东南大学 2022 年国际暑期学校项目总结报告

Introduction of SEU International Summer School Program

土木工程基础设施建设前沿国际暑期学校

International Summer School of Frontiers inCivil Engineering Infrastructure

1、 项目开展情况

1.1 暑期项目 A

土木工程研究前沿：院士知名专家最新研究讲座

Frontiers in Research: Seminar Series on Civil Engineering – State of the Art

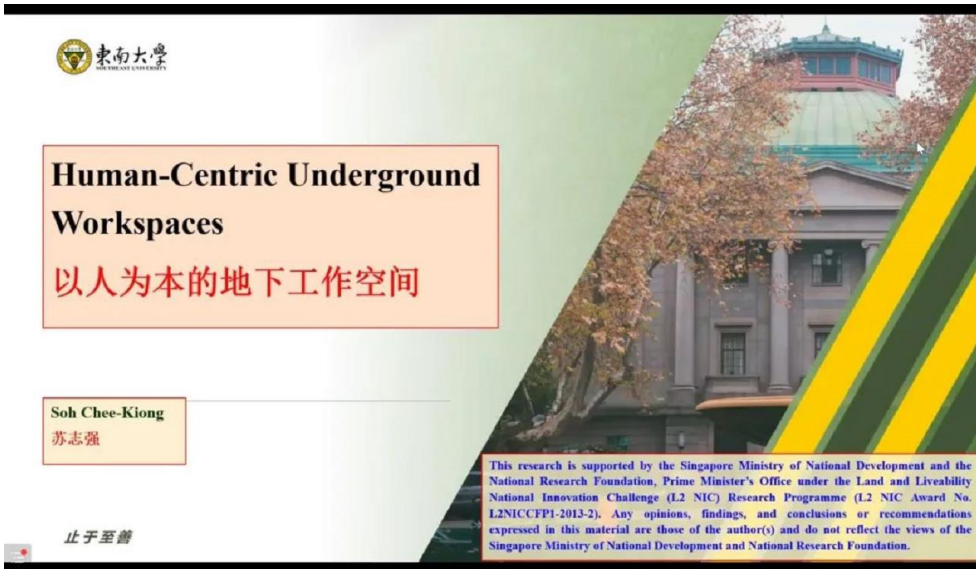
在土木工程国际前沿领域开展学术素养、科研方法等方面的讲座，主题涵盖土木工程主干学科包括结构工程、防灾工程、岩土工程、桥梁与隧道工程、市政工程、工程管理以及工程力学。项目采取专家系列讲座与国家重大工程参观相结合、国内与国外专家共同参与、现场讲座与国际网络课程相融合等多种形式。通过系列讲座活动，对参加暑期学校的学生在专业知识、学术视野、科研方法、素质拓展和学术思想等方面进行训练提高。本项目包括 16 个课堂学时，课程考核采用提交研学论文方式，考核合格者可获得相应 SRTP 学分，成绩优异者可认定土木工程最新动态课程学分。

表 1. 院士知名专家最新研究讲座课程安排

Date	Time	Presenter	Topic	Tencent Meeting
7.2	11:00-12:30	Soh Chee Kiong, Professor, Southeast University	Human-Centric Underground Workspaces	683-115-470
7.2	14:30-15:30	Alessandro Marzani, Professor,Università di Bologna	Elastic metasurfaces for Rayleigh waves control and mitigation	683-115-470
7.2	15:30-16:30	Lennart Elfgren	Testing of bridges to failure – Experiences from Sweden to improve assessment of existing structures	683-115-470

7.3	10:30-12:00	Tom Iseley Professor, Purdue University	Asset Management: A Strategy for Disaster Prevention	683-115-470
7.5	09:00-10:30	Guoxing Lu, Professor, Swinburne University of Technology	Impact and energy absorption of origami materials and structures	504-989-312
7.5	10:30-12:00	Jian Zhang, Professor,University of California, Los Angeles	Seismic protection of highway bridges using performance based design and optimization	407-926-297

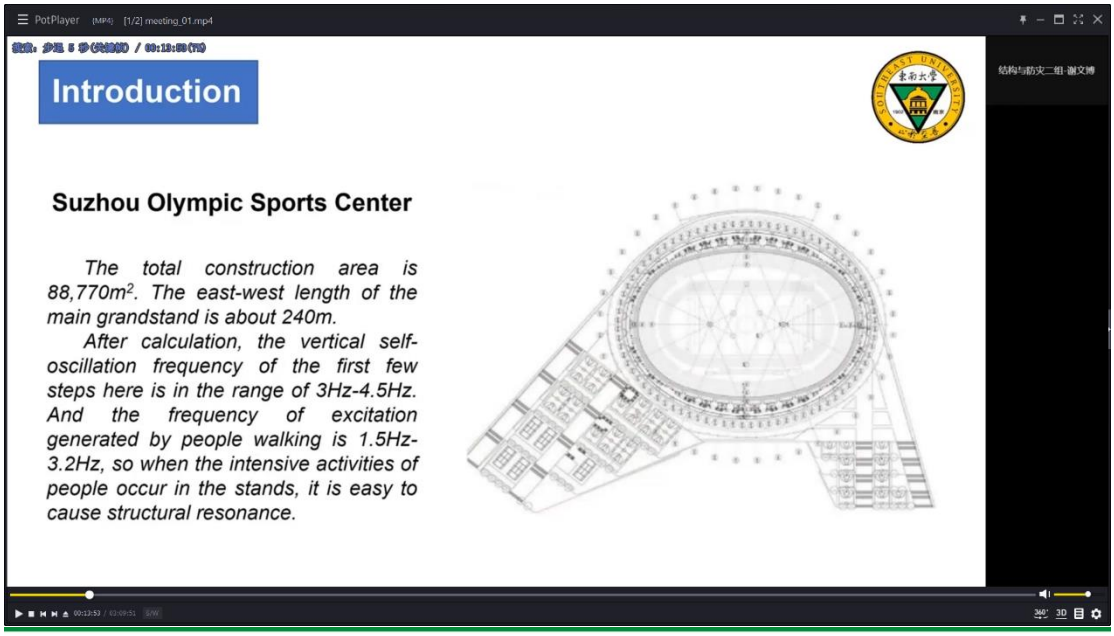
课堂情况（部分）：

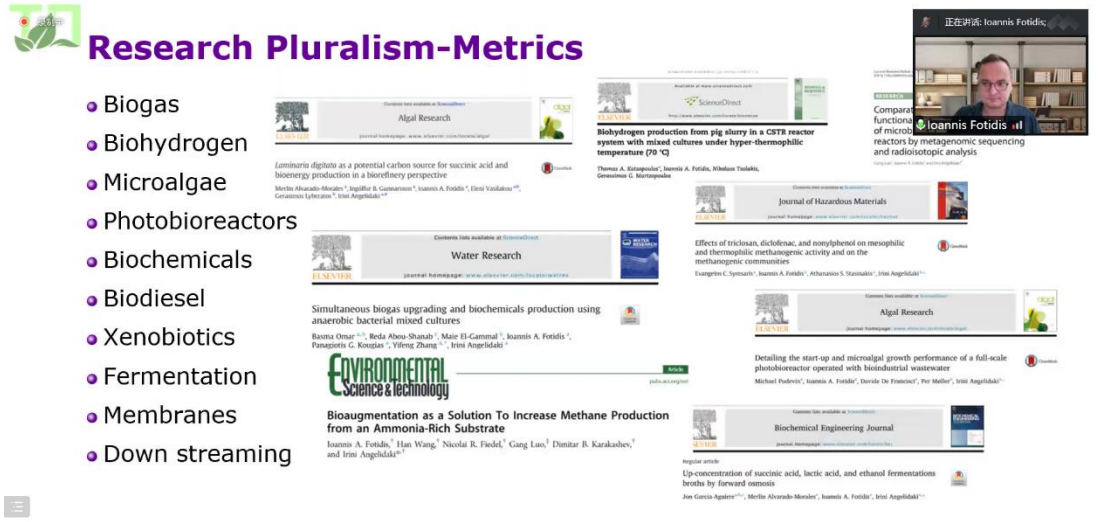


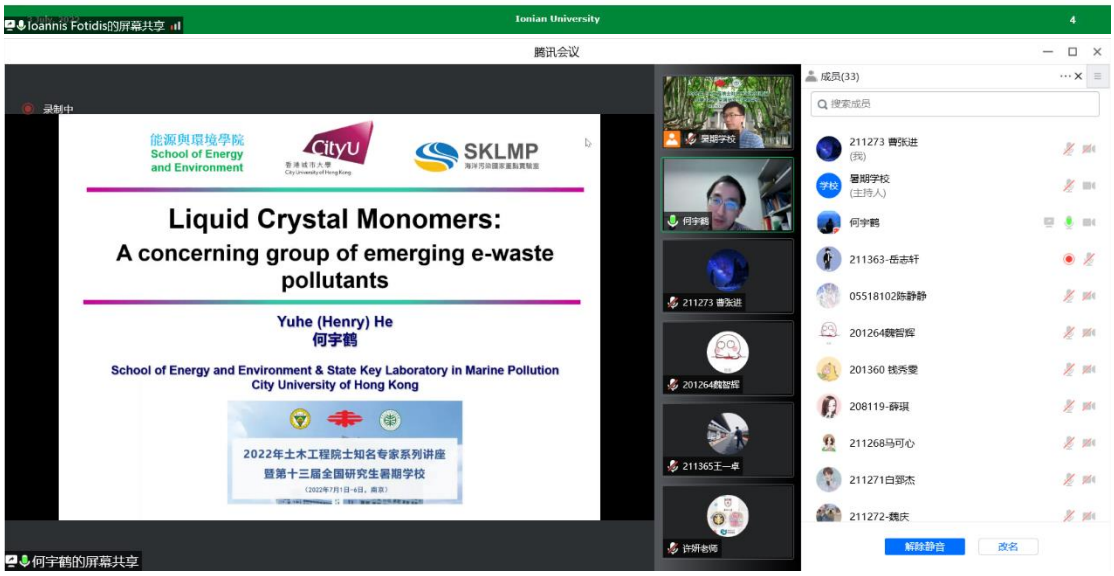

Chee Kiong
Other aspects of human centric UG space designs
以人为本的其他方面地下空间设计
Bright colours 鲜艳明亮的色彩
Making full use of the landscape 充分利用景观
Proximity to nature 接近自然
Thermal comfort 热舒适
Continued connectivity 持
https://secure.i.telegraph.co.uk/multimedia/archive/01782/wikileaks-bunker-2_1782755i.jpg
https://cdn.pen.com/ imaging/i/dam/b8f48c37-1fe6-4205-9e6c-e044fe0d5829/95959/west-tunnel-remained-open-for-use.jpg
Clear signs 明显标志
Several exit points 几个出口
Acoustic comfort 声响舒适性
Visibility and accessibility to AG
Interconnection of spaces 地上空间互联的可视性和可达性
5264

