

**Technical Committee TC 213**  
**Geotechnics of Soil Erosion**  
**International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE)**

**Meeting November 9, 2010, San Francisco, USA**

**Call for attendance**

The chairman welcomes members and guests and thanks Cathy Avila and Beatrice Hunt for arranging the meeting and the conference

The attendees at the TC-213 meeting are as follows:

<b>First Name</b>	<b>Last Name</b>	<b>e-mail</b>	<b>Country</b>
Benjamin	Adams	runinguy@gmail.com	USA
Marx	Ahlinhan	ahlinhan@igbe.uni-hannover.de	Germany
George	Annandale	george_annandale@golder.com	USA
Cathy	Avila	cavila@avilaassociates.com	USA
Stephen	Benedict	benedict@usgs.gov	USA
Abdelkrim	Bennabi	abennabi@adm.estp.fr	France
Eric	Bollaert	erik.bollaert@aquavision-eng.ch	Switzerland
Stephane	Bonelli	stephane.bonelli@cemagref.fr	France
Jean-Louis	Briaud	briaud@tamu.edu	USA
Christophe	Chevalier	christophe.chevalier@lcpc.fr	France
Yee Meng	Chew	cymchiew@ntu.edu.sg	Singapore
John	Harris	jmh@hrwallingford.co.uk	UK
Michael	Heibaum	michael.heibaum@baw.de	Germany
G.J.C.M.	Hoffmans	gijs.hoffmans@deltares.nl	Netherlands
Beatrice	Hunt	Beatrice.Hunt@ stvinc.com	USA
Bruce	Melville	b.melville@auckland.ac.nz	New Zealand
Jennifer	Nolan-Kremm	jennifer.nolan-kremm@stvinc.com	USA
Shinji	Sassa	sassa@ipc.pari.go.jp	Japan
Robert	Schweinfurth	rschweinfurth@asce.org	USA
Exequiel	Sinco	Esinco@mail.fresnostate.edu	USA
B. Mutlu	Sumer	bms@mek.dtu.dk	Denmark
Henk	Verheij	henk.verheij@deltares.nl	Netherlands
Yoichi	Watabe	watabe@ipc.pari.go.jp	Japan
Richard	Whitehouse	rjsw@hrwallingford.co.uk	UK
Karl Josef	Witt	kj.witt@uni-weimar.de	Germany
Ming	Xiao	mxiao@csufresno.edu	USA
Thomas	Zimmie	zimmit@rpi.edu	USA

Cathy Avila volunteers to serve as the secretary of TC 213 which is highly appreciated by the President of ISSMGE, the chairman and the members.

## Introduction

The President of ISSMGE, Jean-Louis Briaud, installed a technical oversight committee (TOC) within ISSMGE to reorganize the TCs in ISSMGE. TOC consists of the following as shown in Table 1.

There are three groups of Technical Committees. 7 committees are under “Fundamentals”, 7 are under “Impact on Society” and 16 are under “Applications” (we are #213 Geotechnics of Soil Erosion). The Technical Committees are shown in Table 2. TC-213 is a special TC because we go beyond the limits of ISSMGE by bringing the geotechnical and the hydraulic engineers together and include our colleagues from IAHR.

Historically, the committee membership has been limited to one member per country. The new rules settled on two members per country. Yesterday in New Delhi, a corresponding member category was added. Any country that wants to participate can.

The roof organization (executive committee) Federation of International Geo Society FedIGS. Neilen Van der Merwe from South Africa is the new chair. Still in existence. It was organized to promote cooperation between sister geotechnical societies. They also want to invite the IAHR folks.

Official name of the TC-213 is “Geotechnics of Soil Erosion” as specified by President Van Impe 2001. Not many countries have sent their membership yet as shown in Table 3 (updated December 2010). Some national societies have named their membership and some coordination needs to take place. Each time there is a new president, all TCs are disbanded and the new president appoints new members. New rule: TCs should not be tied to the presidential cycle. A new TC can be proposed at any time. Under the new guidelines, the chair is elected for a 4 year term which can be renewed one time. Jean-Louis Briaud feels the membership should elect their chair. E-mail of the minutes will be sent to all guests. If you are not on the TC 213 list, get in touch with your national secretary. Jean-Louis Briaud: we want to make sure that people have the opportunity to participate, but the TC needs to produce.

