
PM

2017-11-30

ICOLD's Kommittéarbete 2017

Kommitté: Committee A: Computational aspects of analysis and design of dams

ICOLD's "Committee on computational aspects of analysis and design of dams" har varit aktiv under återkommande tidsperioder sedan många år tillbaka. De två senaste aktiva perioderna är 1993 – 1999 samt den sedan 2005 pågående perioden. Kommittén arbetar med att ta fram bulletiner och ordna Benchmark Workshop.

Kommittén har gett ut 6 bulletiner varav Bulletin 122 "Computational procedures for dam engineering – Reliability and applicability", utgiven 2001 och Bulletin 155 "Guidelines for Use of Numerical Models in Dam Engineering", utgiven 2012 är de senast färdigställda bulletinerna. Bulletin 122 innehåller en kritisk granskning av effektiviteten hos tillgängliga matematiska modeller för olika typer av dammar och problemställningar. Bulletinen visar också några av de referenstillämpningar som presenterades under de fyra första Benchmark workshops före 1999. Bulletin 155 presenterar allmänna rekommendationer för processer inom numeriska analysmetoder tillämpade på dammkonstruktioner vid nybyggnad. Bulletinen behandlar även tillämpning av numeriska analysmetoder på befintliga dammar med särskild hänsyn till uppgifter från mätning och övervakning.

Kommittén har sedan 1991 anordnat 14 Benchmark Workshop. Den 14nde Benchmark Workshopen ägde rum i september 2017, i Stockholm, Sverige. Workshopen innehöll 5 tema, nämligen

- Theme A: Cracking of a concrete arch dam due to seasonal temperature variations.
- Theme B: Static and seismic analysis of an arch-gravity dam.
- Theme C: Embankment dam behaviour – prediction of arching and cracking potential.
- Theme D: Risk Analysis–assessment of reliability for concrete dams.
- Open Theme: Choice of the contributor

Den svenska delegaten var initiativtagare för att anmäla Sverige som värd för workshopen och utförde förarbetet för att övertyga kommitté A att låta KTH anordna workshopen. I förberedelsearbetet, för att få Stockholm/KTH som värd för Workshopen, ställde Energiforsks Betongprogram för Vattenkraft upp med nödvändig ekonomisk resurs. Dessutom ställde kollegor på KTH, ÅF och Sweco upp med sina tekniska kunskaper inom området. Svenska delegaten ingick i KTH:s arrangörskommitté, granskade abstracten och uppsatserna (inom Open Theme) för acceptans, samt var moderator för Open Theme under workshopen.

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Nästa, d.v.s. den 15nde, Benchmark Workshopen äger rum hösten 2019. Datum och plats bestäms vid Kommitté A:s möte under ICOLD:s Annual Meeting (och Congress) i juli 2018 i Wien.

Förordnandeperiod: 2014 – 2017 – kommer att fortsätta 2018 - 2021

Kommitténs ordförande: Ignacio Escuder Bueno, Spanien – Guido Mazzá valdes som ny ordförande vid ICOLD:s Annual Meeting 2017 (Prag) 6

Svensk delegat: Manouchehr Hassanzadeh, Sweco Energuide
Manouchehr.Hassanzadeh@Sweco.se

Kommitténs uppdrag:

Kommitténs uppdrag kommer att revideras något och läggas fram för godkännande vid ICOLD:s möte 2018. Fram till dess gäller det gamla uppdraget, enligt nedan:

- 1 Prepare recommendations on the role and capabilities of numerical models to deal with problems relevant to dams throughout their life cycle (design, construction, operation, maintenance, rehabilitation, etc.)
- 2 Organize Benchmark Workshops to compare numerical models between one another and/or with reference solution, including the dissemination and publication of results.
- 3 Prepare recommendations on how computational methods can be used to estimate risks and account for uncertainties inherent to dams.
- 4 Review and consolidate the “state of the art” on new probabilistic approaches to traditionally deterministic inputs and outcomes of numerical modelling.
- 5 Propose lines of research aiming at establishing valid numerical models for the solution of dam problems presently not amenable to reliable numerical treatment

Lägesrapport 2017:

Kommitté A hade ett möte i samband med “ICOLD’s – 85th Annual Meeting juli 2017 - Prag – Tjeckien”. Vid mötet diskuterades kommitténs mål och arbetsuppgifter under de kommande åren, mötesprotokoll finns i Bilaga 1.

