

12th ICOLD European Club Symposium 2023



Programme Oral Presentations 12th ICOLD European Club Symposium 2023

Tuesday 6th September and Thursday 7th September 2023

Congress Centre Kursaal Interlaken, Switzerland

| | | Chair / Speaker | duration |
|--|--|--------------------------------|----------|
| Session 1 | | | |
| Theme D: How to deal with ageing dams ? | | | |
| September 6, 2023 | | | |
| 10:30 - 12:00 | | | |
| Room Theatersaal | | | |
| 7 presentations, 10' each | | | |
| | Introduction | Chair: Marco Conrad | 2' |
| 124 | Arch dams: a new methodology to analyse the sliding stability between the dam and the foundation | Xavier Molin | 10' |
| 116 | Galens arch dam strengthening works | F. Andrian, Nicolas Ulrich | 10' |
| 109 | Spitallamm Arch Dam – Challenges Faced for Replacing the Existing Old Dam | Eliott Odermatt | 10' |
| | Q & A | | 7' |
| 114 | Concrete dams upgrading using IV-RCC | Francisco Ortega | 10' |
| 99 | Numerical modelling of the Pian Telessio dam affected by AAR | Riccardo Stucchi | 10' |
| 76 | The driving force of AAR – An in-situ proof | Rico Senti | 10' |
| 13 | Digital cloud-based platform to predict rock scour at high-head dams | Erik Bollaert | 10' |
| | Q & A | | 9' |
| | Wrap up | Chair: Marco Conrad | 2' |
| Session 2 | | | |
| Theme A: Dams and reservoirs for hydropower | | | |
| September 6, 2023 | | | |
| 10:30 - 12:00 | | | |
| Room Ballsaal | | | |
| 6 presentations, 10' each | | | |
| | Introduction | Chair: Jean-Jacques Fry | 2' |
| 46 | Drini River Cascade - Unique in Europe | A. Jovani | 10' |
| 74 | Collection and dissemination of knowledge on dams of Italy | Stefano Munari | 10' |
| 75 | Flood control across hydropower dams: The value of safety | Christina Ntemiroglou | 10' |
| | Q & A | | 12' |
| 92 | Swiss dam safety regulation: Framework, recent changes and future perspectives | Markus Schwager | 10' |
| 42 | Specialist grouting works in the renewal of Ritom HPP, Switzerland | Giovanna Lilliu | 10' |
| 117 | Wave return walls within the adapted freeboard design at dams | Max Hess | 10' |
| | Q & A | | 12' |
| | Wrap up | Chair: Jean-Jacques Fry | 4' |

Session 3

Theme D: How to deal with ageing dams ?

September 6, 2023

13:30 - 15:00

Room Theatersaal

7 presentations, 10' each

Introduction

Chair: Alfredo Granados 2'

| | | | |
|-----------|---|----------------------------|-----|
| 11 | Digitalization for a targeted and efficient dam management | Fulvio Besseghini | 10' |
| 17 | Lifetime analysis of the Sta. Maria arch dam behaviour | Marius Bühlmann | 10' |
| 21 | Dam Safety and Surveillance: Return of experience from the perspective of the Swiss Federal Authorities | Milaine Côté, Russell Gunn | 10' |
| | Q & A | | 7' |
| 68 | Potential failure mode analysis (PFMA) to deal with ageing and climate change affecting dams | Philippe Méan | 10' |
| 24 | Failures and incidents in Greek dams | George Dounias | 10' |
| 29 | A dam-foundation seismic interaction analysis method: development and first case studies | Giorgia Faggiani | 10' |
| 35 | The safety assessment of buttress, hollow gravity and multiple arch/slab dams. The contribution of numerical modeling | Antonella Frigerio | 10' |
| | Q & A | | 9' |
| | Wrap up | Chair: Alfredo Granados | 2' |

