillways**

- Ebrahim Jabbari *The use of flood forecasting in optimization of spillway capacity*
Maryam Ghaffari Dolama and Jabbari E
- Nasser Talebbeydokhti *Numerical turbulent simulation of labyrinth spillways and corresponding discharge coefficients*
Talebbeydokhti N and Zahraeefard V
- Lúcia T Couto *A new solution for a concrete spillway over a rock fill dam. Hydraulic model study of Barriga dam in Spain*
Couto, Lúcia; Pinto Magalhães, A; Toledo, M. A. and Moya, R. M.
- J Juanche *Instrumentation alternatives on spillways*
Juanche J and Cortes C
- Sebastien Erpicum *Dam rehabilitation study with procees oriented numerical flow models*
Erpicum S, Archambeau P., Detrembleur, S., Dewals B. and PirotonI M.

Room 2 **Concrete Face Rockfill Dams**

- Nelson Pinto *A challenge to very high CFRD Dams: Very high concrete face compressive stresses*
Pinto N

Anna Ghannad	<i>Construction of Siah Bishe Concrete Face Rockfill Dam (CFRD)</i> <i>Modarress L and Ghannad Z</i>
Juan de Dios Aleman Velásquez	<i>El Cajon dam, Analyses of the behavior during construction and first filling</i> <i>Aleman Velasquez, J D and Lesso S V</i>
Hamid Fallah	<i>Rockfill shear strength parameters for Siah Bishe Concrete Face Rockfill Dams (CFRD)</i> <i>Fallah H</i>
16:15 – 16:45	COFFEE BREAK
16:45 – 18:30 Auditorium	PARALLEL SESSIONS Methods of Analysis and Design of Dams
Guido Mazza	<i>The contribution of ICOLD "Computations & Dams" technical Committee to computational aspects of dam analysis and design</i> <i>Mazza G and Carrere A</i>
D Silva Matos	<i>Arch dam design of the Baixo Sabor upstream scheme</i> <i>Silva Matos D, Paixão, J and Antunes, N</i>
Gilberto Silva Monteiro	<i>Main design features of the downstream gravity dam of Baixo Sabor Monteiro, Gilberto Silva, Fernandes, Irene Ramos and Silva Matos, D</i>
Hui PENG	<i>Study on the optimization model of arch dam closure process under construction and its impacts on river ecosystems</i> <i>Peng Hui, Liu De-fu and Tian Bin</i>
Gabriella Vaschetti	<i>Rehabilitation of Covão do Ferro Masonry Dam</i> <i>Scuero AA, Vale J M, Vaschetti G, Quintela A, Ribeiro da Silva A, Ramos J M and Sá da Costa A</i>
Daliri Massoud	<i>Evaluation Behavior and Safety Conditions of Shirvan Arch Dam Subjected to movement of left abutment Fault</i> <i>Massoud, Daliri</i>
Small Auditorium	Rolled Compacted Concrete Dams
Douglas M Moser	<i>Data acquisition and thermal modelling of Fundao roller compacted dam (RCC)</i> <i>L A de Lacerda, Moser D E and Denise Araújo Vieira Krüger</i>
Douglas M Moser	<i>Temperature and strain measurements in RCC dams using fiber optics instrumentation</i> <i>Moser D E, Aufleger M, Hoepffner R, V Neisch, Soares M A and Filho J M,</i>
Basavaraj Katageri	<i>Behavior and analysis of compaction characteristics of high paste roller compacted concrete mixes</i> <i>Katageri, Basavaraj, P. V. Sivapullaiah and R. N. Herkal,</i>

