

MMC 2014
6 – 10 October

RILEM EAC Evaluation report

Delft University of Technology
Tecnalia, Spain
Co-organized by:
Tsinghua University, Beijing, China

Venue:
Tsinghua University
Beijing, China



Multi-scale Modeling Course for Concrete

TU Delft
October 28, 2014





Subject: Evaluation report MMC course 2014
Purpose: RILEM EAC feedback
Date report: 28-10-2014
Authors: Dr. EAB Koenders / Prof. E. Schlangen / Dr. G. Ye / Dr. J. Dolado / Dr. Z. Qian

Venue: Tsinghua University, Faculty of Civil Engineering, Beijing, China.



Figure 1: Left: Banner for MMC course announcement in the Faculty of Civil Engineering. Right: Gate at the campus of Tsinghua University, Beijing.

1. Course objective: Multi-scale Modelling Course for Concrete (MMC²)

This year the course was co-organized by Tsinghua University, Delft University of Technology and Tecnalia and was and hosted by Tsinghua University, Beijing, in China. The course took place in a lecture room that was specially allocated for this event. The main objective of the course was to teach post-doctoral students, PhD students and people from the industry the theory and practice of multi-scale modelling, including up-scaling techniques. The course was again structured in a 5 days program by teaching every day a different scale level. Similar to last year, this year we also followed the following teaching sequence Monday – Macrolevel, Tuesday – Mesolevel, Wednesday – Microlevel and finally Thursday – Nanolevel (see Appendix 1). On Friday, upscaling issues of multi-scale modelling were taught, and Prof Li from Tsinghua University was invited to give a lecture on Transport processes. During the coffee breaks students were asked to present themselves by giving a very short elevator pitch-like presentation about who they are and about their research interest. After the course students were asked to fill in a course evaluation form of which the results are attached to this report in Appendix 1. The course was closed by handing over a certificate to each student. The European students could sign in for a document from TU Delft who valued the course as an official Post graduate course of 4.5 ECTS points, and will be send to them after the course. In this way PhD students can now use the MMC course as an official course in their Post gradual program.



Figure 2: Lecture room.