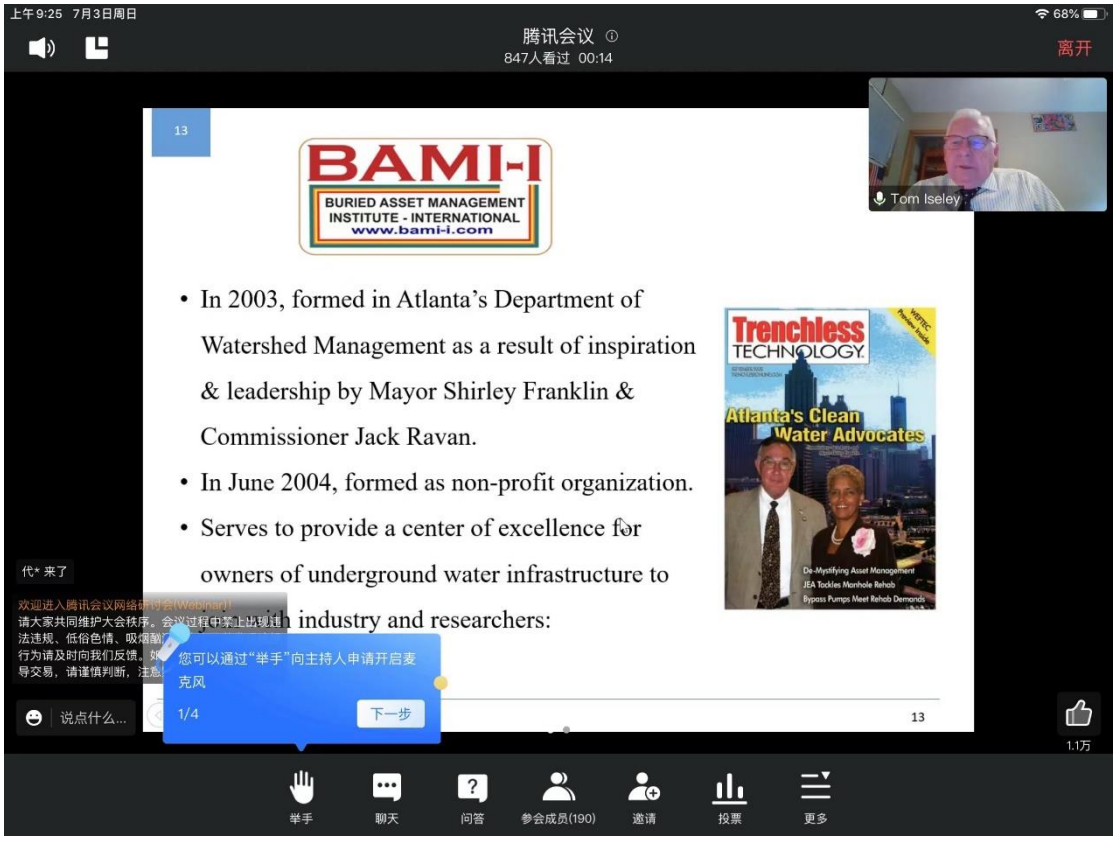

APPROACHES - METHODS
International Representative Survey 国际的代表性调查
Concerns about Spaces
Personality
Attitudes towards UG
Nature
>2,000 participants 参与者
Age: 18 to 65
Representative samples
Singapore, London, Shanghai, Montreal
Cohort Workplace study 工作场所队列研究
~400 workers
Baseline
Month 4
Month 12
Spirometry
Obesity
Stress
Blood Pressure
Sedentary time
Melatonin
Vitamin D
Actigraphy / Wearables
Air quality
Thermal comfort
Decision Making
Memory, attention testing
>400 participants 参与者 – 142 UG, 322 AG
Details: A very well matched sample: typical full-time office workers along with some workshop workers located UG or AG with. Matched in terms of age, organizational characteristics, chronotypes etc. N=142 UG [Mostly level B4], 322, AG. None or limited access to windows (for both AG and UG)
Lab Experiments and New technologies 实验室实验和新技术
Psycho-cognitve Assessment
Wearables
Virtual reality
Electro-encephalography
>1,000 participants 参与者
Combining Brain Responses, Virtual Reality, Design and Engineering


PURDUE UNIVERSITY
Asset Management:
A Strategy for Disaster Prevention
PURDUE UNIVERSITY
Construction Engineering and Management


PotPlayer
Introduction
Suzhou Olympic Sports Center
The total construction area is 88,770m². The east-west length of the main grandstand is about 240m.
After calculation, the vertical self-oscillation frequency of the first few steps here is in the range of 3Hz-4.5Hz. And the frequency of excitation generated by people walking is 1.5Hz-3.2Hz, so when the intensive activities of people occur in the stands, it is easy to cause structural resonance.
结构与防灾二组-谢文博


Research Pluralism-Metrics
Biogas
Biohydrogen
Microalgae
Photobioreactors
Biochemicals
Biodiesel
Xenobiotics
Fermentation
Membranes
Down streaming
正在讲话: Ioannis Fotidis;
Ioannis Fotidis
Algal Research
Biohydrogen production from pig slurry in a CSTR reactor system with mixed cultures under hyper-thermophilic temperature (70 °C)
Journal of Hazardous Materials
Water Research
Simultaneous biogas upgrading and biochemicals production using anaerobic bacterial mixed cultures
Effects of triclosan, diclofenac, and nonylphenol on mesophilic and thermophilic methanogenic activity and on the methanogenic communities
Algal Research
Detailing the start-up and microalgal growth performance of a full-scale photobioreactor operated with bioindustrial wastewater
Environmental Science & Technology
Bioaugmentation as a Solution To Increase Methane Production from an Ammonia-Rich Substrate
Biochemical Engineering Journal
Up-concentration of succinic acid, lactic acid, and ethanol fermentations broths by forward osmosis


Ioannis Fotidis的屏幕共享
Ionian University
4
腾讯会议
录制中
能源與環境學院
School of Energy and Environment
CityU
SKLMP
Liquid Crystal Monomers:
A concerning group of emerging e-waste pollutants
Yuhe (Henry) He
何宇鹤
School of Energy and Environment & State Key Laboratory in Marine Pollution
City University of Hong Kong
2022年土木工程院士知名专家系列讲座
暨第十三届全国研究生暑期学校
何宇鹤的屏幕共享
成员(33)
搜索成员
211273 曹张进 (我)
暑期学校 (主持人)
何宇鹤
211363-岳志轩
05518102陈静静
201264魏智辉
201360 钱秀雯
208119-薛琪
211268马可心
211271白郅杰
211272-魏庆
解除静音
改名


上午9:25 7月3日周日
68%
腾讯会议
847人看过 00:14
离开
13
BAMI-I
BURIED ASSET MANAGEMENT INSTITUTE - INTERNATIONAL
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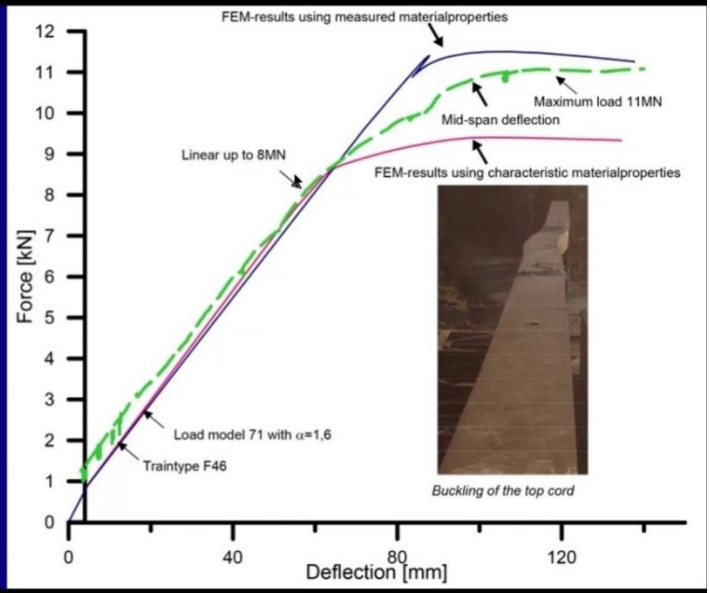
Tom Iseley
• In 2003, formed in Atlanta's Department of Watershed Management as a result of inspiration & leadership by Mayor Shirley Franklin & Commissioner Jack Ravan.
• In June 2004, formed as non-profit organization.
• Serves to provide a center of excellence for owners of underground water infrastructure to
industry and researchers:
Trenchless TECHNOLOGY
Atlanta's Clean Water Advocates
代* 来了
您可以通过"举手"向主持人申请开启麦克风
1/4
下一步
说点什么...
1.1万
举手
聊天
问答
参会成员(190)
邀请
投票
更多


您正在观看Alessandro Marza...的屏幕
08:59
620人看过
演讲者视图
锁定画面
東南大學 Southeast University
土木工程学院
Elastic metasurfaces for Rayleigh waves control and mitigation
Alessandro
Alma Mater Studiorum
Saturday, July 2nd, 2022
Speaking: Alessandro Marza...
徐赵东-黄兴淮
Alessandro Marzani
暑期学校
高舒畅:
张巧: welcome
2724-土木工程-李欣荣:
1677 土木水利 周宇昂:
2822135-结构防灾-张恩光: welcome
张延泰-南京林业大学:
说点什么...
Video_2022-07-02_163028下午
音0:02:14
举手
聊天
问答
参会成员(99+)
邀请
应用
设置
离开会议
1:57:16

Åby Bridge
No fatigue failure
Much higher load than expected



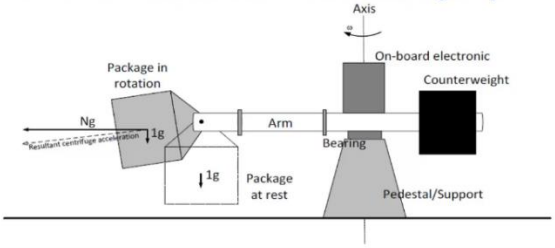
Lennart Elfgren的屏幕共享

腾讯会议

Why centrifuge modelling?

THE UNIVERSITY OF WESTERN AUSTRALIA

- Geotechnical behavior is strongly stress dependent
- Conducting reduced scale model testing at single gravity (1g) can lead to erroneous results
- Field scale stress levels (and hence the correct behaviour) can be obtained by spinning a 1:N reduced scale model at N times Earth's gravity



Conleth O'Loughlin的屏幕共享

腾讯会议

Rediscovery of Sembawang Hot Spring

Artesian Flow of Hot Spring

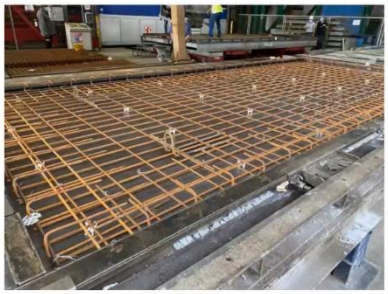
Hot spring has water pressure > 5 m above ground.

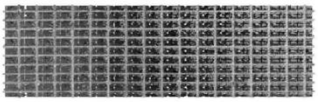
赵坚的屏幕共享

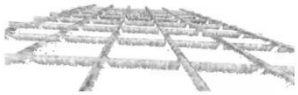
QA/QC (PC formwork and rebar)

東南大學 SOUTHEAST UNIVERSITY

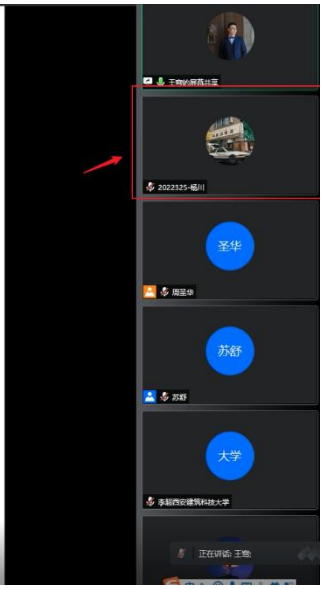
- Dimension of formwork
- Diameter and spacing of reinforcements







22



PROJECT MANAGEMENT
EDUCATION AT THE UNIVERSITY OF MARYLAND

Understanding Industry 5.0

Defining Industry 5.0

- Human-centric
- Sustainable
- Resilience

Industry 5.0 recognizes the power of industry to achieve societal goals beyond jobs and growth to become a resilient provider of prosperity, by making production respect the boundaries of our planet and placing the wellbeing of the industry worker at the center of the production process.

Industry 5.0 European Commission doi: 10.2777/308407

A. JAMES CLARK SCHOOL OF ENGINEERING ■ DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

ZHONG YOU (由衷)

Professor of Engineering Science

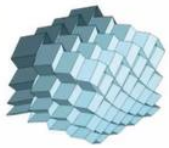
Department of Engineering Science

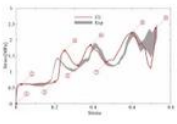
Compact Folding of Flat Arrays Composed of Panels with Uniform Thickness

5th July 2022

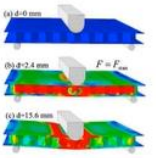
腾讯会议

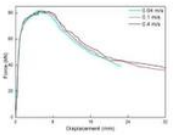
Origami-inspired metamaterials



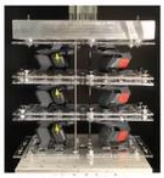


L. Yuan, Dai, Song, Ma, Chen, Mater. & Des., 2020

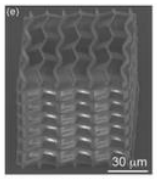




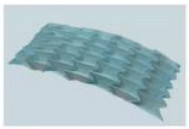
X. M. Xiang, You, Lu, Compos. Struct. 2018



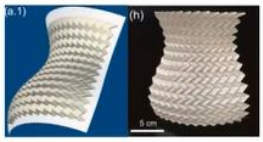
H. Fang, Chu, Xia, Wang, Adv. Mat. 2019



Z. Lin, Novelino, Wei, Alderete, Paulino, Espinosa, Krishnaswamy, Small, 2020



X. Deng, Zhao, Cai, Liu, Mech. Mach. Theory, 2020



X. Dang, Feng, Plucinsky, James, Duan, Wang, IJSS, 2021

3

刘珂的屏幕共享

刘珂

双博

刘双博

建国

蔡建国

李健男

杜

220221412-王以宁

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57%

腾讯会议

00:37

离开

卢国兴

Outline

- Introduction
- Quasi-static compression
- Dynamic compression – multi cells
- A problem: fracture of 3D printed materials under impact
- Conclusions

2

说点什么...

