Dam Swelling Concrete 2017
Preliminary Program

Tuesday 13th June

Registration

Welcome address

International context

A Review of the Effectiveness of Remedial Measures to Manage AAR in Dams and Hydro Projects
Robin Charlwood (R. Charlwood & Associates) USA / Ian Sims (RSK Environmental Ltd) United Kingdom

Switzerland context
Francesco Amberg (Lombardi SA) / Raphaël Leroy (Alpiq) Switzerland

Physico-chemical mechanisms - Experimental test

Interactions between pore pressure and damage evolution in concrete deteriorated by alkali-silica reaction
Adrien Hilaire, Cyrille Dunand, Karen Scrivener. (EPFL) Switzerland / Alain Giorla (Oak.Ridge.National.Laboratory) USA

Concrete prism test with alkali-wrapping as a performance test
Kazuo Yamada (National Institute for Environmental Studies) Japan

Improving the prognosis of structures damaged by expansive concrete with physico-chemical mechanisms modeling
Stéphane Multon, Alain Sellier (LMDC-Toulouse University) / Etienne Grimal, Eric Bourdarot (EDF) France

Expansions in a concrete dam with bridge over spillway in south America
Ana Blanco, Sergio H.P. Cavalaro, Antonio Aguado (UPC) /Ignacio Segura (Smart Engineering SL) Spain./Luis Segura-Castillo (Univ la Rep) Uruguay

Can certain alkali minerals explain the slow reactivity of granitic aggregates in dams?
Antonio Santos Silva, Dora Soares (LNEC) / Isabel Fernades, Ana Rita Ferraz-(FCUL-Lisbon University) Portugal

Predicting Expansion in Large Concrete Dams
Thomas Michael. University New Brunschwick. Frederictown Canada

Experimental evidence for the link between aggregate degradation and expansion and the formulation of the microstructural model
Karen Scrivener, Cyril Dunand (EPFL) Switzerland

A robust testing protocol for the assessment of ASR reactivity of concrete
Théodore Chappex, Lionel Sofia Lionel, Karen Scrivener, Cyril Dunant (EPFL) Switzerland

Experimental study on effects of aggregates mineralogical composition and of preservation conditions on delayed ettringite formation in concrete
Marie Malbois (LMT Cachan)/ Loic Divet, Stéphane Lavaud, Jean-Michel Torrenti (IFSTTAR) France

The identification, extent and prognosis of alkali-aggregate reaction related to existing dams in Switzerland
Russel Michael Gunn (Swiss Federal Office of Energy), Andreas Leeman (EMPA), Karen Scrivener (EPFL) Switzerland

Chambéry old city visit

Wednesday 14th June

Structural Modeling

Modeling of environmental conditions and its impact on the prediction of expansion of concrete affected by alkali-silica reaction
Yuichiro Kawabata. (Port and Airport Research Institute) Japan

Nonlinear Finite elements for the assessment of concrete structures affected by alkali-aggregate reaction : a study case
Mahdi Ben Ftima, Pierre Léger (Polytechnique Montréal) / Fateh Boussaha (Hydro-Québec) Canada

Modeling of moisture and confinement effects on concrete growth in AAR affected structures
Vladimir. Gocevski (Hydro-Québec), Emre Yildiz (IDEA) Canada

AAR and DEF structural effects modeling
Etienne Grimal, Eric Bourdarot (EDF) / Pierre Morenon, Alain Sellier, Stéphane Multon (LMDC-Toulouse University) France

The chemo-visco-elastic-damage approach to analyse swelling processes in concrete dams. Application to Santa Luzia dam
José Piteira Gomes, Antonio Lopez Batista, Jao Pinto Coehlo (LNEC) Portugal

Modeling concrete expansions via coupled C-M-T-H mesomechanical analysis with zero-thickness interface elements, and lab experiments
Ignacio Carol, Joaqin Liaudat, Adriadna Martinez, Carlos M Lopez (UPC) Spain

Dams and hydraulic structures applications / Remedial works

Slot-Cutting of AAR affected structures and numerical analyses of long term effects
Vladimir Gocevski (Hydro-Québec), Emre Yildiz (IDEA) Canada

The Bimont dam case
Catherine Casteigts, Katia Laliche (SCP), Christine Noret, Thomas Bourgouin (Tractebel Engineering) France

The Chambon dam case
Olivier Chulliat, Etienne Grimal, Eric Bourdarot (EDF) France

Long term behavior. Risk reduction

The diagnosis and prognosis of ASR in dams in Portugal. Application to Miranda dam.
João Custódio (LNEC) / José Ilídio Ferreira (EDP) / Antonio Santos Silva, António Bettencourt Ribeiro , António Lopes Batista (LNEC) Portugal

Long term behavior of EDF dams regarding concrete swelling concerns
Thierry Guilloteau, François Martinot (EDF-DTG) France

Important lessons learnt from the proper surveillance of swelling concrete
Louis Christian Hattingh (Hattingh Anderson Associates CC.), Chris Oosthuizen South Africa

AAR Risk Reduction in New Dams & Hydro Projects
Ian Sims. (RSK Environmental Ltd) United Kingdom / Robin Charlwood (R. Charlwood & Associates) USA

Conclusions

Travel and dinner on the Bourget Lake

Thursday 15th June

Technical tour to the Chambon dam