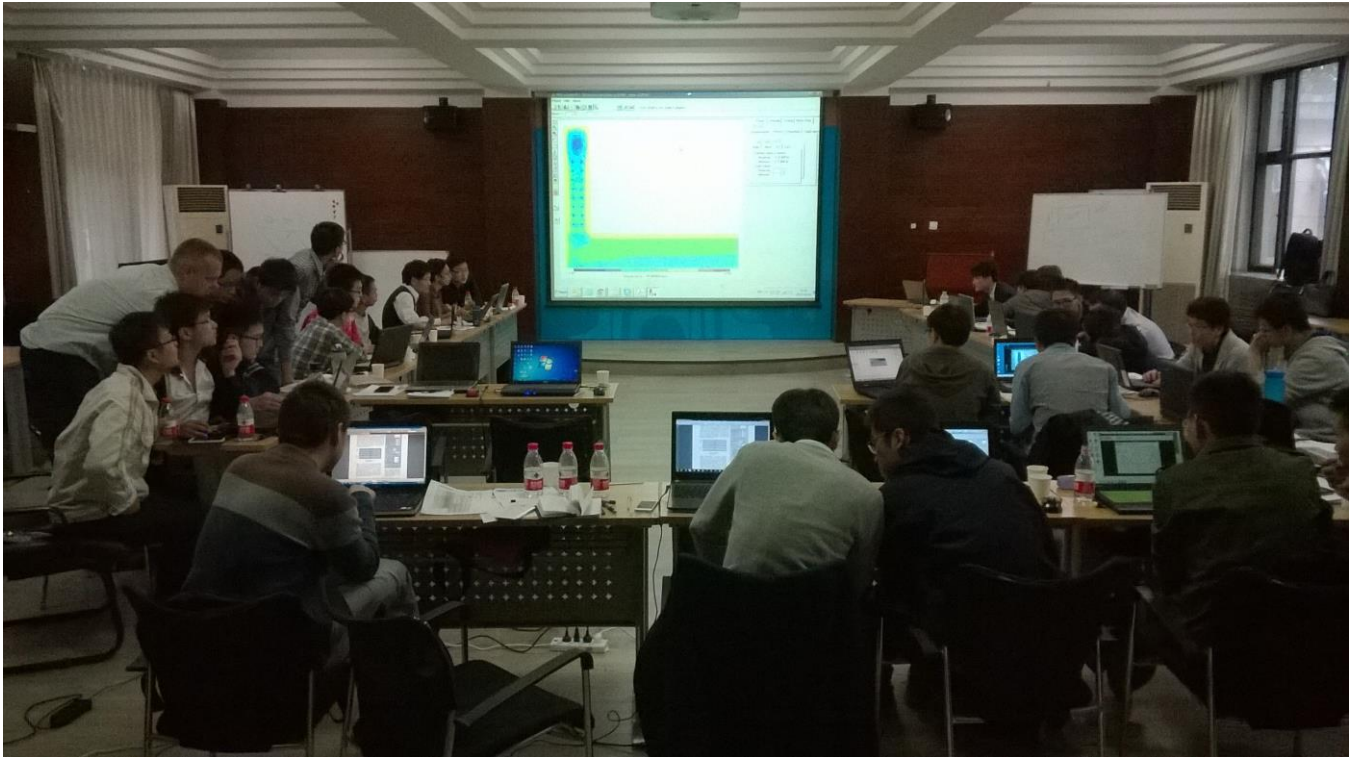


Fig 1: Professor Erik Schlangen is helping students with the macro-scale model examples during the practical afternoon sessions.

2. Program:

In line with the previous year's courses, the course program was designed in such a way that the course provides theory during the morning sessions and hands-on practical sessions with the use of software during the afternoon. This concept turned out to be very successful and was appreciated by the participants very much. The software was prepared and provided by the teachers and was part of the courses' lecture material. Students may keep the software and use it for their personal research interests.

During the introduction session on Monday morning the course was opened by Dr. Eddie Koenders. After that, Prof Erik Schlangen gave a welcome address on behalf of RILEM. He informed the students about the RILEM activities such as the Technical committees, the M&S Journal, etc, and informed them that PhD students are offered a 3 year free membership. The introduction of the teachers was done by Dr. Eddie Koenders after which a detailed overview of the course program was presented (Appendix 1). After this students were informed about the possibility to present themselves by means of a 5 minute elevator pitch during the coffee breaks. After this introduction session, Prof Erik Schlangen started the first course lecture about early age cracking at the macroscale (Fig. 1), using a FEM-based approach according to the FEMMASSE model. After that Dr. Eddie Koenders continued with the theoretical aspects of early age cracking. Then there was lunch and practical sessions in the afternoon. After lunch a demonstration of the FEM model was given and after this students could use the FEMMASSE software themselves to model early age problems of full scale structures.

Tuesday morning started with the theoretical aspects of mesolevel modelling and was given by Prof Erik Schlangen (Fig 2a), starting with the fundamental mechanisms and models that can be used for mesolevel modelling for fracture mechanics and internal damage assessment. During this session the theoretical backgrounds and considerations of 3D lattice modelling was lectured by Dr. Zhiwei Qian (Fig 2d). After lunch demonstrations of 3D lattice simulations followed and after this, students could use the 3D software themselves, and were asked to calculate a couple of examples.