The TOC named four participants for this committee, chair chose another 4 persons. Michael Heibaum chose IAHR people; Fuing Gao from China is the Vice Chair appointed by Michael.

TC-213 terms of reference 2010 to 2014 (approved by TOC in November 2010):

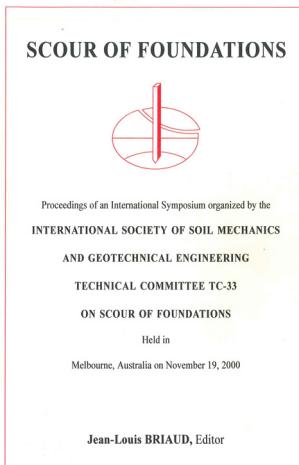
- Exchange information on scour and erosion processes from the geotechnical point of view.
- Improve the mutual understanding of geotechnical and hydraulic approaches to scour and erosion.
- Organize bi-annual international conferences on scour and erosion
- Promote the improvement of calculation methods of scour and erosion processes
- Provide relevant information on the web to the geotechnical and hydraulic community.
- TC 213 – Soil Erosion

TC-213 has sponsored 6 Symposium/Conferences on Scour and Erosion as follows:

2000: Melbourne, Australia International Symposium

## Minutes

Technical Committee on Geotechnics of Soil and Erosion (TC-213)  
Meeting November 9, 2010

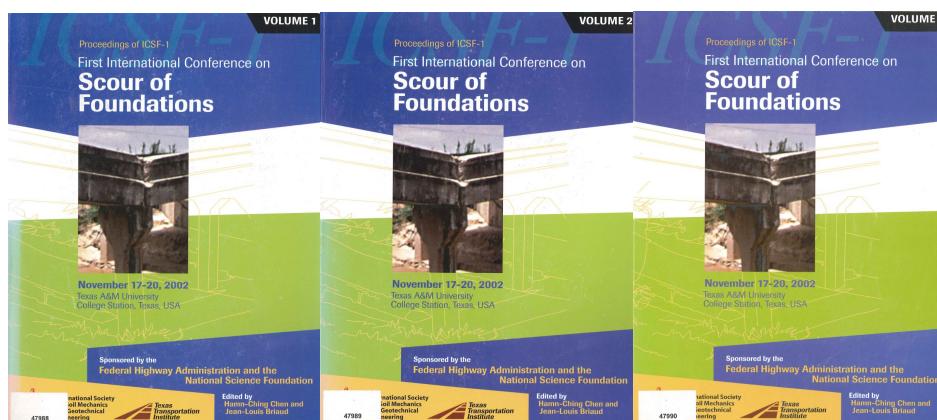


2001: Scour of foundations (Workshop during XV. ICSMGE, Istanbul, Turkey) in BAWW "Mitteilungen" NR 85 (German and English)

([http://www.baw.de/de/die\\_baw/publikationen/mitteilungsblaetter/index.php.html?id=ec8518d0db99c501e5ae2032684c6fd5](http://www.baw.de/de/die_baw/publikationen/mitteilungsblaetter/index.php.html?id=ec8518d0db99c501e5ae2032684c6fd5))