解除静音 开启视频 共享屏幕 成员(69) 聊天 邀请 更多

1.2 暑期项目 B

土木工程行业前沿：重大基础设施智慧建造与运维讲座
Frontiers in Industry: The seminars on intelligent construction and operation of key infrastructure

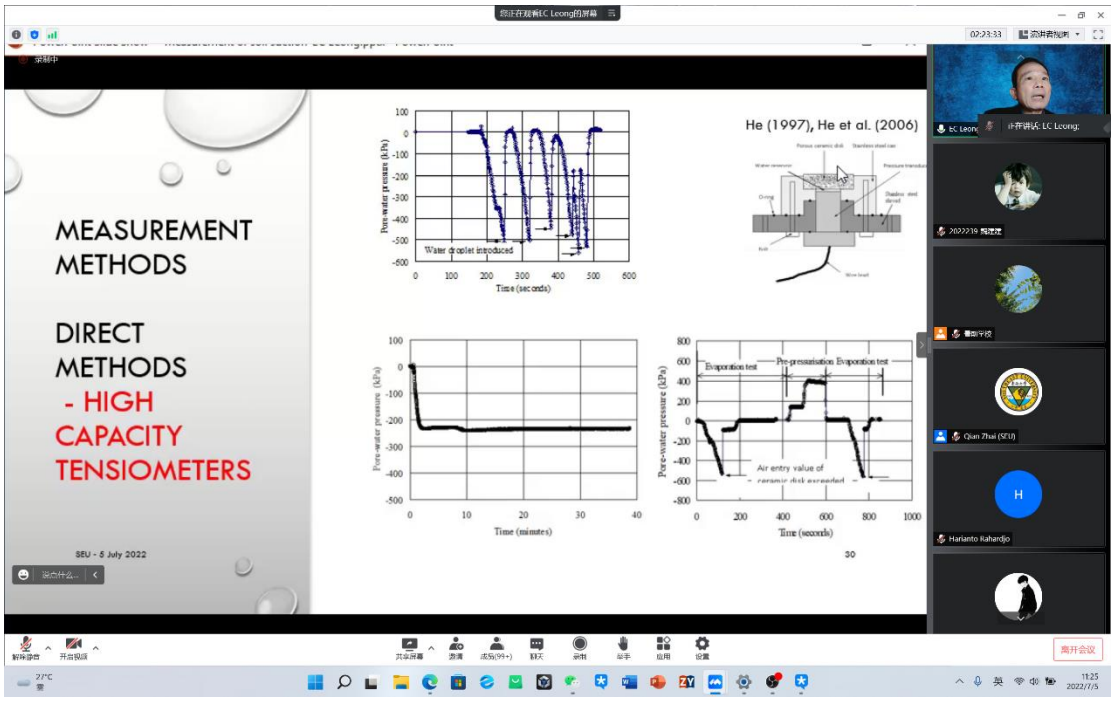
本课程的教学目的在于使土木工程专业学生能对当前的智慧建造与运维技术有系统性的学习与认知。接触智能传感、健康监测、机构评估、预防性维护管理等概念知识，从多学科交叉融合的角度了解当代土木工程结构与先进信息技术的亲密接触与融合应用。通过国际前沿讲座拓宽程专业学生的知识面，培养适应现代化建设的综合应用型人才。本项目包括 12 个课堂学时，课程考核采用提交研学论文方式，智能建造专业同学作为专业课程智慧建造与运维线上学习部分，其他专业考核合格者可获得相应 SRTP 学分。

表 2. 院士知名专家最新研究讲座课程安排

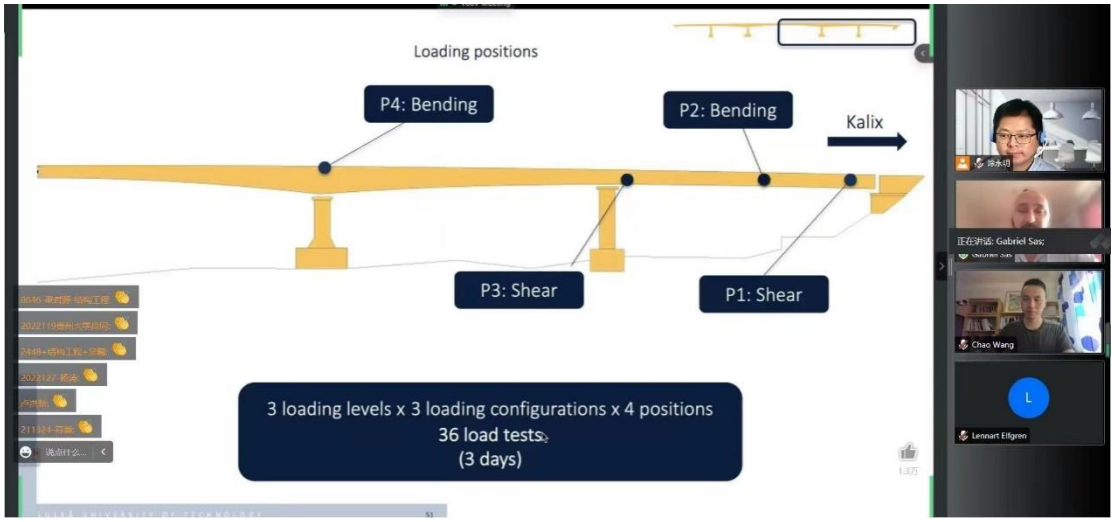
Date	Time	Presenter	Topic	Tencent Meeting
7.3	9:20-10:40	Ali Mostafavi, Associate Professor	Smart Resilience: Harnessing Big Data and AI to Augment Disaster Resilience	668-8587-2319
7.3	10:30-12:00	Xianqiao Wang, Associate Professor, University of Georgia	Brain Folding Patterns: A Tale of Variability and Regularity	621-6300-0536
7.3	14:30-15:30	Gabriel Sas	How can structural engineers contribute to sustainability?	683-115-470
7.3	16:00-17:30	Miroslaw J. Skibniewski, Professor, University of Maryland	Construction 5.0 - implementation challenges and opportunities	668-8587-2319
7.5	8:45-9:45	HariantoRahardjo, Professor, Nanyang Technological University	Application of unsaturated soil mechanics to solving rainfall-induced slope failure	984-2991-0482

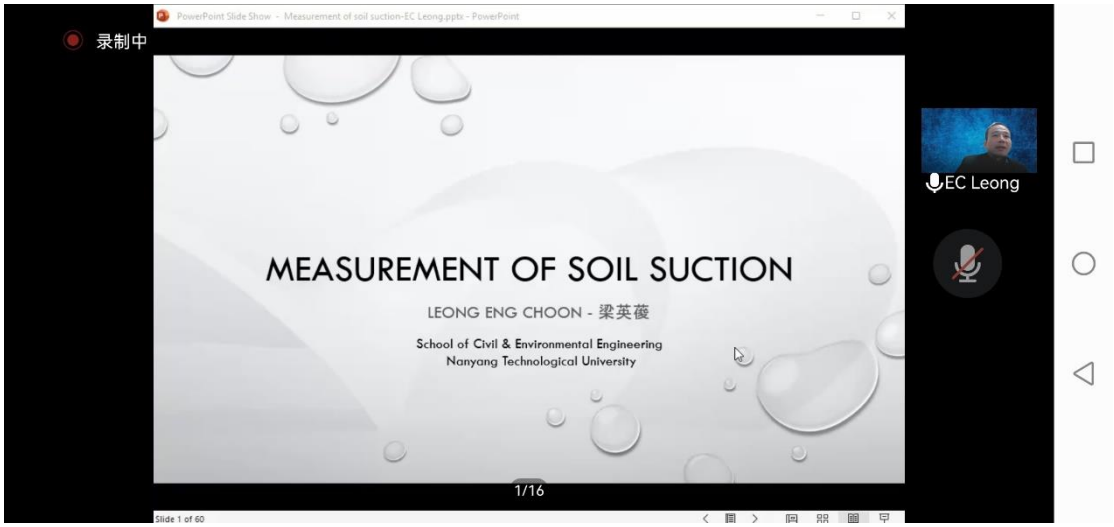
7.5	10:30-12:00	Conleth O'Loughlin，Professor, University of Western Australia	Offshore Geotechnical Challenges and Solutions – Visual Highlights of the Role of Centrifuge Modelling	629-368-290
7.5	16:00-17:30	Zhong You, Professor, Oxford University	Compact folding of flat arrays composed of panels with uniform thickness	504-989-312

课堂情况（部分）：


MEASUREMENT METHODS
DIRECT METHODS
- HIGH CAPACITY TENSIOMETERS
SEU - 5 July 2022
He (1997), He et al. (2006)
Water droplet introduced
Pore-water pressure (kPa)
Time (seconds)
Time (minutes)
Evaporation test
Pre-pressurisation Evaporation test
Air entry value of ceramic disk exceeded
30


录制中
NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE
Application of unsaturated soil mechanics to solving rainfall-induced slope failure
Presented by
Harianto Rahardjo
Elevation (m)
163
5
School of Civil and Environmental Engineering
Nanyang Technological University
Singapore
Harianto...


Loading positions
P4: Bending
P2: Bending
Kalix
P3: Shear
P1: Shear
3 loading levels x 3 loading configurations x 4 positions
36 load tests
(3 days)
正在讲话: Gabriel Sas;
Chao Wang
Lennart Elfgren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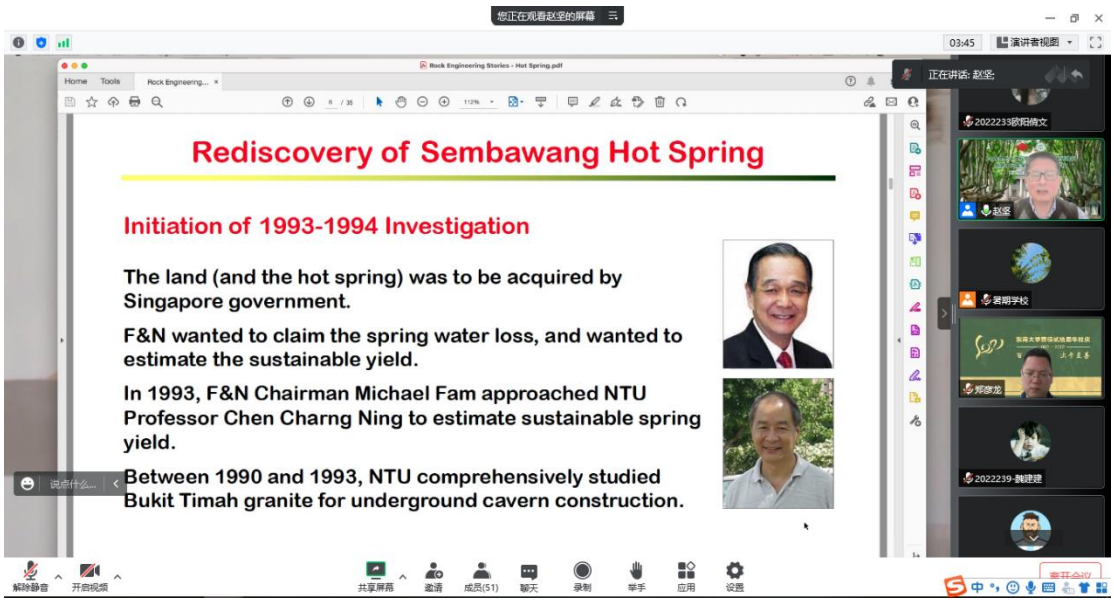
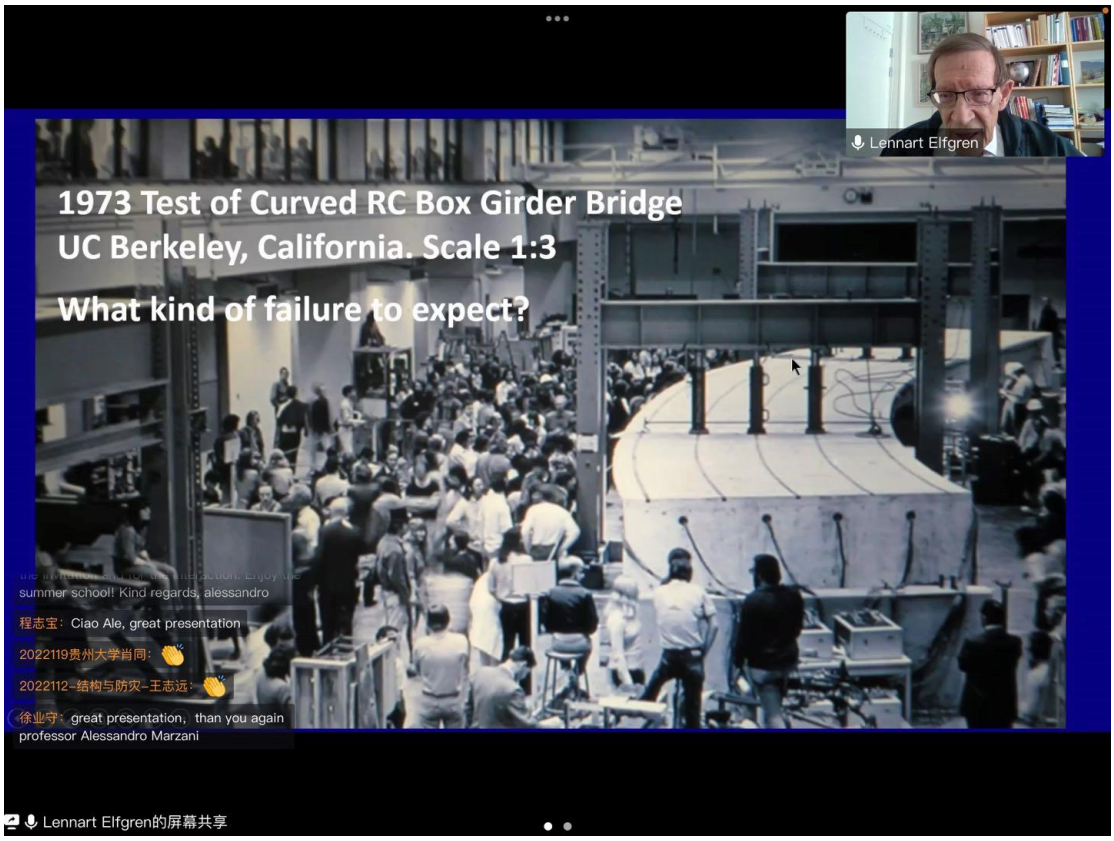
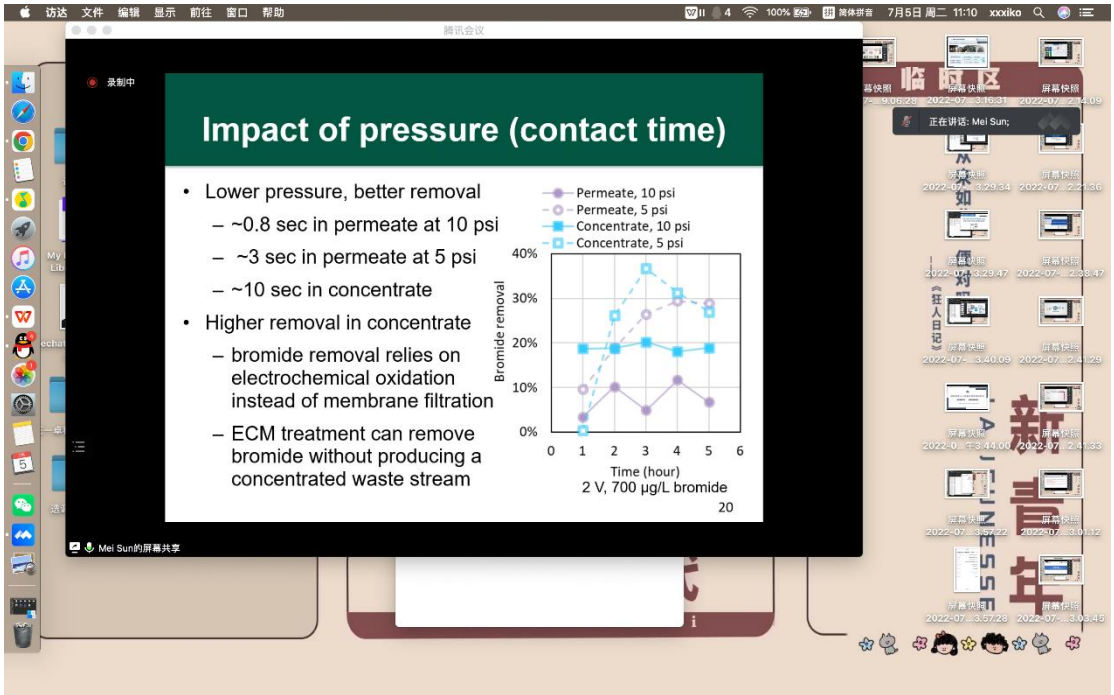
PowerPoint Slide Show - Measurement of soil suction-EC Leong.pptx - PowerPoint
MEASUREMENT OF SOIL SUCTION
LEONG ENG CHOON - 梁英薇
School of Civil & Environmental Engineering
Nanyang Technological University
1/16
Slide 1 of 60
EC Leong