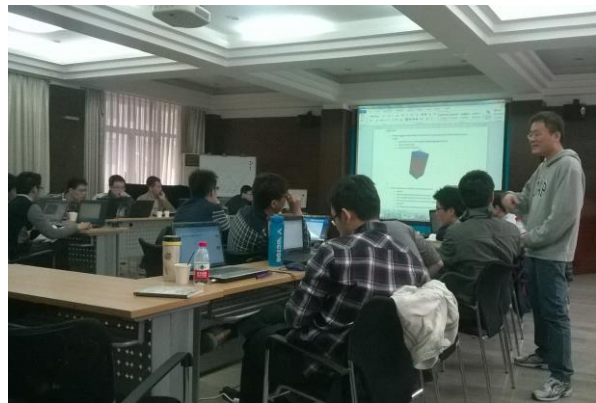


Fig 2a: Prof Erik teaching mesolevel modelling.

Fig 2b: Dr. Zhiwei is teaching mesolevel examples.

Wednesday morning the basic theory of microlevel modelling was lectured by Dr. Ye (Fig 3a) followed by properties calculated from the microstructural simulations by Dr. Eddie Koenders. In the afternoon, first demonstrations of the Hymostruc microlevel software was given followed by a session where students were asked to simulate a number of examples. This part turned out to be very well received by the students who could directly experience the link between theory and application of numerical simulation models on hydration and microstructure.

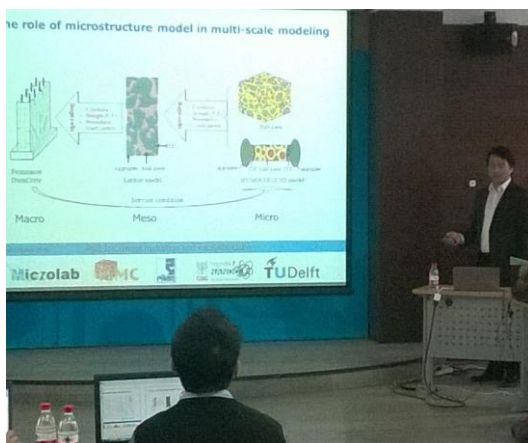


Fig 3a: Dr. Dr. Ye, teaching microlevel theory to the students.

Fig 3b, Dr. Jorge Dolado is explaining the nano-scale level modelling and examples.

After the microlevel day, the nanolevel modelling theory was lectured on Thursday. This course lecture part was taught by Dr. Jorge Dolado (Fig 3b). After the theoretical morning session, a guided lab-tour was organized by Prof Li to the Structures and Materials laboratories of the faculty of civil engineering of Tsinghua University. During the tour, the equipment and running tests in the structural and materials lab were explained and Prof Li provided the students with detailed information on the setups that can be used for materials testing (Fig 4).

After lunch, the afternoon the practical sessions on nanolevel modelling started with a demonstration of the software. Dr. Dolado demonstrated CODICE software that bridges the micro to the nanolevel and where students could become familiar with the detailed nano-structures that are behind the C-S-H layers that are calculated at the microscale level, i.e. the inner and outer product layers. After that, students could use the software themselves and work out the exercises. In the evening, a MMC dinner was organized for all students, teachers and organizing staff (Fig 5).



Fig 4: Prof Li during the labtour, informing students about the gas-permeability test setup.

Friday morning started with a lecture from Dr. Eddie Koenders addressing upscaling theory from nano to micro. After that, Dr. Zhiwei Qian continued with upscaling theory from micro to macro. Both lectures were emphasizing the scale effects in time and space and show how to transfer information between the scale levels. After this, Prof Li was invited to give a lecture on thermo-mechanical transport problems and Dr. Ye gave the last lecture of the MMC course on the multi-scale simulation of durability. Emphasis was on simulating the chloride ingress and diffusion coefficient using Lattice Boltzmann schematization. A total overview of the MMC program is given in Appendix 1.



Fig 5: Multi-scale table for the MMC dinner!



3. Number of persons:

The official number of registered participants for the MMC course was 31 (excluding teachers). From these, 6 were from universities outside China. However, due to visa and other issues the final group consisted of 27 Chinese and 4 European students. In total the group of students represented 5 different countries.