Kommitté A hade ett möte, 5/9 2017, i samband med den 14nde benchmark workshopen i Stockholm. Vid mötet diskuterades det av ordföranden föreslagna uppdraget (Terms of Reference). Kommittén godkände innehållet av det nya uppdraget. Vidare, bestämde kommittén att en ny bulletin skall tas fram. Bulletinen “Capitalization of BWs Results” skall sammanställa resultaten (även utvecklingen av analysmetoderna) från samtliga benchmark workshop. Den svenska delegaten kommer att vara medförfattare i några avsnitt samt att ha ansvaret för kapitel “Concrete dams – Thermal analysis, fracture mechanics and swelling”, Bilaga 2.

Arbetet fortsatte inom Task Force 1: Guidelines on numerical non-linear analysis with emphasis on discontinuities of concrete dams. Arbetet skall resultera i en bulletin Non-linear modelling of concrete dams NLMCD. Den svenska delegaten är sammankallande, och ansvarig och författare för ett avsnitt i bulletinen.

Den svenska delegaten deltog i workshopen och utförde analysen inom Theme A: "Cracking of a concrete arch dam due to seasonal temperature variations". Den svenske handledde Denise Ferreira som utförde beräkningarna. Den svenska delegaten skrev uppsatsen och presenterade den vid workshopen.

Som framgick ovan var den svenska delegaten i organisationskommittén.

Kommande aktiviteter 2018:

Nästa kommittémöte äger rum i samband med "ICOLD – Annual Meeting and Congress July 2018 – Vienna – Austria". Den svensk delegaten deltar i mötet. Delegaten kommer att redogöra för utvecklingen inom Task Force 1: Guidelines on numerical non-linear analysis with emphasis on discontinuities of concrete dams och delarbetet inom den nya bulletinen "Capitalization of BWs Results".

Arbetet med bulletinen "Non-Linear Modelling of Concrete Dams" och den nya bulletinen "Capitalization of BWs Results" kommer att fortsätta under 2018.

Övrigt:

Manouchehr Hassanzadeh

A) COMPUTATIONAL ASPECTS OF ANALYSIS AND DESIGN OF DAMS					
PROGRESS REPORT					
Meeting in Prague, July 4, 2017					
MEMBERSHIP / LISTE DES MEMBRES					
COUNTRIES/PAYS	MEMBERS/MEMBRES			Present	Absent/Substitutes
Spain	ESCUDER	Ignacio	Chairman	YES	
Italy	MAZZA'	G.	Vice-C.	YES	
Italy	MEGHELLA	M.	Member	YES	
Italy	FANELLI	M.	Hon.Member	NO	
France	CARRERE	A.	Hon.Member	NO	
Argentina	RESELLI	F.	Member	NO	
Australia	LOPEZ	F.	Member	NO	
Austria	ZENZ	G.	Member	YES	
Canada	CURTIS	D.	Member	NO	
China	CHEN	S.	Member	YES	
Colombia	MARULANDA	C.	Member	YES	
Finland	VARPASUO	P.	Member	YES	
Form.Yug. Yugoslavia	TANCEV	L.	Member	NO	
France	FROSSARD	E.	Member	YES	
Germany	BEETZ	U.	Member	NO	
Greece	DAKOULAS	P.	Member	NO	
Iran	GHAEMIAN	M.	Member	NO	
Japan	NOGUCHI	H.	Member	YES	
Norway	ANDERSEN	R.	Member	NO	
Romania	POPOVICI	A.	Member	YES	
Russia	GLAGOVSKY	V.	Member	YES	
Slovakia	MINARIK	M.	Member	YES	
Sweden	HASSANZADEH	M.	Member	YES	
Switzerland	GUNN	R.M.	Member	NO	
Turkey	ONDER OZEN	O.	Member	NO	
United States	MATHEU	E.	Member	NO	
OBSERVERS: Miroslav Broucek, Mateja Klun and Kristina Terheiden (to become official members this year for Czech Republic, Slovenija and Germany respectively), Richard Malm, Antonella Frigerio, Daniel Eriksson, Jasmina Toromanovic, Mohamed Abdurahman, Rikard Hellgren, Edwin Staudacher, Ingrid Silva, Carlos Granell, Nasser Kamjoo					