录制中
Université d'Ottawa | University of Ottawa
Design of Foundations for Unsaturated Soils
By
Sai K. Vanapalli, Ph.D., P.Eng.
Professor of Civil Engineering, University of Ottawa
Ottawa, Canada
Presentation for Undergraduate/ Graduate Students of
School of Civil Engineering, Southeast University,
Nanjing, China
5th July, 2022
1/14
uOttawa
Xavier


您正在观看赵坚的屏幕
03:45
演讲者视图
正在讲话: 赵坚
Rock Engineering Stories - Hot Spring.pdf
Rediscovery of Sembawang Hot Spring
Initiation of 1993-1994 Investigation
The land (and the hot spring) was to be acquired by Singapore government.
F&N wanted to claim the spring water loss, and wanted to estimate the sustainable yield.
In 1993, F&N Chairman Michael Fam approached NTU Professor Chen Charng Ning to estimate sustainable spring yield.
Between 1990 and 1993, NTU comprehensively studied Bukit Timah granite for underground cavern construction.
2022233欧阳倩文
赵坚
暑期学校
郑彦龙
2022239-魏建建
解除静音
开启视频
共享屏幕
邀请
成员(51)
聊天
录制
举手
应用
设置


Lennart Elfgren
1973 Test of Curved RC Box Girder Bridge
UC Berkeley, California. Scale 1:3
What kind of failure to expect?
summer school! Kind regards, alessandro
程志宝：Ciao Ale, great presentation
2022119贵州大学肖同：
2022112-结构与防灾-王志远：
徐业守：great presentation，than you again professor Alessandro Marzani
Lennart Elfgren的屏幕共享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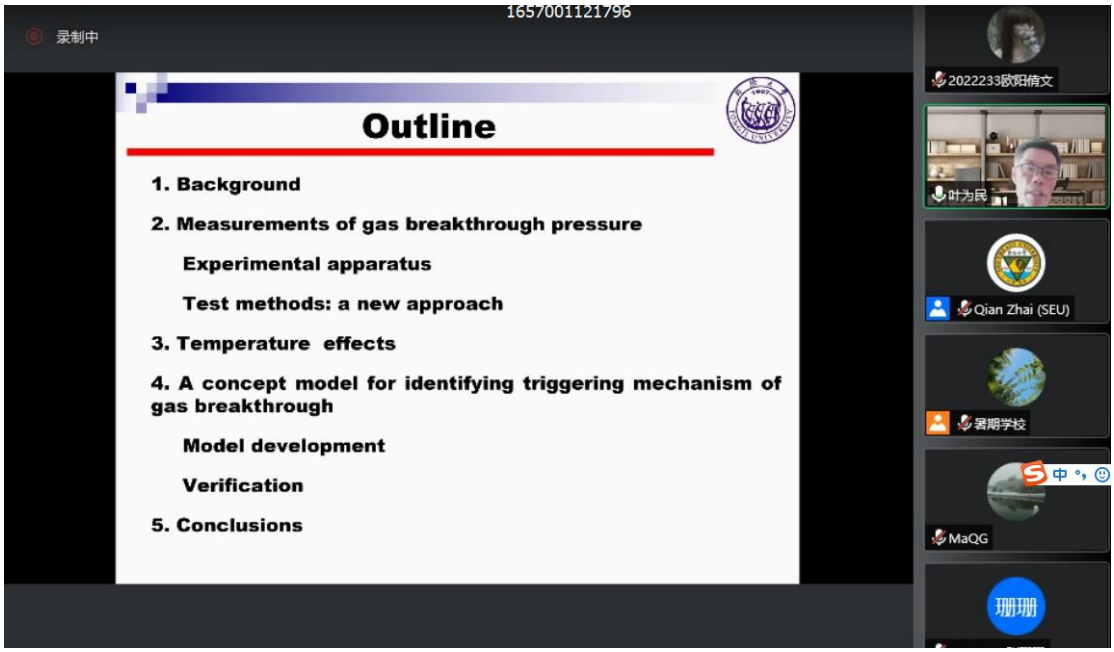
Impact of pressure (contact time)
• Lower pressure, better removal
– ~0.8 sec in permeate at 10 psi
– ~3 sec in permeate at 5 psi
– ~10 sec in concentrate
• Higher removal in concentrate
– bromide removal relies on electrochemical oxidation instead of membrane filtration
– ECM treatment can remove bromide without producing a concentrated waste stream
Permeate, 10 psi
Permeate, 5 psi
Concentrate, 10 psi
Concentrate, 5 psi
Bromide removal
40%
30%
20%
10%
0%
0 1 2 3 4 5 6
Time (hour)
2 V, 700 μg/L bromide
20
Mei Sun的屏幕共享
正在讲话: Mei Sun;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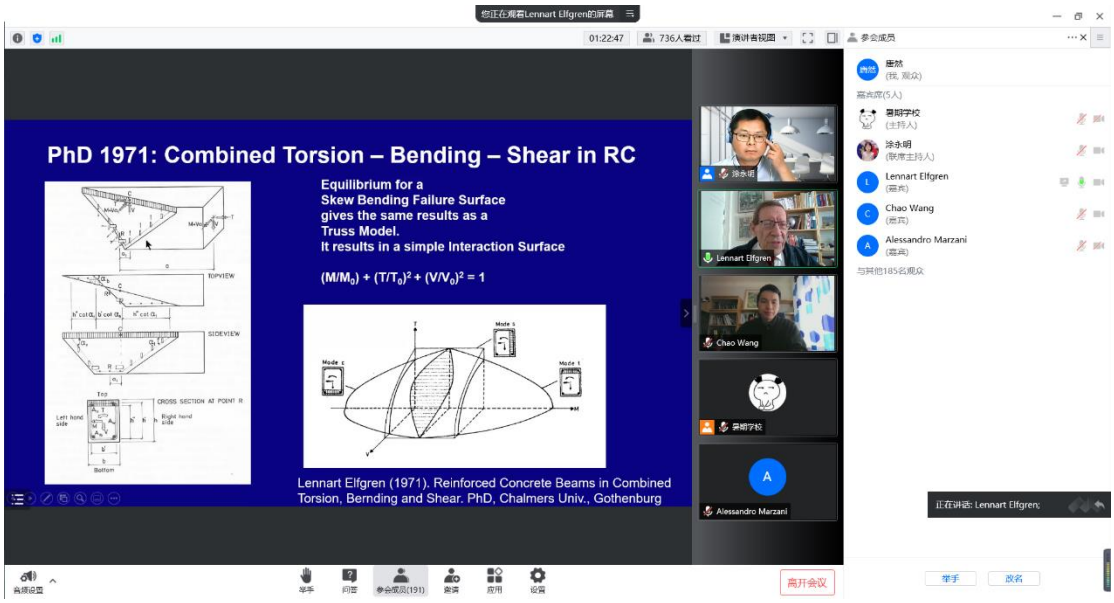
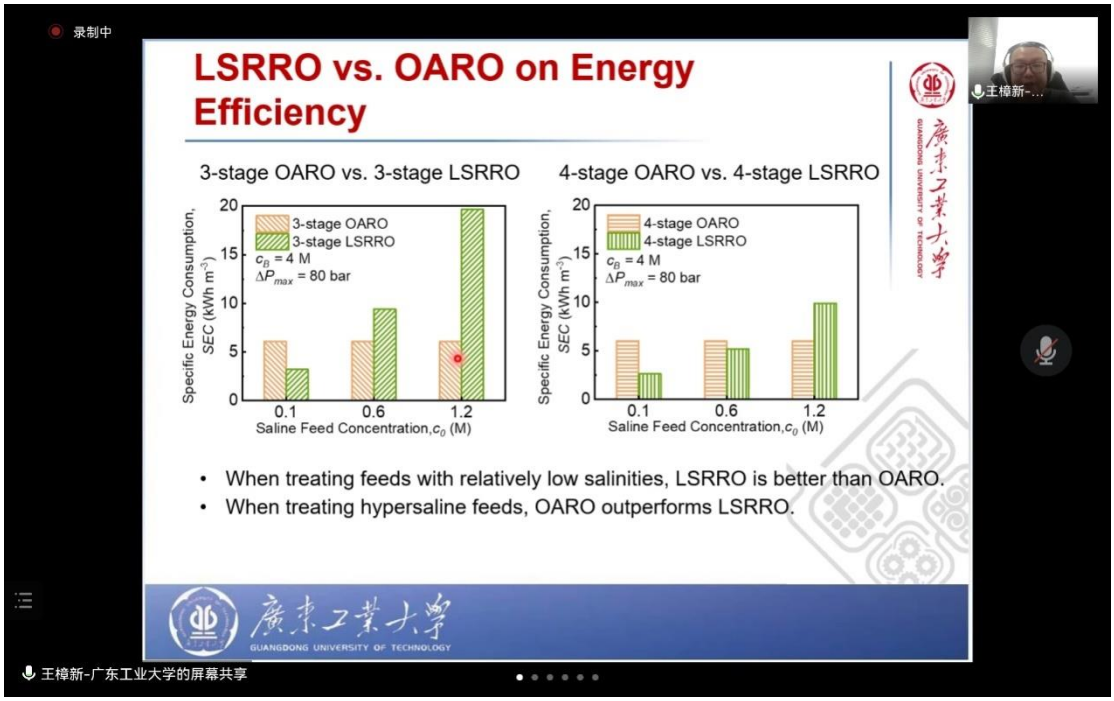
Outline
1. Background
2. Measurements of gas breakthrough pressure
Experimental apparatus
Test methods: a new approach
3. Temperature effects
4. A concept model for identifying triggering mechanism of gas breakthrough
Model development
Verification
5. Conclusions
2022233欧阳倩文
叶为民
Qian Zhai (SEU)
暑期学校
MaQG
珊珊