4. Target group:

The target group was as expected, i.e. PhD and Postdoc level and complied with the objective of the MMC course. This year one student was from a Swiss construction company. The focus of the co-organizers was mainly on training PhD students. However, the students were very active, created a good atmosphere for discussions with the teachers and provided fresh and helpful input to the course.

5. Country of participants:

The attendees of the MMC course came from 5 different countries such as, Belgium, Israel, Japan, UK. A complete overview of the participants is given in Appendix 2. A group photo of the MMC course participants is shown in Appendix 3.

6. Teachers:

The teachers; Prof Dr E Schlangen (TUD) / Dr G. Ye (TUD) / Dr E.A.B. Koenders (TUD, course responsible) / Dr. Z.Qian (TUD) / Dr. J. Dolado (Tecnalia, Spain) / Prof Li (Guest teacher Tsinghua), (see Appendix 3 for photo) all teachers showed professional skills and all were very much able to present inspiring lectures to the students during the theoretical morning sessions as well as during the practical afternoon sessions and supervision of the students. The different backgrounds and experiences of the teachers is considered very important to achieve a diverse and comprehensive program of lectures, examples and exercises, and provides a broad vision on the different aspects associated with Multiscale modelling.

7. Frequency and co-organization:

The MMC course is an official annual RILEM supported Educational Course. Up till now, the MMC course has been organized 7 times, i.e. in Delft (2008), Nanjing (2009), Bilbao (2010), Delft (2011), Nanjing (2012), Delft (2013) and this year in Beijing (2014). Next year the MMC course will again be organized again by TU Delft in cooperation with Tecnalia. The selection of the teachers, lecture material and course program will be under final responsibility of TU Delft.

8. Date:

The basic idea is to organize the course every year in the fall. In this way, the course is expected to be complementary to the CMC Microscopy course (also RILEM EAC course) which is organized in the spring. This year the MMC course was organized from October 6 to 10.

9. RILEM support:

RILEM guidelines are followed and a presentation about RILEM is given during the introduction session of the course. During this MMC course in Nanjing the RILEM presentation was given by Prof Erik Schlangen as part of the opening ceremony.

10. Flyer:

Every year a new flyer is designed (Appendix 4) showing the details of the MMC course including the logos of the participating organizations and the RILEM logo. Furthermore, since the event is an official RILEM course, MMC course information will also be available via the RILEM website. Besides this, the MMC course has also announced at the TU Delft and Tecnalia website.

11. Evaluation:

Every year, after the course, students are asked to fill in an evaluation form. The results of this evaluation are used to improve the course for the coming year. An overview of the results is provided in Appendix 5



APPENDIX 1

Course program 2014



Program of the MMC 2014 course

MMC 2014	Time	Monday - 6 oct	Tuesday - 7 Oct	Wednesday - 8 Oct	Thursday - 9 Oct	Friday - 10 Oct
Theory	9.00 - 9.30	Welcome and Introduction session				
	9.30 - 10.15	Macro modelling FEM/ASSE (1)	Meso modelling Fracture mechanics	Micro modelling Hydration / Microstructure	Nano modelling CSH development	Nano - to - Macro Upscaling techniques
	10.15 - 10.45	Coffee break + Introduction participants	Coffee break + Introduction participants	Coffee break + Introduction participants	Coffee break + Introduction participants	Coffee break
	10.45 - 11.30	Macro modelling (2)			Nano modeling Basic Building Blocks	Durability modelling from nano to macro
	11:30 - 12:15	Macro modelling Temperatures & Stresses	Meso modelling Internal micro damage	Micro modelling Properties	Lab visit Tsinghua	Transport modelling Certificates
	12.30 - 14.00	Lunch	Lunch	Lunch	Lunch	Lunch
Practical / Tutorial sessions	14.00 - 15.30	Macro FEM/ASSE Demonstrations	Meso Lattice: Demonstrations	Micro Hystrostruc: Demonstrations	Nano Tecnalia codes Demonstrations	
	15.30 - 16.00	Coffee break + Introduction participants	Coffee break + Introduction participants	Coffee break + Introduction participants	Coffee break + Introduction participants	
	16.00 - 18.00	Macro FEM/ASSE Practical sessions	Meso Lattice: Practical sessions	Micro Hystrostruc Practical sessions	Nano Practical sessions	
	18.00	Free	Free	MMC Course dinner	Free	Free