Distribution list of emails

Official representatives (including new members): Guido.Mazza@rse-web.it; FRestelli@elchoconsa.com.ar; gerald.zenz@tugraz.at; dcurtis@hatch.ca; chensh@whu.edu.cn; marulanda@ingetec.com.co; pentti.varpasuo@fortum.com; tancev@gf.ukim.edu.mk; etienne.frossard@gdfsuez.com; uwe.beetz@hydroprojekt.de; dakoulas@uth.gr; Massimo.Meghella@rse-web.it; roan@nve.no; popovici@utcb.ro; vglag@mail.ru; marian.minarik@vzb.sk; enrique.matheu@dhs.gov; alain.carrere@gdfsuez.com; michele.fanelli@infinito.it; Francisco.Lopez@ghd.com; gariponder@yahoo.com; anoguchi@tepsco.co.jp; manouchehr.hassanzadeh@sweco.se; onderozen@ilci.com.tr; russell.gunn@bg-21.com, Mateja.klun@fgg.uni-lj.si, broucek@czcold.cz, kristina.terheiden@iws.uni-stuttgart.de; iescuder@hma.upv.es

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WORKSHOP HELD BY THE COMMITTEE A

Committee A held a Workshop on July 3, 2017, with more than 40 total attendees, It included a series of presentations linked to coming celebration of the XIV ICOLD Numerical Benchmark Workshop, to be held in Stockholm, Sweden, 6-8 September 2017, following a tradition that lasts for more than 20 years (started in Bergamo, 1991).

16:00 - 16:10	Opening remarks	Ignacio ESCUDER Exiting Chairman of Committee A
16:10 – 16:30	Presentation of the History Proceedings of ICOLD BW since 1991.	Guido MAZZA', Entering Chairman of Committee A
16:30 – 16:45	Presentation of the XIV ICOLD Benchmark Workshop to be held in Stockholm, in September 2017	Manouchehr Hassanzadeh/Richard Malm
16:45 – 17:15	Presentation of the Themes of XIV ICOLD Benchmark Workshop to be held in Stockholm, in September 2017	Manouchehr Hassanzadeh/Richard Malm
17:15 – 17:45	Discussions and suggestions for further BW	Guido MAZZA'
17:45 – 18:00	Closure	

AGENDA OF THE TECHNICAL COMMITTEE A

On July 4, 2017, Committee A meeting included the following agenda items:

- Welcome to new representatives and Approval of Agenda Items
- Approval of the Minutes of the previous meeting held in Johannesburg (South Africa) on May, 2016.
- Brief comments from exiting Chair, by Ignacio Escuder.
- Overall report from entering Chair, by Guido Mazzà
- Summary report of the Benchmark Workshop to be held in Stockholm, Sweden on September, 2017, by Manouchehr Hassanzadeh/Richard Malm
- Activities of the Task Forces. Presentations from the leaders
 - ü Task Force 1. Guidelines on numerical non-linear analysis with emphasis on discontinuities of concrete dams. By Manouchehr Hassanzadeh
 - ü Task Force 2. Numerical and computational needs with regard to risk analysis and assessment. By Ignacio Escuder
 - ü Task Force 3. Editing the full history of Benchmark Workshops. By Ozen Onder
- New “Ad hoc” task forces. Proposals.
- Proposal to establish stronger connections with other Technical Committees, in particular with Seismic aspects, Hydraulics, Materials that could allow some improvements in numerical modelling
- Other activities: workshops, meetings, etc.
- Suggestions
- Miscellaneous aspects