Session 4

Theme B: Dams and reservoirs for climate change adaptation

September 6, 2023

13:30 - 15:00

Room Ballsaal

7 presentations, 10' each

Introduction

Chair: Denis Aelbrecht 2'

| | | | |
|------------|--|------------------------|-----|
| 5 | Role of water storage reservoirs management and flood mitigation in climate change conditions | Tina Dašić | 10' |
| 33 | Guidelines for modelling dam safety adaptation to climate change | Javier Fluixa | 10' |
| 57 | PKW Spillways: An innovative, resilient and flexible solution from run-off river dams in plains to large dams in mountains suitable for climate change | Frederic Laugier | 10' |
| | Q & A | | 7' |
| 96 | Electronic monitoring of natural hazards prone reservoir regions and catchment areas of Alpine dams | Severin Staehly | 10' |
| 97 | Re-operationalization of dams to adapt to climate change in Romania | Daniel Gaftoi | 10' |
| 118 | Design values for dams exceeded: Lessons learnt from the flood event 2021 in Germany | Elena-Maria Klopries | 10' |
| 1 | CRHyME (Climatic Rainfall Hydrogeological Modelling Experiment): a versatile geo-hydrological model for dam siltation evaluation | Andre Abbate | 10' |
| | Q & A | | 9' |
| | Wrap up | Chair: Denis Aelbrecht | 2' |

Session 5

Theme C: Impact mitigation of dams and reservoirs

September 6, 2023

15:30 - 17:00

Room Theatersaal

7 presentations, 10' each

Introduction

Chair: Nina Humar 2'

| | | | |
|------------|--|--|-----|
| 10 | New Poutès dam (France): Innovative retrofitting to reconcile environment and hydropower | Julien Vermeulen, Thomas Barbieri | 10' |
| 16 | Fish passes on the Rhine River – Major structures at EDF Hydro plants to restore fish continuity | Mrs Guillan Brousse | 10' |
| 49 | Study on the sedimentation process in Boštanj reservoir, Slovenia | Mateja Klun | 10' |
| | Q & A | | 7' |
| 72 | Improving fish protection and downstream movement at the Maigrauge Dam (Switzerland) using an electric barrier | Anita Moldenhauer-Roth, Michael Müller | 10' |
| 78 | Revitalization of the Salanfe river (Valais, Switzerland): a multi-faced project | Marjorie Perroud | 10' |
| 100 | Assessing the Carbon Footprint of Pumped Storage Hydropower – a case study | Denis Aelbrecht | 10' |
| 119 | Storage tunnels to mitigate hydropeaking | Wolfgang Richter | 10' |
| | Q & A | | 9' |
| | Wrap up | Chair: Nina Humar | 2' |

Session 6

Theme A: Dams and reservoirs for hydropower

September 6, 2023

15:30 - 17:00

Room Ballsaal

7 presentations, 10' each

Introduction

Chair: Giovanni Ruggeri 2'

| | | | |
|------------|--|---------------------------------|-----|
| 51 | Photovoltaic on dams – Engineering challenges | Damodar Maggetti, Andrea Korell | 10' |
| 63 | Photovoltaics and hydropower – Potential study at Alpine reservoirs in Switzerland | Frederic Evers | 10' |
| 87 | Blasting excavation close to fresh Roller Compacted Concrete, in RCC Dam construction sites | Paolo Ruffato | 10' |
| | Q & A | | 7' |
| 95 | Châtelard basin storage expansion by making use of a spoil area | Helmut Stahl | 10' |
| 103 | An application of sophisticated FEM and simplified methods to the seismic response analysis of an asphalt-concrete core rockfill dam | Anton Tzenkov | 10' |
| 105 | Fulfilling pumped storage plants requirements with advanced geomembrane technology | Gabriella Vaschetti | 10' |
| 123 | Vianden Pumped Storage Plant - Large-Scale Shear Tests on Rockfill Material of the Upper Reservoir Ring-Dam | Christian Meyer | 10' |
| | Q & A | | 9' |
| | Wrap up | Chair: Giovanni Ruggeri | 2' |