您正在观看Lennart Elfgren的屏幕
PhD 1971: Combined Torsion – Bending – Shear in RC
Equilibrium for a
Skew Bending Failure Surface
gives the same results as a
Truss Model.
It results in a simple Interaction Surface
$(M/M_0) + (T/T_0)^2 + (V/V_0)^2 = 1$
Lennart Elfgren (1971). Reinforced Concrete Beams in Combined Torsion, Bending and Shear. PhD, Chalmers Univ., Gothenburg
Lennart Elfgren
Chao Wang
Alessandro Marzani
正在讲话: Lennart Elfgren


腾讯会议
HOW CAN STRUCTURAL ENGINEERS CONTRIBUTE TO SUSTAINABILITY ?
A lecture for the undergraduate/graduate summer school at the School of Civil Engineering, Southeast University, Nanjing, China.
Gabriel Sas, Chair Professor in Structural Engineering
gabriel.sas@ltu.se
涂永明
Gabriel Sas
Chao Wang
暑期学校
Lennart Elfgren
Gabriel Sas的屏幕共享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LSRRO vs. OARO on Energy Efficiency
3-stage OARO vs. 3-stage LSRRO
4-stage OARO vs. 4-stage LSRRO
3-stage OARO
3-stage LSRRO
4-stage OARO
4-stage LSRRO
c_B = 4 M
ΔP_{max} = 80 bar
Specific Energy Consumption, SEC (kWh m^{-3})
Saline Feed Concentration, c_0 (M)
When treating feeds with relatively low salinities, LSRRO is better than OARO.
When treating hypersaline feeds, OARO outperforms LSRRO.
GUANGDONG UNIVERSITY OF TECHNOLOGY
王樟新-...
王樟新-广东工业大学的屏幕共享

1.3 暑期项目 C

土木工程市场前沿：数字经济时代建筑业转型升级探索课程
Frontiers in Market: Exploring the Transformation and Upgrading of the Construction industry in the Era of Digital Economy

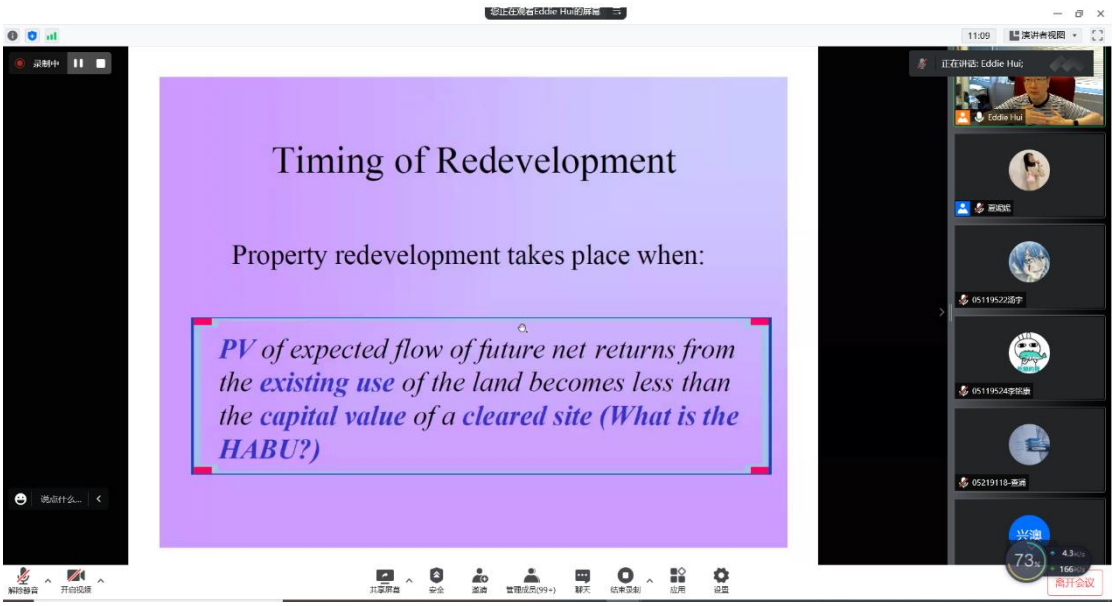
新基建背景下，社会整体经济和数字经济高速发展，房地产产业链各环节的技术、服务等将进行多维度的创新，房产行业数字化变革加速推进。新基建正在带动房地产高质量建设，给房地产经济注入了新的动力。香港理工大学建设与房地产经济系在房地产经济学研究领域享有盛誉，课程由香港理工大学教授全英文讲授。将为学生提供了解房地产价值变化影响因素的概念框架，将介绍领域最新研究成果，着重培养学生的应用知识和能力、了解该领域的研究前沿。本课程为工程管理专业的专业课程，共 32 学时，考核包括课堂作业和课程论文，其他专业同学考核合格后可认定 SRTP 学分。

Instructor: **Prof. Eddie C.M. Hui**, Department of Building and Real Estate, The Hong Kong Polytechnic University

表 3. 数字经济时代建筑业转型升级探索课程安排

Date	Time	Topic
7.1	08:30-12:00	Intro to RE Economics
	14:00-17:00	
7.2	08:30-12:00	RE Market Analysis
	14:00-17:00	
7.3	08:30-12:00	Government Intervention
	14:00-17:00	
7.4	08:30-12:00	Government Policy and Reform
	14:00-17:00	
7.5	08:30-12:00	Economic Analysis of Urban Issues
	14:00-17:00	

课堂情况（部分）：



新基建背景下，社会整体经济和数字经济高速发展，房地产产业链各环节的技术、服务等将进行多维度的创新，房产行业数字化变革加速推进。新基建正在带动房地产高质量建设，给房地产经济注入了新的动力。本课程中的基本理论和方法，有助于针对我国具体国情开展更深入的研究，制定更为稳健的房地产发展政策。课程设置对于学生了解宏观经济政策、工程伦理、市场价值、学科发展具有重要意义，能够地对专业技术和知识有效补充。

房地产经济学涉及很多经济学的基本理论和方法，这些理论和方法起源于西方，因此开展该课程的全英文授课十分必要。香港理工大学建设与房地产经济系在房地产经济学研究领域享有盛誉，其中多名教授担任房地产领域顶级期刊（比如 ASCE Urban Planning and Development）的主编或副主编。除了学术研究，香港理工大学还参与了香港房地产众多政策的咨询和制定，这对大陆房地产经济的研究和发展具有重要的借鉴意义。

课程为学生提供了解房地产价值变化影响因素的概念框架，涉及房地产市场的原则和做法，着重培养学生在房地产和投资领域应用知识和技能的能力。此外，还将介绍房地产领域的最新研究成果，学生能够了解该领域的研究前沿，以便开展后续学术研究。

1.4 暑期项目 D

土木工程人才国际化沟通力培养：跨文化交际专项训练
Cross-cultural communication skills—Listening & Speaking for Civil Engineering

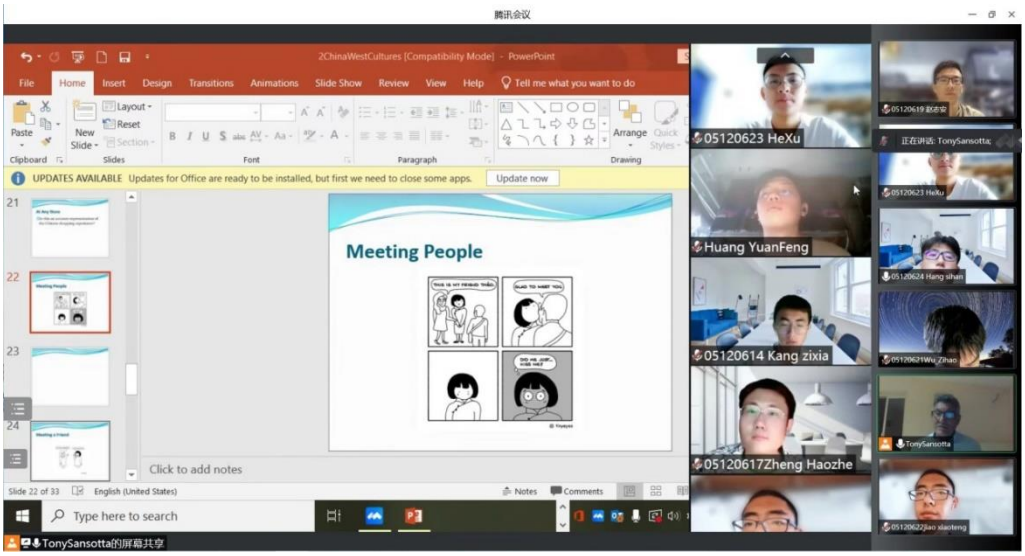
高层次国际化土木类专业人才应同时具备国际化专业能力、了解国际文化、有国际战略眼光与处理国际关系能力。土木工程学院以“国际化人才培养专项”作为试点，于 2022 年暑期全新启动本课程。课程以国际学术交流为背景，以跨文化交际策略为重点，提升学习者在留学深造、国际交流活动过程中所需的跨文化交际知识与技能。教学采用“讲座+研讨”的形式，每次课程围绕一个跨文化交际主题，进行交际策略讲解，并组织可能研讨和口语活动。共 32 学时，考核包括课堂作业和口头报告，同学考核合格后可认定 SRTP 学分。

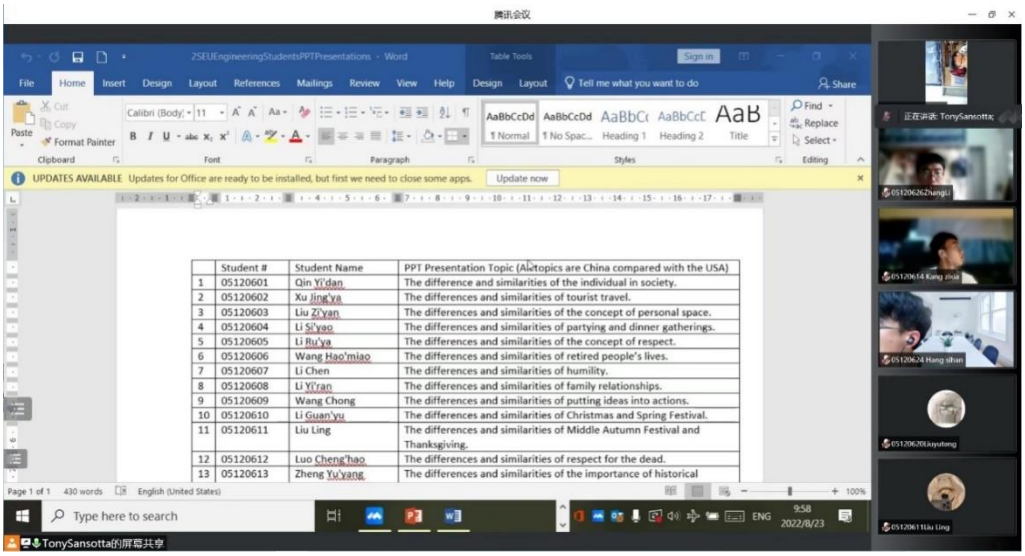
Instructor: **Tony Sansotta**, School of Foreign Studies, Nanjing University

表 4. 跨文化交际专项训练课程安排

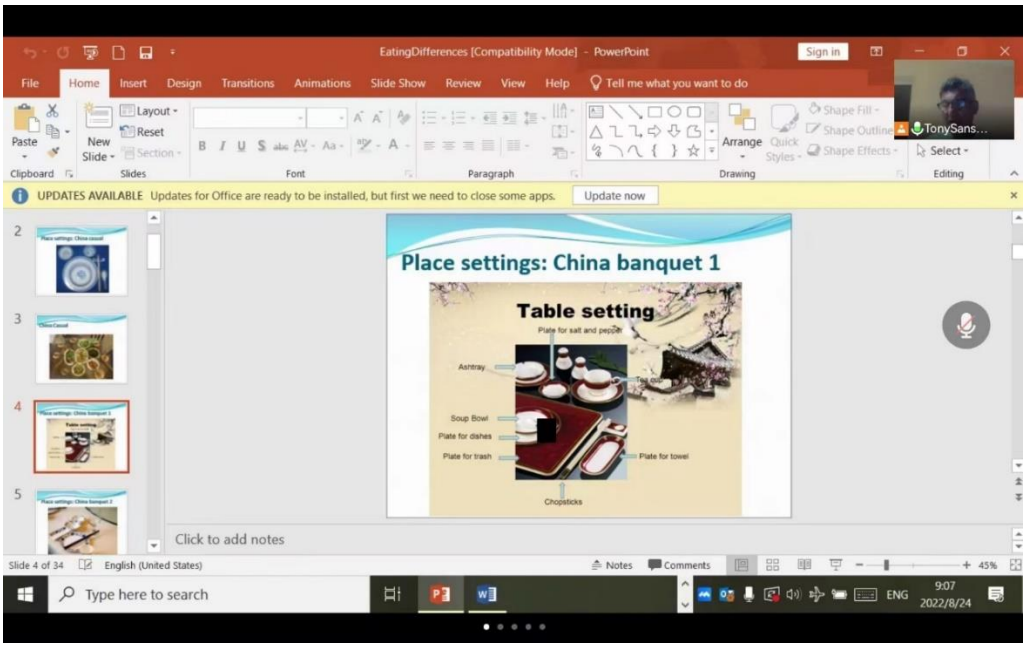
Date	Time	Topic
8.22	08:30-9:15	Lecture
	9:30-11:00	Oral workshop
8.24	08:30-9:15	Lecture
	9:30-11:00	Oral workshop
8.26	08:30-9:15	Lecture
	9:30-11:00	Oral workshop
8.29	08:30-9:15	Lecture
	9:30-11:00	Oral workshop
8.31	08:30-9:15	Lecture
	9:30-11:00	Oral workshop
9.2	08:30-9:15	Lecture
	9:30-11:00	Oral workshop

