

# POSTER PRESENTATION

5 November

## **A Novel Bayesian-based Integrate Risk Assessment in Tunnel Construction**

**SUN Jinglai<sup>1</sup>, LIU Baoguo<sup>1</sup>, CHEN Lei<sup>2</sup>, CHU Zhaofei<sup>1</sup>, LI Xin<sup>1</sup>**

<sup>1</sup>School of Civil Engineering, Beijing Jiaotong University, Beijing, China. <sup>2</sup>Research Institute of Highway of the Ministry of Transport, Beijing, China

## **Adaptation of Horse Shoe Tunnel Section for Variable Width and Formwork Optimization**

**Gilles CACHIA, Keith LEE, Clément CACARIE**

VINCI Construction Grands Projets, Hong Kong, China

## **Integrating And Restructuring Of Urban Underground Space: A Case Study Of Middle Hong Kong Road CBD In Qingdao**

**Chen-Xiao MA<sup>1</sup>, Fang-Le PENG<sup>1</sup>, Jian-Cheng HU<sup>1</sup>, Xiao-Lei WU<sup>2</sup>, Shuai-Fu DING<sup>2</sup>**

<sup>1</sup>Research Center for Underground Space & Department of Geotechnical Engineering, Tongji University, Shanghai, PR China. <sup>2</sup>Qingdao Urban Planning and Design Institute, Qingdao, Shandong, PR China

## **Effect of Underground Space Development on the Outdoor Thermal Environment in a Residential Area**

**Xiaochao SU<sup>1</sup>, Zhilong CHEN<sup>1</sup>, Ping ZHANG<sup>1</sup>, Xiaobin YANG<sup>2</sup>, Bing LI<sup>3</sup>**

<sup>1</sup>Underground Space Research Center, Army Engineering University of PLA, Nanjing, China. <sup>2</sup>Engineering Design and Research Institute of PLA Army Research Institute, Beijing, China. <sup>3</sup>China Academy of Building Research, Beijing, China

## **Remote-sensing Based Estimation Of The Groundwater Table Position**

**Yi-Lan YAN<sup>1</sup>, Yoram RUBIN<sup>2</sup>, Çağrı GÖKDEMİR<sup>1</sup>, He-Hua ZHU<sup>1,3</sup>, Xiao-Jun LI<sup>1,3</sup>, Yan-Dong LI<sup>1</sup>**

<sup>1</sup>Department of Geotechnical Engineering, College of Civil Engineering, Tongji University, Shanghai, PR China. <sup>2</sup>Department of Civil and Environmental Engineering, University of California, Berkeley, CA, USA. <sup>3</sup>State Key Laboratory for Disaster Reduction in Civil Engineering, Tongji University, Shanghai, PR China

## **Practical and Scientific Procedures concerning Retaining Systems of Deep Excavations in Cemented Sand in Lebanese Urban Zones**

**Youssam KAZAN**

Civil Engineering Department, Faculty of Engineering, Lebanese University, Lebanon

## **Enlightenment of Historical Function Evolution of Urban Underground Space**

**Hong YUAN<sup>1</sup>, Yuan HE<sup>2</sup>, Kun PAN<sup>3</sup>, Poyan Sayed MUSTAFA<sup>4</sup>**

<sup>1</sup>School of Architecture and Design, Southwest Jiaotong University, Department of Urban Design and Planning, University of Washington. <sup>2,3,4</sup>School of Architecture and Design, Southwest Jiaotong University

## **Underground Projects in Chinese New Towns. Promise and Invisibility in Three Case Studies**

**Valeria FEDERIGHI<sup>1</sup>, Filippo FIANDANESE<sup>2</sup>**

<sup>1</sup>Department of Architecture and Design, Polytechnic University of Turin, Italy. <sup>2</sup>Department of Architecture and Design, Polytechnic University of Turin, Italy