APPENDIX 2

List of participants



Nr	Name	Title	Affiliation	Country	Email
1	Yiqun Guo	Msc.	South China University of Technology	China	fatqun@qq.com
2	Yin Cao	MSc	China Building Materials Academy	China	307794327@qq.com
3	Ma Rui	PhD candidate	Southeast University	China	230149131@seu.edu.cn
4	Dongyi Lei	PhD candidate	Southeast University	China	dongge0379@126.com
5	Zheng kai Chen	PhD candidate	Southeast University	China	zhengkai0213@163.com
6	Chaojun Wan	professor	Chongqing University	China	cjwan@cqu.edu.cn
7	Wocheng Huang	PhD	Guang Xi University	China	gxuhwc@qq.com
8	Lingfeng Zhang	MSc	Nanjing University of Technology	China	lingfengzhang@nitech.edu.cn
9	Xuandong Chen	MSc	Nanjing University of Technology	China	947884982@qq.com
10	Fengdi Guo	PhD student	Tongji University	China	gfd0206@163.com
11	Fei Chen	PhD candidate	Southeast University	China	chenfei77ly@gmail.com
12	Bing Qi	PhD	Southeast University	China	qibing5@126.com
13	Xiang Gao	Mr.	Tsinghua University	China	gaoxiang0601@gmaiul.com
14	Wei qiang Guo	Mr.	Tsinghua University	China	15201342510@163.com
15	Siming Liang	Mr.	Tsinghua University	China	liangsiming0624@163.com
16	Guidong Mi	Mr.	Tsinghua University	China	miguidong@gmail.com
17	Dongdong Zhang	Mr.	Tsinghua University	China	244889381@qq.com
18	Gil Inbal Lifshitz	PhD student	Ben-Gurion University	Israel	sherzerg@gmail.com
19	Qing-feng	Dr.	Shanghai Jiao Tong University		henrylqf@163.com
20	Xiaosheng Wei	Prof. Dr.	Huazhong University of Science and Technology	China	1781275039@qq.com
21	Paolo Tudori	Mr.		Switzerland	tudori@imm.ch
22	Alice Alipour	Prof.	University of Massachusetts Amherst	United States	alipour@umass.edu
23	Behrouz Shafei	Prof.	University of Massachusetts Amherst	United States	shafei@engin.umass.edu
24	Zhiyuan Lin		Univerisity of Strathclyde	United Kingdom	ai3.yuan@hotmail.com
25	Muhammad Islahuddin		Building Physics Section, KU Leuven	Belgium	islah.islahuddin@bwk.kuleuven.be
26	Go Igarashi	Dr.	Tohoku University	Japan	go.igarashi@archi.tohoku.ac.jp
27	Liyang Yin	MSc	Southeast University	China	ying664@163.com
28	Zijian Jia	PhD	Southeast University	China	jzjzj18@163.com
29	Ying Ding	PhD	Tongji University	China	ruolidoudou@126.com
30	Shunquan Zhang	PhD	Southeast university	China	tenrence@qq.com
31	Cheng Liu	PhD	Southeast university	China	chengliu520@163.com

* Due to late visa issues Prof Alipour and Prof Shafei could finally not attend the MMC course.



APPENDIX 3

Group photo MMC 2014



Group photo MMC 2014 @ Tsinghua University, Beijing, China.