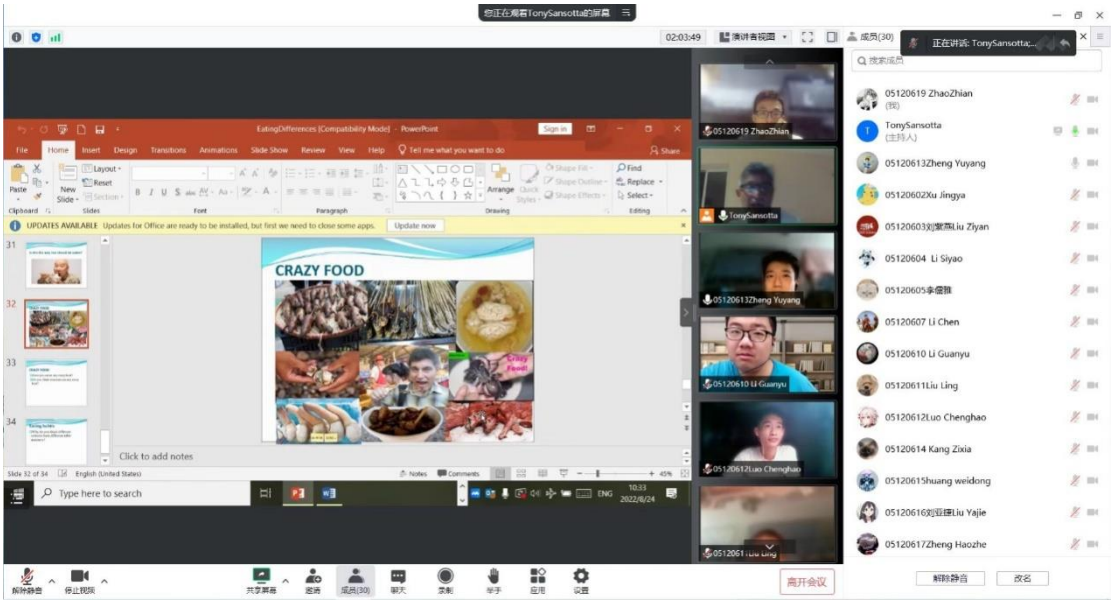
课堂情况（部分）：





	Student #	Student Name	PPT Presentation Topic (All topics are China compared with the USA)
1	05120601	Qin Yi'dan	The difference and similarities of the individual in society.
2	05120602	Xu Jing'ya	The differences and similarities of tourist travel.
3	05120603	Liu Zi'yan	The differences and similarities of the concept of personal space.
4	05120604	Li Si'yao	The differences and similarities of partying and dinner gatherings.
5	05120605	Li Ru'ya	The differences and similarities of the concept of respect.
6	05120606	Wang Hao'miao	The differences and similarities of retired people's lives.
7	05120607	Li Chen	The differences and similarities of humility.
8	05120608	Li Yi'ran	The differences and similarities of family relationships.
9	05120609	Wang Chong	The differences and similarities of putting ideas into actions.
10	05120610	Li Guan'yu	The differences and similarities of Christmas and Spring Festival.
11	05120611	Liu Ling	The differences and similarities of Middle Autumn Festival and Thanksgiving.
12	05120612	Luo Cheng'hao	The differences and similarities of respect for the dead.
13	05120613	Zheng Yu'yang	The differences and similarities of the importance of historical




你正在观看TonySansotta的屏幕
02:03:49
演讲者视图
成员(30)
正在讲话: TonySansotta;...
搜索成员
05120619 ZhaoZhian (我)
TonySansotta (主持人)
05120613Zheng Yuyang
05120602Xu Jingya
05120603刘紫燕Liu Ziyan
05120604 Li Siyao
05120605李俊雅
05120607 Li Chen
05120610 Li Guanyu
05120611Liu Ling
05120612Luo Chenghao
05120614 Kang Zixia
05120615huang weidong
05120616刘亚捷Liu Yajie
05120617Zheng Haozhe
解除静音
改名
EatingDifferences [Compatibility Mode] - PowerPoint
UPDATES AVAILABLE Updates for Office are ready to be installed, but first we need to close some apps.
Update now
CRAZY FOOD
Click to add notes
Type here to search
静音
停止视频
共享屏幕
图说
成员(30)
聊天
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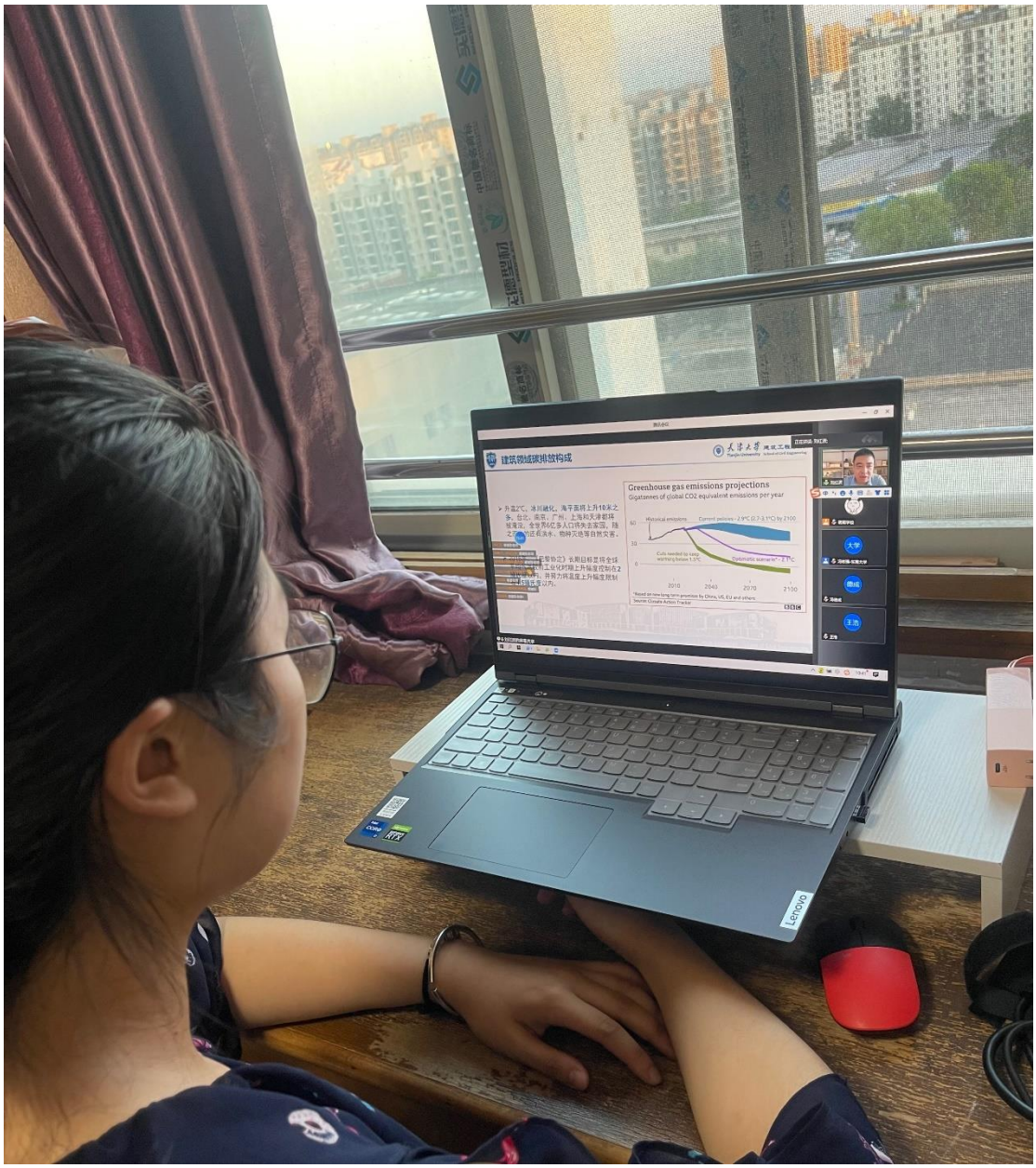
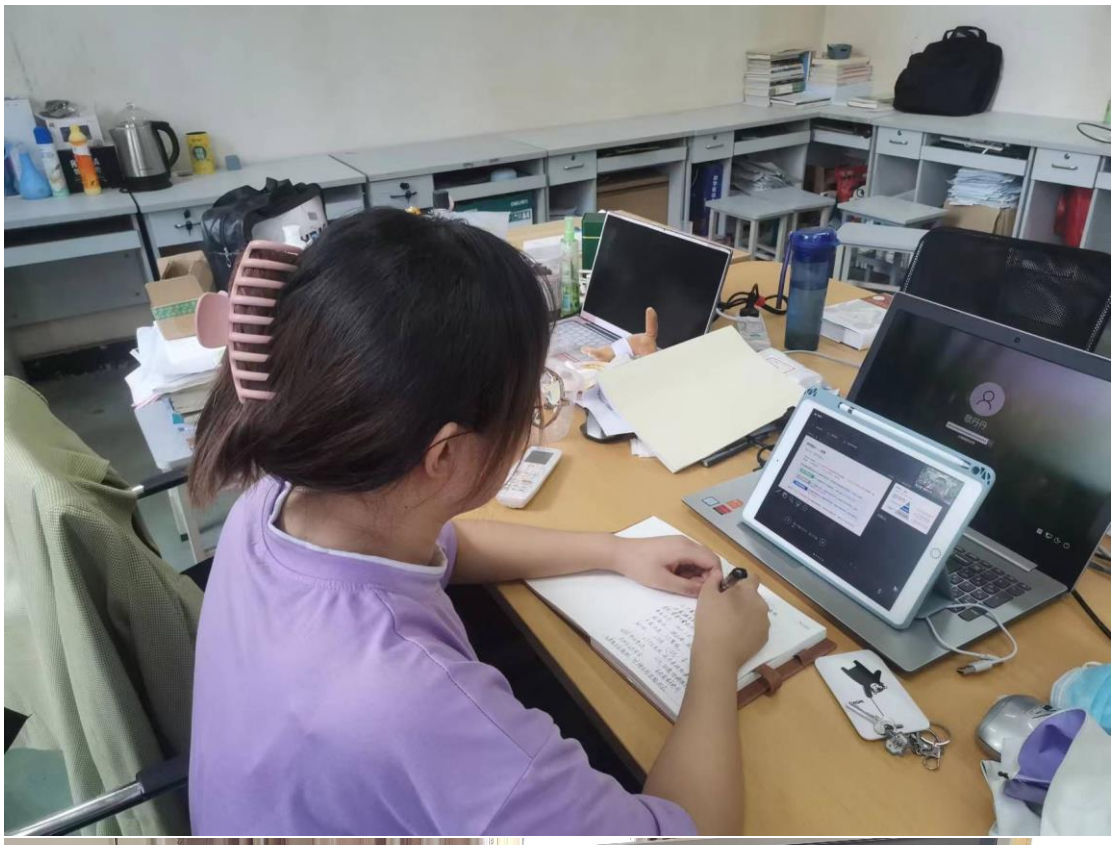
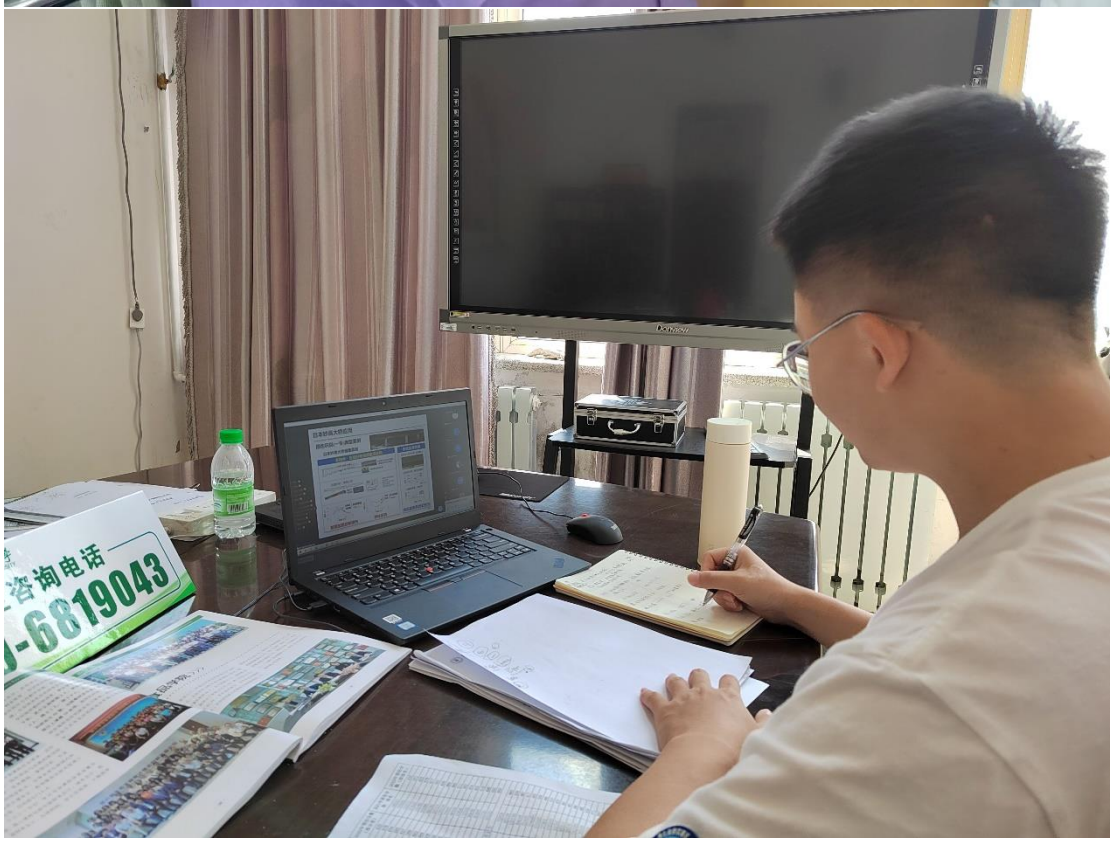
设置
离开会议