- Sheng-hong Chen *Composite element method for the temperature field analysis of layered roller compacted concrete (RCC)*
Sun Nai-bo, Xu Qing and Chen Sheng-hong
- João Luis de Abreu Pinto *Mix Design Methods Comparison for conventional self compacting and high strength concrete*
João Luis de Abreu Pinto, Maurice A Traboulsi, Reynaldo M Bittencourt,, Rubens M Bittencourt+, Denise Molin and Andre L B Geyer
- Graça Maria Moura *Thermal and structural studies of the RCC downstream dam of Baixo Sabor*
Graça Maria Moura and Paulo Monteiro

Friday, 16th February

09:00 – 10:45 PLENARY LECTURES

Auditorium

Chairman: Carlos Pina, Portugal

J. Oliveira Pedro *Alqueva Dam. General Aspects of Design, Construction and Operation Pedro, O.J.*

Bayardo Materón *State of the Art of Compacted Concrete Face Rockfill Dams (CFRD) Materon B*

Paulo Cruz *Cracks and Flows in Concrete Face Rock Fill Dams (CFRD) Cruz PY and Freitas,MS Jr*

10:45 – 11:15 COFFEE BREAK

11:15 – 13:00 PARALLEL SESSIONS

Auditorium

Methods of Analysis and Design of Dams

Sheng-hong Chen *Finite element analysis of crack propagation at arch dam heel Wang Wei-ming and Chen Sheng-hong*

Ali Noorzad *Effect of alkali-aggregate reactions (AAR) in concrete dams using finite element method Moshtagha M, Noorzad A, and Ghaemiana M*

S Nanpazi *Study On design and executing of arched bridges in Karoon -3 dam S Nanpazi, M Mehdizadeh.A, M Mohammadi, and M Ghasabi.K*

M. Berra *A comparative study of the leaching behaviour of cement mortar and concrete under different accelerated test conditions Berra M, Faggiani G, Mangialardi T and Paolini A E*

Sheng-hong Chen *Composite Element Method for the Temperature Field Simulation of the Concrete Structures containing Cooling Pipes Xu Qing, Sun Nai-bo and Chen Sheng-hong*

Hakan SIRIN *Deformation Analysis of Thin Arch Dams Under Hydrostatic and Gravitational Forces By Using Triangular Stretched Plate Elements Sirin H*

Hamed Jahangiri *Study of New Methods for Restoration & Repair of Concrete Parts in Dams Jahangiri, H and Ettehad, R*

Small Auditorium **Hydraulic: Spillways and General Aspects**

António Pinheiro *Hydrodynamic forces on slabs of hydraulic jump stilling basins Pinheiro, A N, António C. Quintela and Carlos M. Ramos*

- Saied Saiedi *Experiences in design and construction of a hydraulic model for energy dissipation and erosion studies*
Saiedi S and Vallyutham K
- F J Ochoa Álvarez *Pressure Fluctuation in a Surge Tank with Different Arrangements on Hydraulic Model, of "Zimapán" Hydropower Plant*
H Marengo, Ochoa F and Cortes C
- Farhang Daneshmand *Hydraulic model test of the bottom outlet of Sivand Dam*
Daneshmand F, Azadi Yazdi E and Y. Bazargan Lari
- Oscar Ruiz Pena *Operation of impounding work on hydraulic model of "Atemajac" Hydropower Plant*
Ruiz O R and Camargo J

Room 2 **Rockfill dams**

- A Veiga Pinto *Influence of the type of rock on mechanical properties of rockfill*
Veiga Pinto A
- Alex Martins Calcina *Irapé Dam - Design, Construction and Behaviour*
Alex Martins Calcina, Pedro Lagos Marques Filho, Jânder de Faria Leitão, Paulo Teixeira da Cruz and Romildo Dias Moreira Filho
- Ljubomir Tancev *Three Dimensional Analisis of Kozyak Dam*
Tancev L, Kokalanov G, and Petkovski L
- James Yang *Analytical solutions of two-dimensional turbulent seepage in rock-fill dams*
Sundqvist P and Yang J