2002: ICSF-1 in College Station, Texas

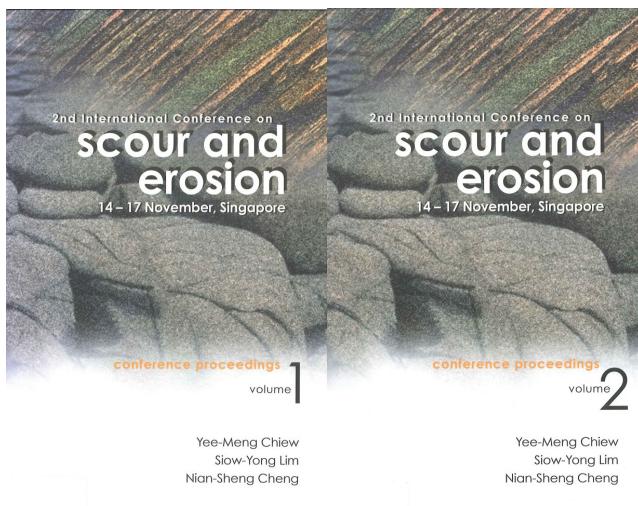


## Minutes

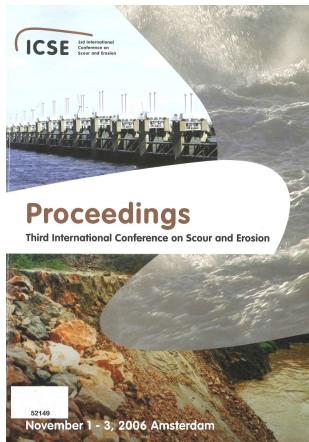
Technical Committee on Geotechnics of Soil and Erosion (TC-213)  
Meeting November 9, 2010

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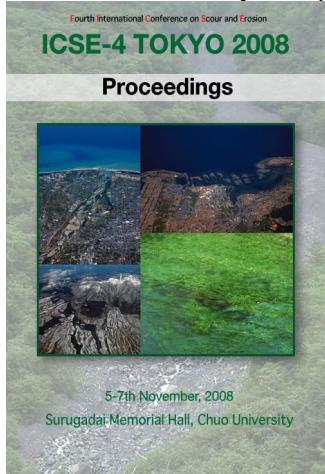
### 2004: 2<sup>nd</sup> International Conference in Singapore



### 2006: 3<sup>rd</sup> International Conference in Amsterdam



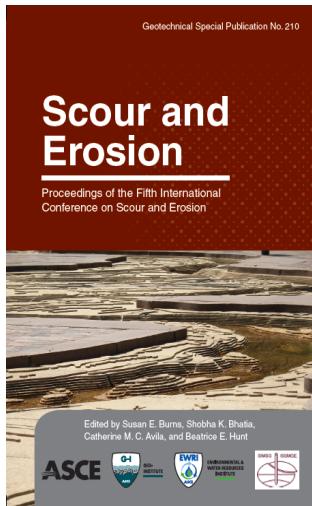
### 2008: ICSE-4 Tokyo, Japan



## Minutes

Technical Committee on Geotechnics of Soil and Erosion (TC-213)  
Meeting November 9, 2010

2010: ICSE-5 San Francisco, CA, USA



The name of the committee and the conference has changed over the years as follows:

- 1997: TC33 "Scour of foundations"
- 2002: ICSF-1 "Scour of foundations"
- 2001: TC33 "Geotechnics of soil erosion"
- 2004: ICSE-2 "Scour and erosion"
- 2010: TC213

Suggest changing the name from "Geotechnics of soil erosion" to "Scour and Erosion" (as we name the conferences). The proposal was accepted unanimously. As the chair, Michael Heibaum will take care of changing the name with ISSMGE.

### Interaction with other Societies / other TCs

Between 1992 and 2004, there was a conference every 4 years on filters in geotechnical and hydraulic engineering. The filter conference has not succeeded in finding volunteer for hosting the 5<sup>th</sup> conference. Since these topics are somewhat close together, some filter presentations have been included in this conference. Michael Heibaum proposed merging the conferences and keeping the spirit of the filter conferences alive. Invite the past participants of the filter conference to our next conference. This includes both the geo-synthetic filters as well as the granular filters. ICSE-6 might want to add another day or add a 4<sup>th</sup> concurrent session to the program. The decision will be made by the local organizing committee.

Since our scope was widened to erosion, there might be some interaction to other TCs such as 201 (geotechnical aspects of dykes and levees, shore protection and land reclamation, Chaired by M. Van, The Netherlands), 210 (dams and embankments Chaired by Zeping Xu, China). Michael Heibaum will coordinate the information on our conference to see what topics are treated in 213 and work with our colleagues within the leadership of the other TCs.

Jean-Louis Briaud: Bring membership of in Rome in May 2011: Invite IECA, IAHR, IGS and ICORT into the FedIGS meeting.

Jean-Jaques Fry: Potential coordination from the technical committee on ICOLD (International Commission On Large Dams). They have not historically shared their results of research works. ICOLD is only experience from practitioners. Contact people who are in the technical committee of ICOLD. No one here is related to ICOLD.

## Comments on ICSE-4

180 abstracts

113 papers

3 tracks

2% of registration was remitted to ISSMGE, was included in the budget.

10-12 people signed up on-site.

We broke even for the conference – or made a bit of money, we will determine the final numbers in a few weeks.

