

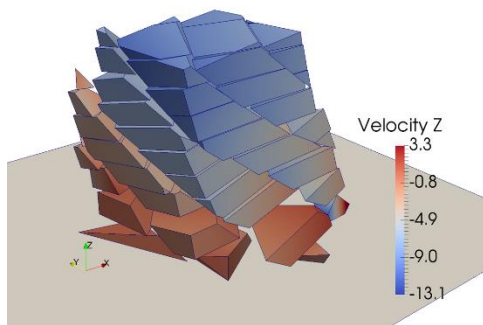
1th International Youth Scientists Forum for Discontinuous Deformation Analysis

9 January 2021, Zoom Platform

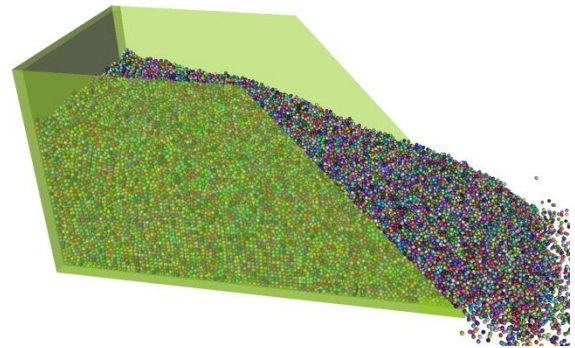
First announcement

Invitation

Discontinuous deformation characteristics are commonly observed in rock mechanics and engineering problems. The discontinuum-based numerical methods, such as the Key Block Theory (KBT), the Discontinuous Deformation Analysis (DDA), the Numerical Manifold Method (NMM) and the Distinct Element Method (DEM) etc., can provide promising results in accordance with in-situ phenomena and laws. Over the past decades, great progress has been achieved in the development of various discontinuous deformation numerical methods.



Jointed rock failure modeled by 3D DDA



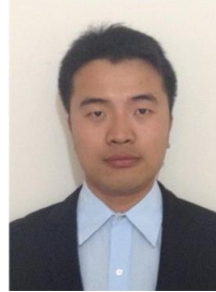
Slope failure modeled by 3D Spherical DDA

In view of the current COVID-19 pandemic situation and strong restrictions to travelling, the 1th International Youth Scientists Forum for Discontinuous Deformation Analysis (IYSF-DDA), co-sponsored by ISRM commission on DDA and CSRME commission on DDA, will be held in 9 January 2021 via Zoom platform. The conference aims to exchange cutting-edge advances of various discontinuous deformation analysis methods among young researchers community, and also welcome to share discontinuous deformation analysis cases in rock engineering.

We would like to invite colleagues in the field of numerical modeling, as well as rock mechanics and engineering, to join this upcoming great event to celebrate and anticipate the progress of discontinuous numerical methods.



Professor Yu-Yong Jiao



Professor Gao-Feng Zhao

Scientific Committee

Honorary Chair:

- Gen-Hua Shi (DDA Company, USA)

Co-Chairs:

- Yu-Yong Jiao (China University of Geosciences, China)
- Gao-Feng Zhao (Tianjin University, China)

Members:

- Resat Ulusay (ISRM President)
- Suseno Kramadibrata (ISRM VP for Asia)
- Yuzo Ohnishi (Kyoto University, Japan)
- Yossef Hatzor (Ben Gurion University, Israel)
- Guo-Wei Ma (Hebei University of Technology, China)
- Ai-Qing Wu (Yangtze River Scientific Research Institute, China)
- Anna Maria Ferrero (University of Turin, Italy)
- Cheng-Yu Ku (National Taiwan Ocean University, Chinese Taipei)
- Chun-An Tang (Dalian University of Technology, China)
- Chung-Yue Wang (National Taiwan Ocean University, Chinese Taipei)
- Gessica Umili (University of Turin, Italy)
- Guang-Qi Chen (Kyushu University, Japan)
- Gui-Chen Ma (Xihua University, China)