13:00 – 14:30 LUNCH

14:30 – 16:15 PARALLEL SESSIONS
Auditorium **Rolled Compacted Concrete Dams**

- Francisco Ortega *Roller-Compacted Concrete (RCC) Dams: Design Alternatives-Case study: Pedrogão RCC Dam (Portugal)*
Ortega S F
- Douglas M Moser *Research on the use of ultrasound technology in RCC layering control*
L.A.de Lacerda, A.C.M. Kormann, Moser D E and L.F.P. Oliveira
- Ali Roshani Mamaghani *Suggesting some strategies & analysis of the required preparations for seismic design of RCC & RMC Dams*
S.Salmani Milani, S.Ershadpour, A.Roshani Mamaghani and S.Mohammadi Hamidi,
- António Tavares de Castro *Analysis and Interpretation of Pedrógão Dam Behaviour during the First Filling of the Reservoir*
Castro A T, Batista A L and Serra C

Tim Griggs *Hydro Tasmania Consulting's Recent RCC Dam Experience*
Griggs T and Herweynen R

B L Medeiros, *Durability of RCC-Methods and fine content analysis*
Medeiros, B L, C.E. Michaud, A. M. Kormann and Moser, D E

Small Auditorium **Scour of Rock: Plunge Pools and Sedimentation**

Erik Bollaert *Constitutive modeling of rock scour by jet impingement*
Bollaert E and Schleiss A

Erik Bollaert *Scour prediction at Srisam Dam in India*
Bollaert E

George Annandale *Case study: RicoBayo dam scour analysis*
Annandale G and M.F. George

Anton Schleiss *State-of-the-Art of Rock Scour Technology - Part 1*
Schleiss A and Annandale G

George Annandale *State-of-the-Art of Rock Scour Technology - Part 2*
Schleiss A and Annandale G

16:15 – 16:45 COFFEE BREAK

16:45 – 18:30 PARALLEL SESSIONS
Auditorium **Hydropower Projects, Warning Systems and Dam Legislation (6)**

Manuel S. Oliveira *Baixo Sabor Hydraulic Project - Preliminary design of significant environmental mitigation and compensation measures*
Manuel S. Oliveira, J. Miguel Oliveira, Gilberto S. Monteiro & J. Dias Silva

Humberto Marengo *La Yesca, Mexico's new hydroelectric project*
H Marengo, E. Hernández and Salvador Aguirre Tello

A Silva Gomes *The functions of the technical manager of the dam operation according to the portuguese regulations for safety of dams*
Silva Gomes A

Teresa Viseu *Alqueva dam early warning system*
Viseu T. João Palma J and Oliveira Costa C

Ricardo Santos *Risk Analysis of Embankment Dams through FMEA Application to a Tailings Dam*
Santos R, Bilé Serra J and Caldeira L

Marcio Antonio Arantes Porto *Enterprise management models of electric energy generation: a study case on Furnas Centrais Elétricas SA*
Porto M A A

Small Auditorium **Dam Foundation**

- Henrique S Silva *The hydromechanical behaviour of Cahora Bassa dam foundation
Silva H S, Tembe IM and Carvalho EF*
- Mohammad Heidarzadeh *Technical Difficulties Associated with the Development of Karkheh Dam
Complementary Cut-off Wall
Mohammad Heidarzadeh, Faramarz Eslamian and Ali A. Mirghasemi*
- Mohammad Heidarzadeh *Prediction of Grout Take in Grouting Works at Karun III Dam Site
Mohammad Heidarzadeh and Hamid Reza Yaghooti*
- Agnieszka Rutecka *Clogging phenomenon - laboratory tests and numerical modeling
Agnieszka Rutecka and Z Kowalewski*
- Wei GAO *Search on critical slip surface of slope based on ant colony algorithm
Gao Wei*
- H R Yaghooti *Experiences Obtained from Drilling & Grouting Works Performed in El. 621
Gallery Located 40m underneath the Water Table of Karun-III Dam & HEPP
Yaghooti H R*