## **Four Different Internal Traffic Organization Modes of Underground Parking System for Urban Center District**

**Ping ZHANG, Zhi-long CHEN, Xiao-chao SU**

Army Engineering University of PLA, Nanjing Jiangsu Province, China

# POSTER PRESENTATION

6 November

## Study on Ground Suitability and Construction Countermeasures of Metro Shield in China

**Chihao CHENG<sup>1</sup>, Shaoming LIAO<sup>1</sup>, Lisheng CHEN<sup>2</sup>, Weizhong XU<sup>2</sup>**

<sup>1</sup>Department of Geotechnical Engineering, Tongji University, Shanghai, China. <sup>2</sup>Shanghai Urban Construction Municipal Engineering (Group) Co., Ltd., Shanghai, China

## Urban Underground Development and Urban Renaissance in Japan

**Kengo OCHI**

Director, City Planning Survey and Information Office, City Bureau, Ministry of Land, Infrastructure, Transport and Tourism, Japan

## Research On Underground Utility Tunnel Planning Theory Based On GIS Technology

**Chao YANG<sup>1,2</sup>, Fang-Le PENG<sup>1</sup>**

<sup>1</sup>Research Center for Underground Space & Department of Geotechnical Engineering, Tongji University, Shanghai, PR China. <sup>2</sup>China Construction Underground Space CO.,LTD, Chengdu, PR China

## Study on the Blasting Vibration and Rock Damage in the Construction of Mountain Tunnel

**Wenfeng ZHOU<sup>1</sup>, Shaoming LIAO<sup>1,2</sup>, Qingyang QIN<sup>1</sup>, Changhong PAN<sup>3</sup>, Qunhua HE<sup>3</sup>**

<sup>1</sup>Department of Geotechnical Engineering, Tongji University, Shanghai, China. <sup>2</sup>Key laboratory of Geotechnical and Underground Engineering of Ministry of Education, Tongji University, Shanghai, China. <sup>3</sup>Hangzhou Fuyang Urban Construction Investment Group Co., Ltd., Hangzhou, China

## Numerical Analysis on Stiffness and Geometry Forms of Shield Tunnel Joints

**Shao-ming LIAO<sup>1</sup>, Meng-bo LIU<sup>1</sup>, Yang LI<sup>2</sup>, Cheng-lei XI<sup>1</sup>, Ke-xian LI<sup>1</sup>**

<sup>1</sup>Department of Geotechnical Engineering, Tongji University, Shanghai, China. <sup>2</sup>China Construction Eastern Investment Co., LTD, China.

## Smart Image Based Technology And Deep Learning For Tunnel Inspection And Asset Management

**Fabio PANELLA<sup>1,2</sup>, Yung LOO<sup>1</sup>, Michael DEVRIENDT, David GONZALEZ<sup>1</sup>, Akshat KAUSHIK<sup>1</sup>, Richard OLLERHEAD<sup>1</sup>, Jan BOEHM<sup>2</sup>**

<sup>1</sup>Ove Arup & Partners Ltd., UK. <sup>2</sup>Dept. of Civil, Environmental and Geomatic Engineering, University College London, London, UK

## Underground Development of Campuses in Seoul

**Hong Chul RHIM<sup>1</sup>, Yoon Hie LEE<sup>2</sup>, Ja Young KIM<sup>3</sup>, Joo Eun SUNG<sup>1</sup>, Lee Hong KIM<sup>4</sup>**

<sup>1</sup>Department of Architecture and Architectural Engineering, Yonsei University, Korea. <sup>2</sup>Department of Architecture, Ewha Womans University, Korea. <sup>3</sup>Department of Architecture, Korea University, Korea. <sup>4</sup>Graduate School of Architecture & Urban Design, Hongik University, Korea

## Research on Changes of Approaches on Urban Underground Space Design from the Perspective of Architecture

**Han GANG<sup>1</sup>, Leng JIAWEI<sup>2</sup>**

<sup>1</sup>School of Architecture, Southeast University, China. <sup>2</sup>School of Architecture, Southeast University, China