- Guo-Xin Zhang (China Institute of Water Resources and Hydropower Research, China)
- Ha Bui (Monash University, Australia)
- Hai-Sui Yu (University of Nottingham, UK)
- He-Hua Zhu (Tongji University, China)
- Hong Zheng (Beijing University of Technology, China)
- Jae-Joon Song (Seoul National University, Korea)
- Jeen-Shang Lin (University of Pittsburgh, USA)
- Jian Zhao (Monash University, Australia)
- Jian-Hong Wu (National Cheng Kung University, Chinese Taipei)
- Jian-Ping Zuo (China University of Mining and Technology, China)
- Jun Yang (Institute of Process Engineering, CAS, China)
- Lei He (Southeast University, China)
- Li-Feng Fan (Beijing University of Technology, China)
- M. Ronald Yeung (California State Polytechnic University, USA)
- Nicholas Sitar (University of California, Berkeley, USA)
- Qian Sheng (Institute of Rock and Soil Mechanics, CAS, China)
- Qing-Chun Yu (China University of Geosciences, China)
- Qing-Hui Jiang (Wuhan University, China)
- Quan-Sheng Liu (Wuhan University, China)
- Qun Wei (North China University of Water Resources and Electric Power, China)
- Shao-Zhong Lin (Yangtze River Scientific Research Institute, China)
- Shi-Hai Li (Institute of Mechanics, CAS, China)
- Takeshi Sasaki (Suncohort Consultants Co., Ltd, Japan)
- Tomofumi Koyama (Kansai University, Japan)
- Xiao-Chu Peng (China Institute of Water Resources and Hydropower Research, China)
- Xiao-Ying Zhuang (Leibniz University Hannover, Germany)
- Xiu-Li Ding (Yangtze River Scientific Research Institute, China)
- Xu Li (Beijing Jiaotong University, China)
- Yang Ju (China University of Mining and Technology, China)
- Ying Wang (University of Chinese Academy of Sciences, China)
- Yuan Wang (Hohai University, China)
- Yu-Jie Wang (China Institute of Water Resources and Hydropower Research, China)

- Zhi-Jun Wu (Wuhan University, China)
- Zhi-Ye Zhao (Nanyang Technological University, Singapore)
- Zi-Xin Zhang (Tongji University, China)

Organizing Committee

Co-Chairs:

- Jia-He Lv (China University of Geosciences, China)
- Wen Nie (Hebei University of Technology, China)

Members:

- Arman Khoshghalb (University of New South Wales, Australia)
- Ben-Guo He (Northeastern University, China)
- Bin Gong (Dalian University of Technology, China)
- Chun Liu (Nanjing University, China)
- Dong-Dong Xu (Yangtze River Scientific Research Institute, China)
- Fei Tan (China University of Geosciences, China)
- Fei Zheng (China University of Geosciences, China)
- Gang-Hai Huang (Central South University, China)
- Hai-Dong Su (Yangtze River Scientific Research Institute, China)
- Hai-Feng Li (China Institute of Water Resources and Hydropower Research, China)
- Hui-Hua Zhang (Nanjing University of Aeronautics and Astronautics, China)
- Jian Xue (University of Chinese Academy of Sciences, China)
- Jie Wu (Hebei University of Technology, China)
- Lu Zheng (Fuzhou University, China)
- Meng-Su Hu (Lawrence Berkeley National Laboratory, USA)
- Ming-Yao Xia (Kyushu University, Japan)
- Ning Zhang (Beijing University of Technology, China)
- Peng-Cheng Yu (Southwest Jiaotong University, China)
- Qi-Hua Zhang (China University of Geosciences, China)
- Qing-Hai Miao (University of Chinese Academy of Sciences, China)
- Wei Wei (Wuhan University, China)
- Wei Wu (Tongji University, China)
- Wen-An Wu (Beijing University of Technology, China)
- Xiao-Dong Fu (Institute of Rock and Soil Mechanics, CAS, China)

- Xiao-Long Cheng (Beijing DDAMM Technology Co., Ltd., China)
- Xing Li (Southeast University, China)
- Xue-Wei Liu (Institute of Rock and Soil Mechanics, CAS, China)
- Xu-Hai Tang (Wuhan University, China)
- Ying-Bin Zhang (Southwest Jiaotong University, China)
- Yong-Tao Yang (Institute of Rock and Soil Mechanics, CAS, China)
- You-Jun Ning (Southwest Petroleum University, China)
- Zheng-Qi Lei (China Institute of Water Resources and Hydropower Research, China)
- Zong-Qing Zhou (Shandong University, China)

Conference Topics

The theme of IYSF-DDA will cover a wide scope of discontinuous deformation analysis methods from algorithms, mechanics, to modelling techniques and applications, including but not limited to the following topics:

- Key Block Theory (KBT) and Engineering Applications
- Discontinuous Deformation Analysis (DDA)
- Numerical Manifold Method (NMM)
- Contact Algorithms and Joint Contact Modelling
- Discontinuous Modeling in Multi-scale and Multi-physics
- Experiment and Measurement of Discontinuous Deformation
- Case Studies of Relevant Rock Engineering Projects
- Other Advanced Discontinuous Analytical and Numerical Methods

Conference date and Joining the Conference

The Conference will be held in **9 January 2021** via **Zoom platform**, which can be downloaded from <https://www.zoomcloud.cn/download.html>. Please click the link below to join the meeting: <https://www.zoomus.cn/j/1311786067?pwd=aXd0RTR3Uk1paVpacTB4QW5NNTVSQT09>.

You can also join the meeting through the following meeting details:

Meeting ID: 1311786067

Password: 123456

Conference Agenda

Time(GMT+08:00)	Topics & Lecturers	Host
08:30-08:40	<i>Opening Speech</i> Yu-Yong Jiao, China University of Geosciences	Gao-Feng Zhao Tianjin University
08:40-09:00	<i>FDEM analysis for ruptured bulking induced large deformation</i> Zhi-Jun Wu, Wuhan University	
09:05-09:25	<i>Coupled Processes Modeling for Porous, Fractured and Granular Systems in Geosciences</i> Meng-Su Hu, Lawrence Berkeley National Laboratory	
09:30-09:50	<i>Fluid-solid coupling numerical simulation using the MatDEM</i> Chun Liu, Nanjing University	
09:55-10:15	<i>Development of numerical rockbolt modelling based on DDA method</i> Wen Nie, Hebei University of Technology	
10:20-10:40	<i>Applications of NMM in geotechnical engineering</i> Yong-Tao Yang, Institute of Rock and Soil Mechanics, CAS	
10:45-11:05	<i>3D discontinuous modeling with virtual multi-view photogrammetry for stability analysis of tunnels in blocky rock mass</i> Wei Wu, Tongji University	
11:10-11:30	<i>Several improved approaches to treat irregular block shapes in DDA</i> Fei Zheng, China University of Geosciences	
11:35-11:55	<i>Some issues in NMM contact analyses and plastic analyses</i> Ning Zhang, Beijing University of Technology	

13:30-13:50	<i>An introduction of the discontinuous SFEM</i> Arman Khoshghalb, University of New South Wales	Fei Zheng China University of Geosciences
13:55-14:15	<i>Application of DDA in dynamic analysis of earthquake-induced landslides</i> Ying-Bin Zhang, Southwest Jiaotong University	
14:20-14:40	<i>A new contact potential based three-dimensional DDA</i> Dong-Dong Xu, Yangtze River Scientific Research Institute	
14:45-15:05	<i>Influence of rock fall fragmentation during impact using DDA</i> Lu Zheng, Fuzhou University	
15:10-15:30	<i>A Scalable Computing Architecture for DDA</i> Xiao-Long Cheng, Beijing DDAMM Technology Co., Ltd.	
15:35-15:55	<i>Application of NMM to simulate the failure process of rock slope under seismic loading</i> Wei Wei, Wuhan University	
16:00-16:20	<i>Numerical method for catastrophe process simulation of water inrush in tunnels</i> Zong-Qing Zhou, Shandong University	
16:25-16:45	<i>Modelling rock failure with the discontinuous deformation and displacement (DDD) method</i> Bin Gong, Dalian University of Technology	
16:50-17:10	<i>Development of DDA program and its engineering application</i> Zheng-Qi Lei, China Institute of Water Resources and Hydropower Research	
17:15-17:35	<i>Improvement of DDA with a new unified tensile fracture model</i> Ming-Yao Xia, Kyushu University	

Supported by:



DDA Commission, ISRM



DDA Commission, CSRME

Organized by:



China University of Geosciences



Tianjin University



Hebei University of Technology

Language

The official language is English.

Contact

Dr. Jia-He Lv, China University of Geosciences, Wuhan, P.R.China

Tel.: (+86) 13397121501, E-mail: lvjiahe@cug.edu.cn

Dr. Wen Nie, Hebei University of Technology, Tianjin, P.R.China

Tel.: (+86) 18526854070, E-mail: niewen@hebut.edu.cn