APPENDIX 4

Flyer MMC 2014



CURRENT POSITION (PROOF REQUIRED)	Costs (EURO)
PARTICIPANTS FROM CHINA	350 EURO
PH.D., MSc-STUDENTS, POSTDOCS	500 EURO
PROFESSORS / ACADEMIC PROFESSIONALS	1250 EURO
PROFESSIONALS FROM INDUSTRY	2550 EURO

THE COST FOR 2014 INCLUDES

- COURSE MATERIAL -> HANDOUTS
- LUNCH AND REFRESHMENTS DURING THE DAY
- ONE COURSE DINNER

PAYMENT INFORMATION
CHECK OUR WEBSITE: [HTTP://WWW.MMC.CTG.TUDELFT.NL](http://www.mmc.ctg.tu-delft.nl)

CANCELLATION POLICY
 FOR WRITTEN CANCELLATIONS RECEIVED BEFORE 1 SEPTEMBER 2014, REGISTRATION FEES WILL BE FULLY REFUNDED. FOR WRITTEN CANCELLATIONS RECEIVED AFTER 1 SEPTEMBER 2014 NO REFUND WILL BE MADE.

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Multiscale Modelling course for Concrete
Beijing, China

6-10 October MMC
 12-14 October 2014 CONMOD
 Tsinghua University

TU Delft Delft University of Technology
 tecnia

THE MULTI-SCALE MODELLING COURSE FOR CONCRETE (MMC2) PROVIDES THE OPPORTUNITY FOR PARTICIPANTS TO BECOME FAMILIAR WITH MODELLING CEMENTITIOUS MATERIALS AT FOUR DIFFERENT LEVELS OF DETAIL. DIFFERENT WAYS OF SCHEMATIZATION AND NUMERICAL APPROACHES ARE CONSIDERED TO SIMULATE THE CHEMICAL, PHYSICAL AND MECHANICAL BEHAVIOUR OF CEMENTITIOUS MATERIALS. THE MAIN BACK-BONE OF THE COURSE ARE THE DIFFERENT MODELLING LEVELS AT WHICH HETEROGENEOUS AND COMPOSITE CEMENTITIOUS MATERIALS CAN BE SCHEMATIZED AND HOW THESE DIFFERENT LEVELS CAN "COMMUNICATE" BY MEANS OF DIFFERENT UPSCALING TECHNIQUES. THE MODELLING LEVELS THAT WILL BE LEARNED IN THIS COURSE ARE THE "MACRO-, MESO-, MICRO-, AND NANO-LEVEL". THE COURSE EMPHASIZES THE DIFFERENT MODELLING APPROACHES FOR EACH SCALE LEVEL AND SHOWS A COUPLE OF CONCEPTUAL TECHNIQUES ON HOW THE "NUMERICAL GAPS" CAN BE BRIDGED. THE COURSE IS COMMENCING WITH THE MACRO-SCALE LEVEL WHERE EMPHASIS IS ON EARLY-AGE TEMPERATURE AND STRESSES DEVELOPMENT OF HARDENING CONCRETE, AND HOW COMMERCIAL FEM SOFTWARE CAN BE APPLIED. THE MESO-LEVEL DEALS WITH FRACTURE MECHANIC AND BRITTLENESS WITH EMPHASIS ON THE LATTICE MODEL, FOLLOWED BY THE MICRO-LEVEL WHICH IS ON THE HYDRATION AND MICROSTRUCTURE PROPERTIES, AND FINALLY, THE NANO-LEVEL DEALING WITH THE BACKGROUNDS C-S-H GEL USING MOLECULAR DYNAMICS AND AB-INITIO APPROACHES.

FOR THE COURSE PARTICIPANTS, THE MMC2 COURSE PROVIDES THE CHANCE TO ACQUIRE A GLANCE OF THE VARIETIES OF THE NUMERICAL POSSIBILITIES IN AN INTENSIVE COURSE WEEK OF LECTURES AND WORKSHOPS. THE COURSE IS SET-UP IN SUCH A WAY THAT THEORETICAL LECTURES AND PRACTICAL WORKSHOPS ALTERNATE DAY BY DAY AND, BESIDES THIS, COURSE PARTICIPANTS ARE ALSO INVITED TO PRESENT THEIR OWN WORK DURING ELEVATOR PITCH PRESENTATIONS. THERE WILL BE A MIX OF EVENTS AND TOPICS CENTRED AROUND THE THEME OF MULTI-SCALE MODELLING THAT MAKES THE COURSE VERY "DYNAMIC".