## Study on New Lining Structures with Openings Applicable to Ultra-thick Open-cut Tunnel

**Zhiqiang ZHANG, Fei SUN**

Key Laboratory of Transportation Tunnel Engineering, Ministry of Education, Southwest Jiaotong University, China

# POSTER PRESENTATION

7 November

## **Risk Countermeasures Of A Large-Scale Underground Space Development Project In The Soft Clay Area**

**Yu ZHANG, Shao-ming LIAO, Meng-bo LIU, Hang LI**

Dept. of Geotechnical Engineering, Tongji University, China

## **Tests for Agitating and Volume Shrinkages of a New Single-Component Grout**

**Yi YANG<sup>1,2</sup>, Xinggao LI<sup>1,2</sup>, Youmian WANG<sup>1</sup>**

<sup>1</sup>Key Laboratory of Urban Underground Engineering of Ministry of Education, Beijing Jiaotong University, China. <sup>2</sup>School of Civil Engineering, Beijing Jiaotong University, China

## **Monitoring Trial Using GBInSAR to Assess the Stability of a Massive Rock Waste Stockpile**

**Nan QIAO, Xiaoli LIU, Yunling DUAN, Xuefeng ZHAO, Xuefei WEI**

State Key Laboratory of Hydrosience and Hydraulic Engineering, Tsinghua University, Beijing, China

## **Research on the Influence Mechanism of Underground Space in the Compact Development of Tokyo Station Area from the Perspective of Network Connectivity**

**Na XU<sup>1</sup>, Hong YUAN<sup>2</sup>**

<sup>1</sup>School of Architecture and Design, Southwest Jiaotong University, China. <sup>2</sup>School of Architecture and Design, Southwest Jiaotong University, China

## **Development of an Energy Calculation Approach for Volumetric Analysis of Various Types of Uses in Underground Rock Caverns**

**Stuart ROSS, Mark WALLACE, Jimmy CK TONG**

Ove Arup & Partners Hong Kong Limited, Hong Kong, China

## **Calculative Substantiation of the Protection Methods for Long-operated Structures of the Sewage Systems of Large Cities**

**N.A. PERMINOV<sup>1</sup>, A.N. PERMINOV<sup>2</sup>**

<sup>1</sup>Construction of roads of the transport complex, St. Petersburg State University of Railway Transport, Russia. <sup>2</sup>Head of Construction Department, NPF Transspetsstroy, Russia

## **Effect of Bilateral Excavation on Adjacent Historical Building and Monitored Analysis in Shanghai Soft Area**

**Hang LI<sup>1</sup>, Shao-ming LIAO<sup>1</sup>, Yong-jing TANG<sup>1</sup>, Ming-liang SHEN<sup>2</sup>**

<sup>1</sup>Department of Geotechnical Engineering College of Civil Engineering, Tongji University, Shanghai, China. <sup>2</sup>Shanghai Construction Group Co., Ltd, Shanghai, China

## **Discussion on Underground Space Planning Strategy for Disaster Prevention in Urban High-density Area**

**Ziwei ZHAO<sup>1</sup>, Xiaobin YANG<sup>2</sup>, Dongjun GUO<sup>1</sup>, Jinrong XIE<sup>1</sup>**

<sup>1</sup>College of national defense engineering, PLA Army Engineering University. Nanjing, China. <sup>2</sup>No.1 Engineering Research and Design Institute of North Theater Army, Jinan, China

## **Research on the Influence Mechanism of Underground Space in the Compact Development of Shenzhen Futian Station - Based on GIS Technology**

**Junzheng ZHOU<sup>1</sup>, Hong YUAN<sup>2</sup>**

<sup>1</sup>School of Architecture and Design, Southwest Jiaotong University, China. <sup>2</sup>School of Architecture and Design, Southwest Jiaotong University, China