2、 学生互动与反馈

2.1 学生学习实况（部分）






咨询电话
-6819043

2.2 学生学习心得（部分）

《Human-Centric Underground Workspaces》学习报告

我在学习完苏志强专家的生动详细的报告后，获益匪浅。

关于苏志强专家所提到的地下空间资源化利用的建议我非常感兴趣，通过课后查阅相关资料以及与老师同学的深入交流，我对这个问题有了一个全新的认识：

地下空间是一种极其宝贵的自然资源，但具有不可再生性、不可逆性。在城市规划中，除做好地面和地上空间的规划外，还要重点做好地下空间规划，而且要地面、地上、地下同步规划、同步实施。把基础设施等建设在地下，可很好地缓解土地资源紧缺、以及解决城市基础设施配套不足等问题。

“十三五”以来，随着新型城镇化步伐加快，有限的土地资源供给与不断增长的空间需求之间矛盾日益突出，国土空间全维度拓展利用成为城市可持续发展的必由之路。城市地下空间资源成为城市土地集约利用、改善交通环境、提升支撑系统能力等发展瓶颈的有效途径，是推进城市生产、生活、生态文明建设不可或缺的优质资源。“十三五”以来，我国新增地下空间建筑面积达到 8.44 亿平方米。我国城市地下空间已形成“三心三轴”的稳定发展结构。其中，“三心”指中国地下空间发展核心，即京津冀城市群、长江三角洲城市群以及珠江三角洲城市群；“三轴”指东部沿海发展轴、沿长江发展轴和京广线发展轴。我国城市地下空间发展综合实力排名前 10 位中东部占 8 席，中部、西部城市各有 1 席。据悉，我国共颁布有关城市地下空间的法律法规、规章、规范性文件共 400 余件。有关地下空间开发利用、地下基础设施的法规政策数量趋于平稳。

我国城市地下空间开发利用较欧美等发达国家起步晚，但目前已成为名副其实的地下空间开发利用大国，其发展源动力主要来自高效的政策力度、巨大的市场驱动、庞大的功能需求。我国地下空间功能类型主要包括地下交通、地下商业服务、地下市政、地下公管公服、地下仓储、特殊功能等。具体来说，包括了地下交通产业、综合管廊产业、地源热泵产业、人防产业、地下物流产业、地下空间技术服务产业、轨道交通产业、地下装备技术产业、地下市政产业、地下空间智慧产业等。

对于苏志强专家所介绍的他们团队的一些研究我认为非常的详细与具体，比如先进行一些审查，类似于社会公众对地下空间的态度、室内工作空间的健康问题、人们对地下空间环境和心理的认知等等，还有一些新型的技术：眼球追踪技术，虚拟现实技术等等，可以看出苏志强专家团队在地下空间的“以人为本”的方面做了十分深入的研究。

我认为：地下空间作为国土管制的基本要素，既要形成相对齐全的规划体系，也应融合于国土空间规划和各专项规划之中，成为城市国土空间进行有效管制的重要依据。地下空间规划技术力量也会随着国土空间规划全面展开和深入推进，继续保持增长的需求态势，这也对我国地下空间专业教育与技术人才培养提出更高的要求。

1.王骞：基于计算机视觉的建筑质量检测与三维模型重建

At the beginning, the speaker gives us a comprehensive introduction of 3D laser scanning and technology like Point of cloud which he and his team recently have been using to solve specific problems.and then comes to the heavy part which are applications.

Applications:

1.3Ddocumentation(documentation,maintence,repair,duplication)

2.geometry quality insecption-manufacturing phase

3.geometry quality inspection-construction phase

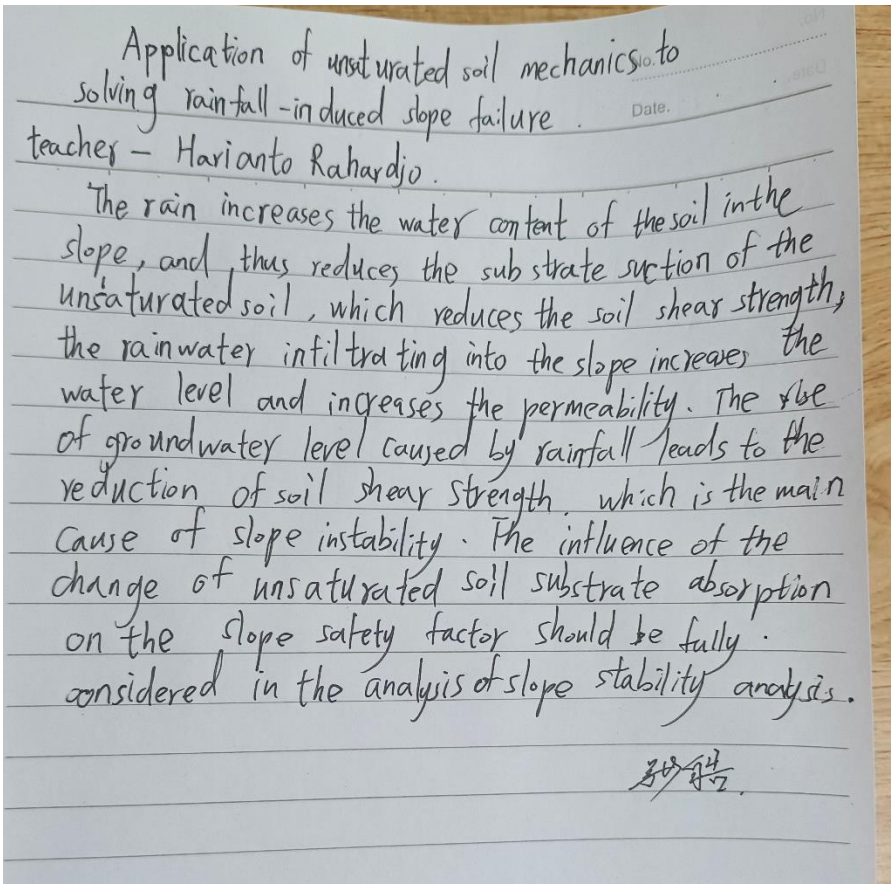
4.bulk excavation volume estimation which contains two parts:one is before excavation to estimate the total amount of earthwork needed;the other is during excavation which is progress monitoring.

5.structural health monitoring-tunnels

6.3D model restruction which have three purposes:for the design of a new project;for the design of addition/alteration works;for building performance analysis.

And the chart suggest that the applications of 3D point cloud data in the construction industry have been rising since 2004.and thus the promising future of this field deserve much attention,which leads us to the recent research of the speaker's team.A big part is about QA/QC in manufacturing Phase and Handover Phase,manufacturing phase contain modular MEP and PC formwork and rebar,handover phase contain dimensional quality、completeness、safety/accessibility provisions.Above that,we come to know that low-cost data collection methods、autonomous data collection、automatic and real-time data processing and analysis are the future developments.

As for scan-to BIM,deep learning based classification from 2D images is really impressing,with the technology of computer vision and pattern recognition,we are able to give strong power to tradition field like civil engineering,and I believe this is the meaning of Interdisciplinary.In order to do well in interdisciplinary field,I plan to learn the basic knowledge of Multidisciplinary to boost my creative.


Application of unsaturated soil mechanics to solving rainfall-induced slope failure.

teacher – Harianto Rahardjo.

The rain increases the water content of the soil in the slope, and thus reduces the substrate suction of the unsaturated soil, which reduces the soil shear strength, the rainwater infiltrating into the slope increases the water level and increases the permeability. The rise of groundwater level caused by rainfall leads to the reduction of soil shear strength, which is the main cause of slope instability. The influence of the change of unsaturated soil substrate absorption on the slope safety factor should be fully considered in the analysis of slope stability analysis.

Government Intervention in Land and Housing Markets: Do you agree?

221461 孙奥

今天听了 Eddie Hui 教授讲座《Government Intervention in Land and Housing Markets: Do you agree?》，在本科期间我就上过 Eddie Hui 教授的课程《房地产经济学》，收获到很多知识，今天能再一次听到 Eddie Hui 教授实属荣幸。

Eddie Hui 教授首先为我们抛出问题，全球经济学中争论最激烈的话题之一是政府对土地和住房市场的干预。支持自由市场体系的人主张，政府干预应该受到严格限制，而其他反对者则认为，政府干预有充分的理由。为什么政府真的要干预？这绝对必要吗？

Eddie Hui 教授从三个方面研究政府干预土地和住房市场的经济学，试图解决这些基本问题。首先，从理论上概述政府干预土地和住房市场的理由，例如外部性、交易成本、效用相互依赖性。其次，在实践中讨论政府干预市场的最常见方法和形式，如立法、补贴、税收、分区和租金控制。第三，在方法和途径的选择方面进一步理清了土地和住房市场的复杂性以及政府干预与市场的优缺点。

结构与防灾专题讲座报告

意大利的 Alessandro Marzani 教授介绍了使用共振超材料来减弱表面波的传播，以及它们作为抵御地震波和地面振动的共振屏障的应用。介绍了瑞利波与垂直谐振器的超表面的动态相互作用，以及能够将地震瑞利波偏转到介质中的大规模屏障的设计原则。并且分析了土壤分层对元表面动力学的影响。使我对超材料减振降噪的技术有了一定的了解。

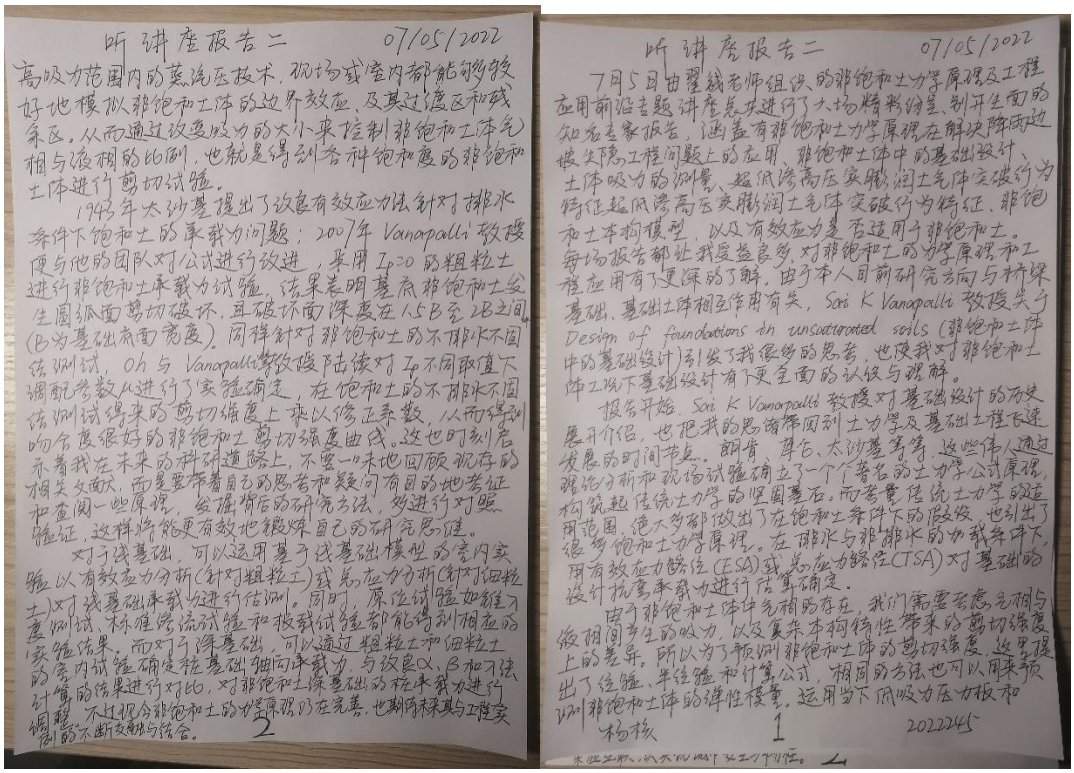
瑞典皇家工程科学院院士 Lennart Elfgren 介绍了瑞典北部四座桥梁从负载测试到失效的经验。包括两座铁路混凝土桥，一座铁路金属桁架桥和一座预应力混凝土公路桥。教授对设计中的普通规范方法进行了分析和比较，对设计中的薄弱环节进行了分析。