Note. The afternoon time was devoted to Task Force 1 team work

MINUTES OF THE MEETING

After having given the welcome to the Committee Members, to the New Representatives and to the Observers, the present Chairman Escuder has called for the approval of the Minutes of the previous meeting in Johannesburg and of the Agenda. Both items have been approved.

The Chairman has confirmed to the Committee his intention to leave the post of chairman of the Committee. Next Friday the appointment of Guido Mazzà as new Chairman and Gerald Zenz as Vice Chairman will be voted during the General Assembly. Ignacio Escuder will remain as member of the Committee. Moreover, also the renewal of activities for three more years will be voted..

Subsequently, Guido Mazzà has presented a general report about the main lines of the activities foreseen for the next three years of his mandate, if he will be nominated. In particular, emphasis was given to the role that the hydro sector in general, and dams in particular, could play in the next decades. Numerical modelling should give its noteworthy contribution . To achieve this goal, in addition to the fulfilling of the Terms of Reference assigned by ICOLD to the Committee A, it will be necessary to establish stronger connections with other Technical Committees, in particular with the Committees on Seismic aspects of dam design; Concrete dams; Embankment dams; Operation, maintenance and rehabilitation of dams, Dam surveillance. Moreover, it could be useful to establish a positive collaboration with the EURCOLD Working Group “Validation of Seismic Analyses” that could allow significant improvements in numerical modelling. Moreover, it will be fundamental to proceed with the preparation of new Bulletins and organize Benchmark Workshops to be used in current practice and that can contribute to allow a suitable transfer of experience, skill and knowledge across generations.

Finally he has informed the Committee Members about the recent information received by the Board about the access to the ICOLD website for Technical Committees.

As scheduled in the Agenda, Richard Malm has informed the audience about the organization of the Benchmark Workshop that will be held in Stockholm, Sweden on September, 2017. The organization is progressing very positively and a large participation is foreseen.

Manouchehr Hassanzadeh has given information about the state of the art of the activities relevant to the preparation of the “Guidelines on numerical non-linear analysis with emphasis on discontinuities of concrete dams”. The activities are in progress and the Task Force has organized a meeting in the afternoon in order to analyze some aspects that deserve deepening and clarification.

Ignacio Escuder has done a short presentation about the numerical and computational needs with regard to risk analysis and assessment. In particular, he has given information about a paper recently published. The references are: “Ignacio Escuder-Bueno, Guido Mazzà, Adrián Morales-Torres, Jesica T. Castillo-Rodríguez. Computational Aspects of Dam Risk Analysis: Findings and Challenges. Artículo. <http://dx.doi.org/10.1016/J.ENG.2016.03.005>. Engineering. Number: 6. ISSN: 2095-8099. Elsevier.2016” was presented.

With reference to the engagement of Ozen Onder who was in charge of the editing the full history of Benchmark Workshops, Escuder and Mazzà informed that in the last two years it was not possible to get in touch with the Turkish member. For this reason a contact with the Turkish Committee has been activated: the Secretary General of that Committee will take care of the problem and will give an answer as soon as possible.

The Committee Meeting was closed at the end of the morning and the Task Force in charge of the new Bulletin preparation has met in the afternoon.