Bea Hunt received a fair number of requests for the presenters powerpoint slides electronically. FHWA produces a CD of all the powerpoint presentations for their hydraulic engineers conference. Michael Heibaum pointed out that the day after the conference everyone wants the powerpoint presentations but they are useless after 6 months later. It is better to have a written contribution. It was suggested that individuals contact the authors for their slides on a one to one basis.

For ICSE-5 there is only a paper proceeding. We did not provide a CD of the proceedings. Rob Schweinfurth (ASCE GI) noted that the decision to do book vs CD is because in the ASCE publications department, the fixed costs are higher for the CD (2 times as much for the same number of copies). ASCE ordered 160 copies of the proceedings and the pricing was based on a bulk buy. If we had purchased 400, it would have broken even according to the ASCE publication department.

## Repository for ICSE proceedings

COPRI is organizing the ICCE conference and has decided to make all conference proceedings available on their website dating back to 1952. Why can't we do the same thing?

Texas, Singapore, Amsterdam (except Keynotes), Tokyo are all available for free and there is only the challenge to put it on the web. Michael Heiaum will take over the website for TC-213 and put all the papers through 2008 on the website.

## Presentation of ICSE-6:

Jean-Jaques Fry. The conference will be held the last week of August. This is likely the vacation time for the professors and possibly before the beginning of the school thus available to the family. They will also include a program for accompanying persons. The conference has booked 5 days in the center of Paris in The Ecole Speciale des Travaux Publics (not in a hotel). The school is located between Notre Dame and the Sorbonne. Conference dates will be August 27<sup>th</sup> through August 31<sup>st</sup>.

Monday: short courses

Tuesday: technical tour

Wed-Fri: 3 days of conference.

Deliverable: The conference will be either on a CD or flashdrive – no hard copy. Like Tokyo, they will have the abstracts printed in a hard copy for all participants.

4 parallel sessions: no problem to add a session devoted to filters.

- Jean-Jaques Fry was looking for a new topic for the conference. For example, Jean-Louis Briaud organized a benchmark session in 2002 to validate modeling.
- Could have a good number of erosion testing apparatus – if we could find a basic sand/clay and send to all who have an erosion test, and get these authors to compare the data and see what it means. Might not be practical to conduct such tests, as we might need about 1 Ton of material to run parallel tests in the various labs.
- Could have a session about the relationship between turbulence and erosion.

- Could have a state of the art session. Provide as a general report that is developed for the new researcher and a step for the future. Give a lecture at the end of the conference in order to give perspective on the next conference. Want to invite the media as well and have some of the lecture open to the media in order to show how we control the risk. What is the needed research? This lecture should be given by more than one person. More interesting to include for example a practitioner and an academic.

Geo-institute may be interested in being a cooperating organization. Advertise to their membership and promote the conference. It would be nice to coordinate with the other societies to get them to advertise the conference with us. Have lots of cooperating organizations. Their committees could help get speakers etc.

American Association of State Dam Officials (AASDO) might also be interested.

### **Discussion and presentations of proposals of ICSE-7 2014**

Question to the participants, is there any proposal for the 2014 conference?

The committee suggested that Wei Lee in Taipei is doing some nice work. Taiwan might also provide a good venue as it has had some serious bridge scour problems. Yee Meng tried for people in China and Korea. It was also suggested that we could ask someone in Korea.

Richard noted that Liang Cheng might be willing to do it out of the University of Western Australia along with the offshore into being. Michael Heibaum and Richard Whitehouse will approach Liang Cheng formally to see if he is interested in pursuing formally. The committee agreed that Korea would be pursued as a 2<sup>nd</sup> choice if Western Australia does not pan out.

### **Other committee projects**

If you ask people in the committee to write papers – no deadline etc. but if you have the opportunity to do it as part of the conference, you have more of a carrot. So, what are the big topics? Leave it to Jean-Jaques Fry to plan it out.

Establish named lectures. Jean-Louis Briaud can note that the earthquake committee has started the Ishihara lecture. The lab testing committee has started the Bishop lecture. This would be a featured lecture of your conference. Offshore geotechnics committee has recently decided to raise money to allow the lecturer and honorarium, they pay travel etc. Is this a good concept? In the world of erosion, there may not be a superstar. It was the consensus of the committee that for the time being, we will put this on the back burner.