MMC-CONMOD
 FOLLOWING THE SUCCESS OF THE PAST SIX MMC2 COURSES ORGANIZED SO FAR (DELFT 2008, NANJING 2009, BILBAO 2010, DELFT 2011, NANJING 2012, DELFT 2013), THIS YEAR THE COURSE WILL BE ORGANIZED IN CONJUNCTION WITH THE CONMOD 2014 CONFERENCE IN BEIJING, IN CHINA, AND WILL BE CO-ORGANIZED BY THE MICROLAB OF DELFT UNIVERSITY OF TECHNOLOGY AND TSINGHUA UNIVERSITY. LECTURERS WILL BE PROVIDED BY TEACHERS FROM DELFT UNIVERSITY OF TECHNOLOGY (MACRO, MESO AND MICRO), TECNIA (NANO MODELLING), AND TSINGHUA UNIVERSITY (DURABILITY MODELLING). THE UPSCALING LECTURES WILL BE A JOINT CONTRIBUTION FROM TU DELFT AND TECNIA. MODELS WILL BE PRESENTED THAT ADDRESS ALL SCALE LEVELS WHICH MAKES THE COURSE A REAL MULTI-SCALE MODELLING COURSE, I.E. FROM MACRO - TO - NANO!

SUMMARY:

THIS YEAR MMC WILL BE ORGANIZED IN CONJUNCTION WITH CONMOD 2014.

ADDRESSING LECTURES FOR MACRO TO NANO-SCALE MODELLING. TEACHERS FROM DELFT UNIVERSITY OF TECHNOLOGY, TECNIA AND TSINGHUA UNIVERSITY.

THEORETICAL AND PRACTICAL WORKSHOPS ON MULTI-SCALE MODELLING. MODELLING MECHANICAL, PHYSICAL AND CHEMICAL BEHAVIOUR ON DIFFERENT SCALE LEVELS.

EMPHASIZING DIFFERENT APPROACHES OF MODELLING AND HOW "NUMERICAL GAPS" CAN BE BRIDGED.

LECTURE MATERIAL:
 LECTURE MATERIAL CONSISTS OF A USB-STICK CONTAINING A PDF OF ALL SLIDES PRESENTED DURING THE COURSE, LITERATURE, PRACTICAL EXAMPLES, A COPY OF THE BASIC SOFTWARE THAT WILL ALSO BE USED DURING THE PRACTICAL SESSIONS.

FOLLOWING THE SUCCESS OF THE PAST 7 MMC2 COURSES ORGANIZED SO FAR (DELFT 2008, NANJING 2009, BILBAO 2010, DELFT 2011, NANJING 2012, DELFT 2013), THIS YEAR THE COURSE WILL TAKE PLACE IN BEIJING, CHINA, AND WILL BE ORGANIZED BY THE MICROLAB OF DELFT UNIVERSITY OF TECHNOLOGY. LECTURERS ARE FROM DELFT UNIVERSITY OF TECHNOLOGY, THE NETHERLANDS AND TECNIA RESEARCH INSTITUTE FOR NANO TECHNOLOGY, SPAIN, WHERE THE MICRO- TO MACRO-SCALE LEVEL WILL BE PROVIDED BY TEACHERS FROM DELFT UNIVERSITY AND THE NANO-SCALE LEVEL BY A TEACHER FROM TECNIA. THE UPSCALING LECTURES WILL BE A JOINT CONTRIBUTION OF LECTURERS FROM TU DELFT AND TECNIA. MODELS WILL BE PRESENTED THAT ADDRESS THE INTERFACES BETWEEN ALL LEVELS, WHICH MAKE THE COURSE A REAL MULTI-SCALE MODELLING COURSE, I.E. FROM NANO-TO-MACRO!