结构与防灾专题讲座报告

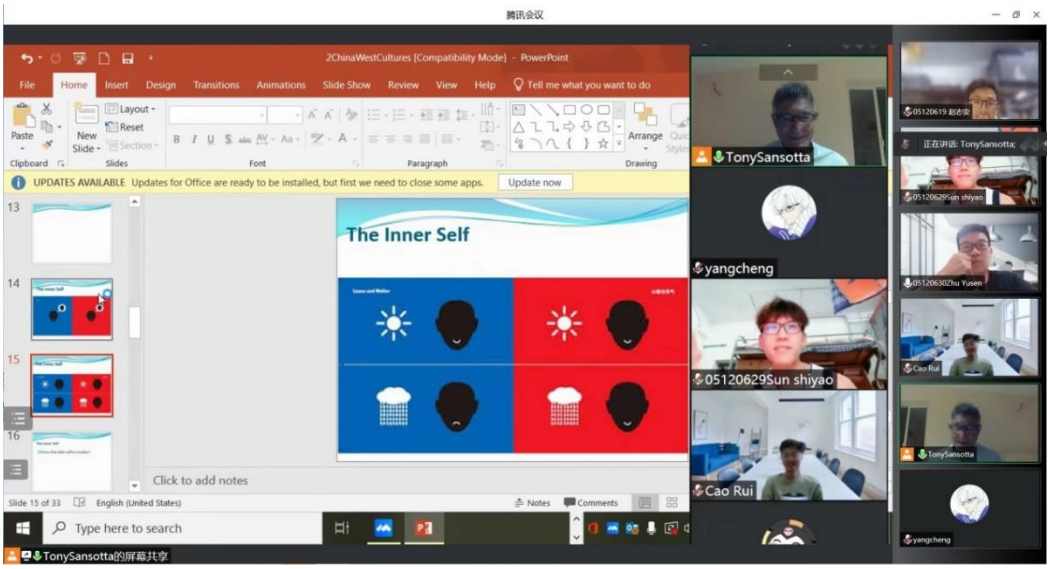
来自美国的 Tom Iseley 教授是地下基础设施系统的规划、设计和施工方面的专家。报告向我们介绍了推动水务公司从被动管理转向主动的演变。重点介绍了埋在地下的基础设施，因为大约 75%的挑战是在看不见的地方。讨论了管道状况评估技术以及可用于预防灾难的非开挖技术解决方案。

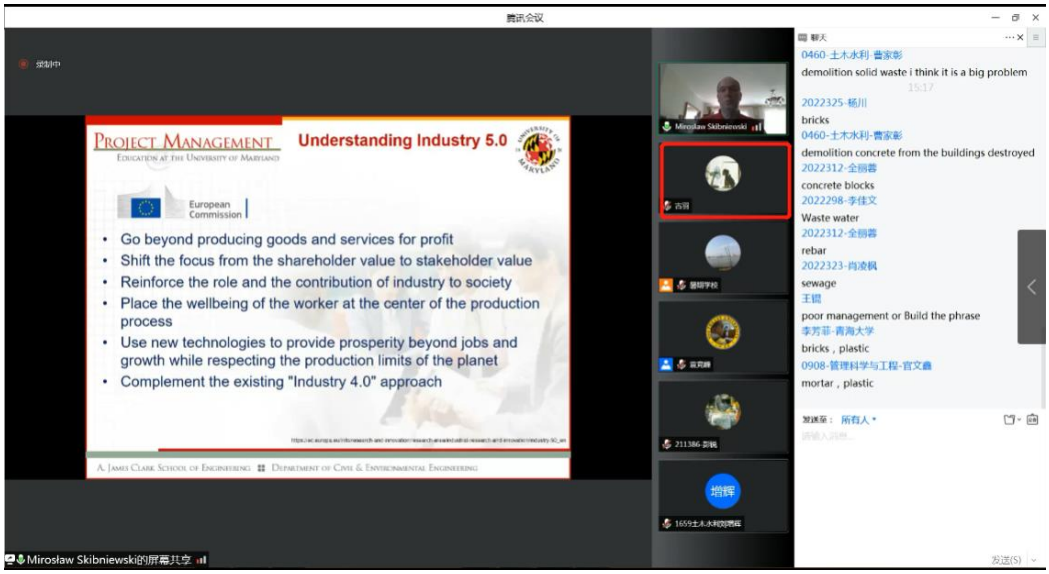
王立军高工向我们介绍了如何合理地将“通用规范”应用到结构设计中。在解释通用规范、推荐性标准、团体标准、企标、地标相互关系的基础上，结合型钢混凝土梁、矩形钢管混凝土柱、钢框架梁等设计案例，报告对这一问题进行了深入的刨析。并且报告介绍了对于主体结构构件、非结构构件和仪器设备满足设防地震正常使用要求的控制指标和设计方法。

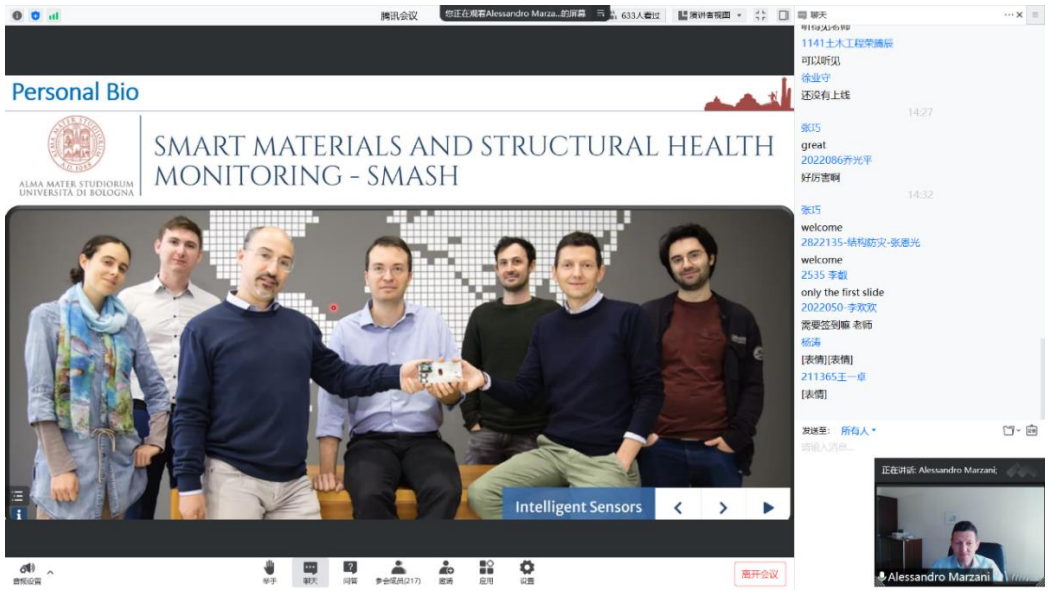
来自天津大学的陈焱讲授向我们介绍了一门新兴的前沿科学——折纸科学。通过折叠或者展开，让纸张的结构、形状、体积或表面积发生改变，从而使其能实现更多的功能。陈焱教授提出了全新的厚板折纸理论模型，破解了厚板结构难以折叠这个困扰科学界和工程界五十余年的国际难题。让我们对这个有趣的新兴科学有了初步的认识。



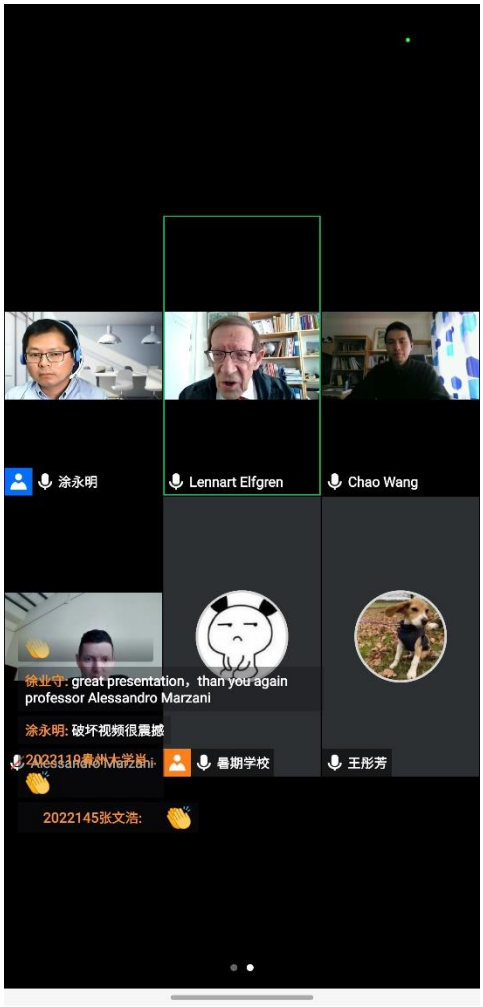
2.3 交流与互动（部分）


腾讯会议
2ChinaWestCultures [Compatibility Mode] - PowerPoint
The Inner Self
TonySansotta
yangcheng
05120629Sun shiyao
Cao Rui
Click to add notes
TonySansotta的屏幕共享


腾讯会议
PROJECT MANAGEMENT
Understanding Industry 5.0
European Commission
Go beyond producing goods and services for profit
Shift the focus from the shareholder value to stakeholder value
Reinforce the role and the contribution of industry to society
Place the wellbeing of the worker at the center of the production process
Use new technologies to provide prosperity beyond jobs and growth while respecting the production limits of the planet
Complement the existing "Industry 4.0" approach
Mirosław Skibniewski的屏幕共享


腾讯会议
Personal Bio
SMART MATERIALS AND STRUCTURAL HEALTH MONITORING - SMASH
ALMA MATER STUDIORUM UNIVERSITÀ DI BOLOGNA
Intelligent Sensors
Alessandro Marzani


腾讯会议
录制中
正在讲话: Eddie Hui;
A Talk from
Estate
Eddie Hui
This is the first talk this afternoon to enhance students' understandings of real estate economics and finance
14:20
Eddie Hui
It is good that his topic covers the financial aspects in real estate.
14:46
Eddie Hui
See you at3pm
15:04
Eddie Hui
Can you see it?
05119510黄昌海
yes
15:48
袁妮妮
Come back at 4.02 pm, please. Thanks
发送至: 所有人
结束会议


涂永明
Lennart Elfgren
Chao Wang
徐业守: great presentation，than you again professor Alessandro Marzani
涂永明: 破坏视频很震撼
暑期学校
王彤芳
2022145张文浩:

3、 项目总结

本次土木工程基础设施建设前沿国际暑期学校是我学院第二次举办的国际暑期学校，前沿与工程相结合，结构、防灾、市政、岩土、工程管理、智能建造多个学科交叉，涵盖“大土木”主要方向，符合“厚基础、宽口径、重交叉、强创新”的培养理念。国际知名学者、企业行业专家与青年教师共同授课，从不同角度、不同领域、不同层次为学生讲授学术前沿与个人发展成长经验，得到了学生的一致好评。本次针对土木工程学院国际化人才培养布局，新增跨文化交际专项训练，增强学生国际环境下沟通与胜任力。受疫情影响，海外专家全部采用线上授课，虽然师生互动受到一定影响，但更利于海外专家合理安排时间，从而可以邀请到更多国际顶尖专家学者为学生授课，充分发挥线上课堂的优势。但是当前课程安排形势对于学生的实践能力训练方面偏少，与专家面对面的沟通仍然缺乏，课程之间的匹配性和系统系还需要进一步加强，后面土木工程学院将进一步改进提高，力争打造线上线下贯通、理论实践融合、授课形势丰富的国际暑期学校项目。