Update on the scour manual: Gijs Hoffmans. 2009 Jean-Louis Briaud wrote a preface . He is currently writing Chapter 1, the introduction (last chapter). He promises to publish in 2011 in time for the 2012 conference. We will look forward to having it in our libraries.

Richard Whitehouse: HR Wallingford held a 5 day PhD summer school on seabed structure interaction. It was held in conjunction with the Danish Technical Institute. 55 PhD students participated. It was very successful and will consider running it again in the future. It was international from across the world. The topic of scour remains one of the attractions in the PhD course. 2.5 ECTS internationally recognized units. The conference provided some small grants for those who could not meet the travel expenses. See Appendix A for the conference flyer.

The committee would like to develop webinars – 1 hour lectures given by one person in one office and everyone can connect to see the powerpoint on their screen and phone for the voice. You can connect with countries that really need help but cannot get access to the technical information.

Minutes

Technical Committee on Geotechnics of Soil and Erosion (TC-213)

Meeting November 9, 2010

---

Some folks cannot afford to come to the conference. Could do a 1 hour webinar for \$50 to \$200 per webinar attendee.

Rob to send the e-mail list of the participants of ICSE-5 to Jean-Jaques Fry for his use.

Next meeting in Paris August 29, 2012.

Respectfully Submitted,

Cathy Avila, Secretary TC-213

**Table 1: The Technical Oversight Committee within ISSMGE**

Name	Function	Country
Suzanne Lacasse	Chair	Norway/Canada
Kjell Karlsrud	Co-Chair	Norway
Michele Jamiolkowski	Vice-chair	Italy
Kenichi Soga	Secretary	UK/Japan
Mounir Bouassida	Member	Tunisia
J. Bray	Member	USA
Mark Cassidy	Member	Australia
A.Gomes Correia	Member	Portugal
Hongsung S. Lee	Member	S-Korea
Ramon Verdugo	Member	Chili
Yoichi Watabe	Member	Japan
Anwar E.Z.Wissa	Member	USA/Egypt
Sherif Wissa Agaiby	Member	Egypt

**Table 2: Technical Committees under ISSMGE**

Category	TC #	TC Official Name
Fundamentals	TC 101	Lab Stress Strain Strength Testing of Geomaterials
	TC 102	Ground Property Characterization from In-Situ Tests
	TC 103	Numerical Methods in Geomechanics
	TC 104	Physical Modeling in Geotechnics
	TC 105	Geo-Mechanics from Micro to Macro
	TC 106	Unsaturated Soils
	TC 107	Laterites and Lateritic Soils
Impact on society	TC 301	Preservation of Historic Sites
	TC 302	Forensic Geotechnical Engineering
	TC 303	Coastal and River Disaster Mitigation and Rehabilitation
	TC 304	Engineering Practice of Risk Assessment and Mgt.
	TC 305	Geotechnical Infrastructure for Megacities & New Capitals
	TC 306	Geo-engineering Education (include software in use)
	TC 307	Dealing with sea level changes and subsidence
Applications	TC 201	Geotechnical Aspects of Dykes and Levees, Shore Protection and Land Reclamation
	TC 202	Transportation Geotechnics
	TC 203	Earthquake Geotechnical Engineering & Assoc. Problems
	TC 204	Underground Construction in Soft Ground
	TC 205	Limit State design in Geotechnical Engineering
	TC 206	Interactive Geotechnical design
	TC 207	Soil-Structure Interaction and Retaining Walls
	TC 209	Offshore Geotechnics
	TC 210	Dams and Embankments
	TC 211	Ground Improvement

Minutes

Technical Committee on Geotechnics of Soil and Erosion (TC-213)

Meeting November 9, 2010

---

- TC 212 Deep Foundations
- TC 213 Geotechnics of Soil Erosion
- TC 214 Foundation Engineering for Difficult Soft Soil Conditions
- TC 215 Environmental Geotechnics
- TC 216 Frost Geotechnics

## Minutes

Technical Committee on Geotechnics of Soil and Erosion (TC-213)

