ORAL PRESENTATION SESSIONS

May 8, 2019

SUMMIT HALL

10:10-12:00 Keynote Lectures
Chair: T. Kyoya   Co-Chair: R. Ulusay
K1(0118): M. Hori: Application of high performance computing for earthquake hazard and disaster estimation
K2(0129): S. Durucan: Monitoring, assessment and mitigation of rock burst and gas outburst induced seismicity in longwall top coal caving mining

13:00-14:40 SK1: Underground Structures-1
Chair: Seokwon Jeon   Co-Chair: Y. Ohta
TK1(0127) K. Shariar: Dynamic analysis and investigation of vibrations induced by train from the subway station
(0033) D. Morikawa: Bingham flow model by fully implicit SPH and its application to reinforce underground caves
(0053) M. Wani: Design of the Tsunami Protection wall against Mega Earthquakes and Huge Tsunamis
(0121) P. Yiouta-Mitra: Analytical and Numerical calculation of stresses and displacements around rectangular tunnel under SV waves in half space
(0131) T. Seiki: Consideration of structural stability for Oya underground quarry with dynamic response

15:00-17:00 S1: Underground Structures-2
Chair: K. Shahriar   Co-Chair: T. Seiki
(0062) Y. Ohta: An experimental study on the effects of earthquake faulting on rock engineering structures
(0056) Y. Chiu: Site characteristics of a rock tunnel based on field-monitored seismic response
(0061) C. Chang: AE and vibration monitoring on underground LPG storage caverns
(0106) K. Kiho: Attempt of Lignite Pit Exploration by Seismic Tomography using Directional Drilling Borehole
(0124) S. Sakurai: Aftershocks of Hyogo-ken Nanbu earthquake (M=7.3) whose epicenter was near the city of Kobe, Japan
(0086) K. Ota: Numerical analysis to evaluate repair work of swelling-rock damaged tunnels in the mountains
(0085) S.R. Naik: Effect of excavation of drives with blasting in paste-filled stopes on the mined-out zone

**OCEAN HALL**

**13:00-14:40 SK2: Rock Slopes-1**

**Chair:** R. Karagüzel  **Co-Chair:** T. Nishimura

**TK2(0102) R. Ulusay:** Assessment of complex large slope failure at Kışlaköy Open pit mine, Turkey

(0060) Y. Nikaido: The Numerical Studies for Fault Displacement Damage of Shih-Gang Dam in Chi-Chi Earthquake

(0113) S. Suzuki: Numerical Simulation of Rock Slope Failure with Dynamic Frictional Contact Based on Co-rotational Technique

(0125) T. Kawai: A study of formations of a sliding surface during an earthquake

(0111) H. Kumsar: Some considerations on the failure of Güney Waterfall, Denizli, Türkiye

**15:00-17:00 S2: Laboratory Testing-1**

**Chair:** F. Dai  **Co-Chair:** K. Aoyagi

(0014) T. Yamabe: Determination of dynamic elastic properties from the frequency of natural vibration by using impact acoustics

(0065) K. Murakami: Evaluation of elastic region of the surrounding bedrock using the cyclic unconfined compression test of rocks

(0072) S. Jeon: Experimental study on dynamic fracturing behavior under blasting loading in PMMA

(0091) D. Asahina: Laboratory Observations of Fracture Plane Reactivation Induced by Pore Pressure in Kimachi Sandstone

(0041) J.W. Cho: Analysis of rock fracture toughness (mode I) by dynamics simulation code

(0079) J. Yoshida: Study on dynamic shear strength and deformation characteristics of rock discontinuity.

(0096) T. Dintwe: The behaviour of Oya tuff Pillars under static and shock loading
May 9, 2019

SUMMIT HALL

8:30-10:00 Keynote Lectures
Chair: Ö. Aydan Co-Chair: Y. Jiang
K3(0128) I. Canbulat: An overview of research into understanding coal burst
K4(0130) F. Dai: Fracture Tests on Rocks under Different Loading Rates: Progressive Fracture Mechanism and Rate Dependence of Fracturing Profiles

10:20-12:00 SK3: Underground Structures-3
Chair: I. Canbulat Co-Chair: C. Yao
TK3(0025) K. Kamemura: Seismic Response and Stability of Rock Tunnels - Its History and Problems Today –
(0040) Y. Jiang: Correlation between seismic damages to mountain tunnel and ground deformation: Case study on Tawarayama tunnel under the 2016 Kumamoto earthquake
(0049) Y. Ito: Seismic response analysis of the underground cavern type disposal facility
(0045) S. Rajasekharan: A study on the seismic behavior of underground tunnels, considering dynamic fault rupture, through large-scaled finite element analysis
(0126) N. Malistani: Key Technical Considerations on Rehabilitation of Existing Salang Tunnel, Afghanistan

13:00 - 15:00 S4: Rock Slopes-2
Chair: R. Ulusay Co-Chair: Y. Jiang
(0068) T. Nishimura: Numerical simulation on progressive failure in rock slope using a 3D lattice spring model
(0117) R. Karagüzel: Sinkholes Induced by Dewatering in an Open Pit Mine Case Study from a Coal Basin in Eastern Turkey
(0087) T.T. Wang: Physical model study on microtremor characteristics of rock block on slope
(0080) K. Uenishi: Failure patterns of granular slopes subjected to dynamic impact: Experimental observations
(0114) S. Moriguchi: Simulation-based optimal design approach for rockfall protection walls
(0018) S. Miki: Solid and water interaction analysis by NMM-DDA and MPS methods applied to large-scale landslide triggered by earthquake
(0039) H. Kumsar: Model tests on rock slopes prone to wedge sliding and some case histories from recent earthquakes
OCEAN HALL