Session 7**Theme D: How to deal with ageing dams ?**

September 7, 2023

8:30 - 10:05

Room Theatersaal

7 presentations, 10' each

Introduction

Chair: Laurent Mouvet 2'

| | | | |
|------------|---|-----------------------|-----|
| 6 | Safety of embankment dams in the case of upgrading the existing tailings storage facilities | Ljupcho Petkovski | 10' |
| 40 | Experimental investigation of the overtopping failure of a zoned embankment dam | Matthew Halso | 10' |
| 56 | Design concept for sustainable cut-off walls made of highly deformable filling materials | Fadi Haddad | 10' |
| | Q & A | | 7' |
| 70 | Breach Analysis of the Lozorno II. Dam | Tibor Mészáros | 10' |
| 37 | Rehabilitation and Upgrade of Old Small Dams | Brigitta Gander | 10' |
| 121 | Seismic analysis of old embankment dams: qualification of the Fr-Jp method | Moez Jellouli | 10' |
| 122 | The decommissioning of dams in Italy: the state of the art. | Guido Mazzà | 10' |
| | Q & A | | 9' |
| | Wrap up | Chair: Laurent Mouvet | 2' |
| | Special presentation of ICOLD Bulletin 195 on Cemented soil dams | Michel Lino | 5' |

Session 8**Theme C: Impact mitigation of dams and reservoirs**

September 7, 2023

8:30 - 10:00

Room Ballsaal

7 presentations, 10' each

Introduction

Chair: Anton Schleiss 2'

| | | | |
|-----------|--|-----------------------|-----|
| 14 | Bedrock scour prediction downstream of high head dams due to developed rectangular jets plunging into shallow pools | Adele Bosman | 10' |
| 22 | Efficiency evaluation and simulation of Sediment Bypass Tunnel operation: Case study Solis Reservoir | Sudesh Dahal | 10' |
| 53 | Submerged Wood Detection in a Dam Reservoir with a Narrow Multi-beam Echo Sounder | Koshiha Takahiro | 10' |
| | Q & A | | 7' |
| 58 | HYPOS – Sediment Management from Space | Marcelo Leite Ribeiro | 10' |
| 61 | Comprehensive assessment of sediment replenishment and downstream hydro-geomorpho-ecology, case study in the Naka River, Japan and the Buëch River, France | Jiaqi Lin | 10' |
| 66 | Dynamic Environmental Flows using hydrodynamic-based solutions for sustainable hydropower | Paolo Perona | 10' |
| 73 | Assessment of the hydromorphological effectiveness of sediment augmentation measures downstream of dams | Giovanni De Cesare | 10' |
| | Q & A | | 9' |
| | Wrap up | Chair: Anton Schleiss | 2' |

Session 9

Theme D: How to deal with ageing dams ?

September 7, 2023

10:30 - 12:00

Room Theatersaal

5 presentations, 10' each + special conclusions

Introduction

Chair: Gerald Zenz 2'

Jérôme Filliez, Nicolas Adam 10'

Ruben Sadei 10'

Edi Meier 10'

Q & A 5'

Franco Maugliani 10'

Rémy Tourment 10'

Q & A 6'

Chair: Gerald Zenz 2'

Felipe Lazaro 15'

2 Ageing dams in Switzerland: Feedbacks of several case studies

48 Experiences from inspections and controls on ageing penstocks of hydropower plants

69 GRIMONIT (GroundRiskMonitor) – an early warning system for difficult measurement conditions

79 Rehabilitation of the Pàvana Dam in Tuscany (IT) - Advantages from the use of BIM in the design of a complex hydraulic project

102 Flood protection levees – from an existing portfolio of old structures to safe and reliable protection systems

Q & A

Wrap up

Conclusion on "Ageing of dams"

Session 10

Theme B: Dams and reservoirs for climate change adaptation

September 7, 2023

10:30 - 12:00

Room Ballsaal

6 presentations, 10' each

Introduction

Chair: Maria Bartsch 2'

Alessandro Palmieri 10'

Jean-Louis Drommi 10'

Jonathan Fauriel 10'

Q & A 12'

Bettina Geisseler, Stéphane Giraud 10'

Louis Suchier 10'

Nicolas Manzini 10'

Q & A 12'

Chair: Maria Bartsch 4

9 Multipurpose dams – A European perspective

26 XFLEX HYDRO : extending operation flexibility at EDF-Hydro Grand Maison PSP

30 Additional water and electricity storage in the Swiss Alps: from studies of potential towards implementation

62 Enhancing Dam Safety through Contractual Strategies

85 How to evaluate arch dam's behaviour under increased thermal load such as heat waves and extreme cold

125 Inclinator monitoring of a dam during hot weather

Q & A

Wrap up