Hassanzadeh Manouchehr

Från: Mazzà Guido (RSE) <Guido.Mazza@rse-web.it>
Skickat: den 5 november 2017 12:28
Till: gerald.zenz@tugraz.at; Camilo Marulanda E.; 'Kristina Terheiden'; 'Fabian Restelli (CHOCÓN)'; Klun, Mateja; 'Vyacheslav Glagovsky'; 'Adrian Popovici'; Hassanzadeh Manouchehr; Ignacio Escuder Bueno; Meghella Massimo (RSE); Panos Dakoulas
Ämne: Capitalization of BWs results: proposals
Bifogade filer: Capitalization_BW.xlsx

Prioritet: Hög

Uppföljningsflagga: Följ upp
Färdigt: den 13 november 2017 16:00
Flagga: Har meddelandeflagga

Kategorier: Grön kategori

Dear Colleagues,

the proposal "Capitalization of BW results" has had a success that exceeds my most anticipated expectations: besides you that I have included in the mailing list, over 30 technicians (many young engineers among them!) have expressed their intention to give their contribution to the project.

In the excel file here attached, you can find some basic information necessary to have a clear overlook about the work to be done:

- Sheet 1 – BWs: List of Themes proposed in the 14 BWs subdivided according to a possible homogeneous grouping
- Sheet 2 – Contributors: List of people who have come up for each topic
- Sheet 3 – Members: Updated list of members of the Committee A.

On the organizational level, my proposal is as follows:

- the coordination of each group is entrusted to one (or more) members of the Committee (of course I make reference to you all as Committee Members who have expressed the intention to participate to the project) for reasons of technical experience and greater knowledge of the ICOLD world (probably this last aspect is not true for the new-comers members)
- the coordinator shares the critical review and synthesis of BW issues among the people who have given their disposability
- it is the coordinator's job to check the progress of the activity and indicate any adjustments
- a reference Board is created between the coordinators and myself in order to make a check on the advancement of the job and to define possible corrections; the Board establishes an email contact on a monthly basis to check the progress of the activities
- on schedule, my proposal is to produce a first draft document to be presented in Vienna 2018, so that the issue of a new Bulletin could be foreseen on 2019.

Please, feel free to send me (copy to other coordinators) all your comments and changes about my proposals. As soon as I receive your feedback, I will get in touch with the Committee Members for informing all of them about the progress of this initiative and with the people who have expressed their interest in order to start the work.

Looking forward to your kind and prompt answer
 Best regards

Guido

Power of Attorney.

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List of participants to the Capitalization of BWs results

Dam type	Problems analysed in the 14 BW					
	Static analysis & interpretation of measurements	Seismic analysis	Thermal analysis Fracture mechanics Swelling	Seepage analysis Settlement evaluation	Probabilistic analysis & risk assessment	Open themes
Concrete	G. Zenz M. Meghella M. Klun K. Terheiden G. Faggiani J. Mata F. Salazar P. Manso E. Bretas E. M. Castilho R. Malm A. Popovici M. Hassanzadeh C. Granell C. Baena	G. Zenz M. Meghella A. Popovici K. Terheiden G. Faggiani E. Bretas S. Valente S. Teodori S. Mitovski	M. Hassanzadeh K. Terheiden A. Frigerio R. Malm E. M. Castilho V. Mouy C. Baena C. Granell		I. Escuder M. Meghella F. Polidoro A. Morales	RSE TU-Graz UPV (BW9 St. Petersburg BW13 Lausanne BW14 Stockholm)
Embankment	P. Dakoulas V. Glagovsky C. Marulanda F. Restelli G. La Barbera G. Lanzo F. Salazar J. Toromanovic	C. Marulanda V. Glagovsky P. Dakoulas G. La Barbera G. Lanzo A. Barchiesi C. Caballero J. Toromanovic A. Barchesi C. Caballero S. Teodori		V. Glagovsky P. Dakoulas C. Marulanda G. La Barbera G. Lanzo J. Toromanovic	I. Escuder M. Meghella A. Morales	
RCC			G. Mazzà K. Terheiden A. Frigerio P. Manso S. Mitovski A. Pernich M. Conrad			
Rockfill & CFRD	C. Marulanda P. Dakoulas G. La Barbera F. Salazar G. Bolzon					
Others		G. Mazzà A. Frigerio			I. Escuder M. Meghella L. Mancusi	

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