THE MMC COURSE IS DESIGNED FOR:

- GRADUATE STUDENTS (PH.D, MSc STUDENTS AND POSTDOCS)
- PROFESSORS AND OTHER ACADEMIC PROFESSIONALS
- PROFESSIONALS FROM INDUSTRY

THE COURSE IS INTENDED FOR PEOPLE WORKING IN AREAS WHERE MODELLING KNOWLEDGE OF CEMENT BASED MATERIALS CAN GIVE YOU THE EDGE IN UNDERSTANDING PROBLEMS AND FINDING SOLUTIONS.

THE COURSE LEVEL IS SUITED FOR PH.D CANDIDATES.

NO SPECIAL PRELIMINARY OR INITIAL TRAINING IS REQUIRED FOR THIS COURSE, ALTHOUGH IT IS PRESUMED THAT THE PARTICIPANT HAS BASIC KNOWLEDGE OF CONCRETE AND CONCRETE COMPOSITION.

IN OCTOBER 2014 THE ANNUAL FALL COURSE MULTISCALE MODELLING FOR CONCRETE WILL BE HELD FOR THE 8TH TIME. THE COURSE IS SCHEDULED FROM 6-10 OCTOBER FOLLOWED BY CONMOD: 12-14 OCTOBER 2014.

VENUE:
 MMC-CONMOD WILL BE HELD ON THE CAMPUS OF TSINGHUA UNIVERSITY, SITUATED IN THE NORTHERN-WEST PART OF BEIJING CITY BETWEEN THE 4TH AND 5TH RING ROADS, AND ABOUT 15KM FROM THE ANCIENT BEIJING CITY CENTER. THE SITUATION IS CONVENIENT FOR BOTH ROAD AND PUBLIC TRANSPORT (BUS AND SUBWAY). SUBWAY: LINE 4 STATION YUANMINGYUAN (EXIT B); LINE 13 STATION WUJIAOKOU ROAD TRANSPORT (FROM BEIJING CAPITAL INT'L AIRPORT): HIGHWAY S12 TO 4TH RING ROAD, EXIT NO. 46 (ZHONGNANJUN).

TSINGHUA CAMPUS
 TSINGHUA UNIVERSITY, FOUNDED IN 1911, IS A LEADING UNIVERSITY IN SCIENCE AND TECHNOLOGY IN CHINA. ITS 19 SCHOOLS AND 56 DEPARTMENTS OCCUPY A CAMPUS OF 389 HECTARES, COVERING WIDE-SPREAD DISCIPLINES OF SCIENCE, TECHNOLOGY, MEDICINE, LAW, LITERATURE AND ART. THE ENROLLED STUDENTS AMOUNT TO 41,000 WITH 15,000 UNDERGRADUATES AND 26,000 GRADUATES. THE PERSONNEL INCLUDE 6,000 FACULTY MEMBERS AND 1,300 POSTDOCTORAL FELLOWS, AMONG WHICH ARE 41 MEMBERS OF CHINA ACADEMY OF SCIENCE (CAS) AND 33 MEMBERS OF CHINA ACADEMY OF ENGINEERING (CAE).

www.conmod14-design-2014



APPENDIX 5

Evaluation results MMC 2014



Evaluation results MMC 2014

Participant evaluation results	
5 = High, 1 = Low	
Pre course information	
available information before course started	4,36
telephonic contact	4,24
written contact	4,27
Workbook	4,55
Teaching material	
context of teaching material	4,59
content of teaching material	4,50
practical usability	4,45
level of teaching material (high,good,low = 5,4,3)	4,26
General evaluation	
opinion total course	4,45
was course what you expected	4,55
Location and services	
accessibility	4,52
quality	4,68
coffee breaks and lunches	4,68
course dinner	4,86

(Average results of 22 students)

Overall MMC 2014