Meeting November 9, 2010

**Table 3: Current Membership of TC213 (December 2010)**

Nominator	Role	First Name	Last Name	email	Member Society
	Chair	Michael	Heibaum	michael.heibaum@baw.de	Germany
Chair	Vice chair	Fuping	Gao	fpgao@imech.ac.cn	China
Chair	Secretary	Cathy	Avila	cavila@avilaassociates.com	USA
TOC		G.J.C.M.	Hoffmans	gijs.hoffmans@deltas.nl	Netherlands
TOC		Mario	Ruel	ruel02@cn.ca	Canada
TOC		Shinji	Sassa	sassa@ipc.pari.go.jp	Japan
TOC		M.	Shimamura		Japan
Chair		George	Annandale	george_annandale@golder.com	USA
Chair		B. Mutlu	Sumer	bms@mek.dtu.dk	Denmark
Chair		Richard	Whitehouse	rjsw@hrwallingford.co.uk	UK
Spain	Member	Enrique	Asanza	easanza@cedex.es	Spain
India	Member	P.K.	Basudhar	pkbd@iitk.ac.in	India
India	Member	Jai	Bhagwan	jbhagwang@yahoo.com	India
Switzerland	Member	Eric	Bollaert	erik.bollaert@aquavision-eng.ch	Switzerland
Italy	Member	Daniele	Cazzuffi	cazzuffi@cesi.it	Italy
France	Member	Christophe	Chevalier	christophe.chevalier@lcpc.fr	France
Spain	Member	Fernando	Delgado	fdelgado@ugr.es	Spain
USA	Member	Beatrice	Hunt	Beatrice.Hunt@ stvinc.com	USA
Hungary	Member	Janos	Jozsa	jozsa@vit.bme.hu	Hungary
New Zealand	Member	Bruce	Melville	b.melville@auckland.ac.nz	New Zealand
Italy	Member	Nicola	Moraci	nicola.moraci@unirc.it	Italy
Kazakhstan	Member	V.N.	Popov	kargiiz@yandex.ru	Kazakhstan
Hungary	Member	Laszlo	Rakoczi	lrakoczi@t-online.hu	Hungary
Japan	Member	Hideo	Sekiguchi	h.sekiguch@gmail.com	Japan
Hong Kong	Member	Jui-Pen	Wang	jpwang@ust.hk	Hong Kong
Germany	Member	Katja	Werth	kwerth@bbgeo.com	Germany
Germany	Member	Karl Josef	Witt	kj.witt@uni-weimar.de	Germany
Hong Kong	Member	Mike	Wright	michael.wright@dar.com.hk michael.wright@arup.com	Hong Kong

## Minutes

## Technical Committee on Geotechnics of Soil and Erosion (TC-213)

Meeting November 9, 2010

## Appendix A

The Danish Center for Applied Mathematics and Mechanics, DCAMM is an informal framework for internationally oriented scientific collaboration between staff members at a number of departments at the Technical University of Denmark (DTU) and Aalborg University (AAU). The departments cooperating within DCAMM are:

- Dept. of Informatics & Mathematical Modelling, DTU
- Dept. of Mathematics, DTU
- Dept. of Mechanical Engineering, DTU
- Dept. of Civil Engineering, AAU
- Dept. of Mechanical Engineering, AAU

DCAMM is an informal construction. The day to day activities are coordinated by the secretary of the Center, while the formal governing body of DCAMM is the Scientific Council.

The DCAMM International Graduate Research School functions within the standard framework of the Ph.D. education at the Technical University of Denmark (DTU) and at Aalborg University (AAU). Ph.D.-students associated to the School are full members of DCAMM through their departments and are enrolled in relevant Ph.D.-programmes at DTU and AAU.

The School's role is to provide for an interdisciplinary framework for education of young researchers in an international research environment, and the activities are supported by Danish Agency for Research, Technology and Innovation (FNU).

### Course Objectives

Seabed and structure interaction involves processes such as flow around and forces on structures (including flow induced vibrations of slender bodies), scour and backfilling processes, as well as liquefaction processes around marine structures. The past three decades have witnessed substantial advances in this field. The objective of this course is to disseminate the recent knowledge. The course has the following learning objectives:

### Learning Objectives

A student who has met the objectives of the course will be able to:

- describe flow and force processes in the presence of cylindrical structures,
- describe hydrodynamic (flow-induced) vibrations of slender structures such as marine pipelines and flexibly-mounted cylinders
- explain drag, inertia, lift forces in currents and in waves
- describe scour around marine structures including offshore wind turbine foundations and pipelines
- describe wave-induced seabed liquefaction around marine structures
- explain various modes of failures due to scour as well as liquefaction
- perform calculations related to scour and liquefaction around marine structures

### Language

All lectures will be given in English.

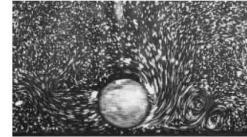
### Organizer

B. Mutlu Sumer, DTU bld. 403, office no. 125, Tel.no: (+45) 45 25 14 23, mail: [bms@mek.dtu.dk](mailto:bms@mek.dtu.dk)

This course is offered as part of the activities of the DCAMM International Graduate Research School.



DANISH CENTER FOR APPLIED MATHEMATICS AND MECHANICS



Ph.D.-course

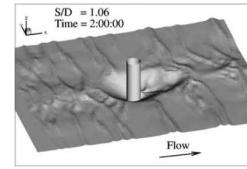
### Seabed and Structure Interaction

at

Technical University of Denmark,  
Lyngby, Denmark

August 16<sup>th</sup> – 20<sup>th</sup>, 2010

Organized by:  
Department of Mechanical Engineering,  
Technical University of Denmark



Technical University of Denmark  
University of Aalborg



### Course lecturers

Charles H.K. Williamson, Professor, Cornell University, USA.  
Richard Whitehouse, Technical Director and Professor, HR Wallingford, UK.  
B. Mutlu Sumer, Professor, Technical University of Denmark.

### Internet resources

For information about teaching and research at the DCAMM departments: see <http://www.dcamm.dk>.  
For facts on the Technical University of Denmark and visitor's information see: <http://www.dtu.dk>.  
For information on the University of Aalborg see: <http://www.aau.dk>.

### Participants

The course is designed for Ph.D. students and final-year Graduate students.

### Work Load

Each day (Monday-Friday) there will be lectures 8-12 and 13-17. Friday afternoon there will be a visit to the Hydraulics Laboratory of DTU Mechanical Engineering.

### Study Material

Notes will be handed out.

### Evaluation and Diplomas

To pass the course, active participation in all activities is required, as well as electronic submission of reports in the following two weeks.

Grades: Pass/Fail. ECTS points: 2.5.

### Registration:

Ask for a registration form from the DCAMM-course Secretariat, attn: Kari Haugland, Department of Mathematics, Technical University of Denmark, Building 303S, DK-2800 Lyngby, Denmark. Tel.: (+45) 45253031, Fax: (+45) 45881399, E-mail: [dcamm@mat.dtu.dk](mailto:dcamm@mat.dtu.dk).

### Registration fee:

There is no registration fee for students enrolled at universities and public research institutions. For researchers employed at universities and public research institutions the registration fee is 250 EURO. This covers hand-outs, coffee and social events. For all other participants the registration fee is 750 EURO.

### Deadline:

Applicants should submit their registration to the course secretariat no later than 15th July, 2010. You will receive confirmation within a week after this date.

### Housing:

There are a limited amount of rooms available on the premises of the Technical University of Denmark (DTU). These will be offered free of charge to students and otherwise at a cost of 25 EURO per night. Accommodation in hostels/hotels can also be arranged by the participants themselves, see the Wonderful Copenhagen website at [www.woco.dk](http://www.woco.dk).

### Scholarships:

For Ph.D.-students enrolled at non-Danish universities and research institutions outside the EU, we can offer a limited number of scholarships in order to facilitate participation, covering lodging (see above) and extra living costs with a per diem amount of 25 EURO. Travel expenses will not be covered. Your CV and a short letter of recommendation from your Ph.D.-supervisor should then be sent in together with the application form.

### Cover illustration:

- Top: Flow around a near-wall cylinder (Sumer, Jensen & Fredsoe, 1991, JFM, 225, 271-300)
- Middle: Scour around a pile, numerical simulation (Roulund, Sumer, Fredsoe & Michelsen, 2005, JFM, 534, 351-401)
- Bottom: Pipeline floatation accident due to liquefaction of seabed soil (Damgaard, Sumer, Teh, Palmer, Foray & Osorio, 2006, J. Waterway, Port, Coastal, and Ocean Eng. ASCE, 132, 300-309).