10:20-12:00 S3: Masonry Structures and Monuments
Chair: S. Moriguchi  Co-Chair: R. Hashimoto
(0010) T. Takayanagi: Shake table experiments on masonry retaining wall reinforced with nails
(0054) G. Ma: Study on the stability of stone wall in earthquake by discontinuous deformation analysis
(0012) T. Sasaki: Seismic response analysis using a 4-node iso-parametric Numerical Manifold Method and 3D-Discontinuous Deformation Analysis
(0029) M. Miyajima: Seismic Diagnosis of St. Stepanos Monastery in Iran
(0022) J. Tomiyama: The numerical analysis of response and stability of stone masonry bridges in Aizanoi Antique City in Kütahya Province of Turkey

13:00 - 15:00 S5: Laboratory Testing-2
Chair: T. Koyama  Co-Chair: G. Ma
(0004): F. Dai: Experimental investigation on the fatigue mechanical properties of intermittent jointed rock under random cyclic uniaxial compression
(0031) R. Kiyota: Experimental study of scale effect in rock discontinuities on stick-slip behavior
(0070) S. Cho: Evaluation of the Dynamic Shear Strength of Rocks under Confining Pressure
(0081) E. Nakaza: A new constitutive equation for a solid material
(0036) M. Dello-Iacovo (S. Saydam): Measuring seismic properties of fine sediments in an off-Earth environment
(0112) A. Taheri: Effect of Different Parameters on Post-Peak Response of Rocks
(0021): W. Sukplum: Ultrasonic Wave Properties of Weathered Sandstones in Khorat Group and their Factors Affecting
May 10
SUMMIT HALL

8:30-9:20 Keynote Lecture
Chair: T. Ito    Co-Chair: W. Lin
K5(0078) H. Ogasawara: Spatial variation in stress in seismogenic zones in South African gold mines

9:40-12:00 S6: Blasting/Rockburst/Outburst
Chair: S. Durucan    Co-Chair: M. Sawada
(0034) D. Fukuda: Application of peridynamics to dynamic fracture process analysis of rock-like materials
(0037) K. Tsukamoto: Predicting seismic velocity distribution ahead of tunnel face using drilling vibration of hydraulic rock machine
(0133) M.I. Sharin: Numerical simulation of rock fragmentation by blasting using Discrete Element Method in LS-DYNA
(0071) T. Inuzuka: Application of advanced tunnel blasting technique for reducing vibration and optimizing the excavation advanced rate
(0028) K. Aoyagi: Fracture characterization and rock mass behavior induced by blasting and mechanical excavation of shafts in the Horonobe Underground Research Laboratory
(0089) Y. Li: A Verification and Validation of the multi-body dynamics based on impulse-based method
(0132) T. Tani: Tunnel Face Monitoring System for detecting and warning falling rocks
(0006) D.P. Guo: Dynamic damage constitutive relationship of mesoscopic heterogenous brittle rock under rotation of the principal stress axes

13:00-15:20 S8: Induced Seismicity/Strong Motion Simulation-1
Chair: S. Saydam    Co-Chair: Ö. Aydan
(0046) C. Li: Energy transformations related to rockburst in underground excavation
(0047) M. Kashiwayanagi: Study on amplification characteristics of seismicity at dam sites using monitored acceleration data, affected by disturbance of the nearby existing cavern
(0098) A. Sainoki: Methodology to back-analyze the slip-weakening distance of induced seismicity, considering seismic efficiency
(0088) N. Iwata: Effects of Fault geometry and subsurface structure model in strong motion and surface rupture induced by the 2014 Kamishiro Fault Nagano Earthquake
(0107) N. Iwata: Comparison of change of stress field around the fault by dynamic fault rupture
simulation using 3D-FEM

(0123) C. Wei: A parametric study of fault-slip in longwall mining

(0073) M. Sawada: Analysis of surface fault displacements in 2014 Nagano-ken-hokubu earthquake by high performance computing

OCEAN HALL

9:40-12:00 S7: Dynamic Loading and Excavation

Chair: T. Okada  Co-Chair: N. Iwata

(0005) T. Saksala: Numerical modelling of dynamic indentation of rock with polygonal finite elements

(0024) T. Yokoyama: Rock stresses around active faults measured by using the high stiffness hydraulic fracturing technique

(0050) H. Nakamura: Model tests and numerical simulations on evaluation method of earthquake induced failure of rock slopes

(0015) T. Sasaki: Seismic response analysis of a tailing dam foundation composed of discontinuous rock masses and countermeasure design

(0066) M. Ishimaru: Numerical simulations on the seismic stability of rock foundations under critical facilities via dynamic nonlinear analysis

(0063) T. Sato: The dynamic response of Horonobe Underground Research Center during the 2018 June 20 earthquake

(0023) S. Kodate: Mechanical behaviour and characteristics of rocks subjected to shock loads

(0051) H. Shariati: Inelastic mechanical behavior of granite under spherical indentation loading condition with emphasis on a criteria for damage description

13:00-15:20 S9: Strong Motion Simulation-2 /Case Histories

Chair: M. Miyajima  Co-Chair: T. Ikeda

(0076) Y. Ono: Ground motion observation in Padang, West Sumatra, Indonesia

(0110) N.Z. Nasiry: Ground motion estimation at Kabul City for Mw 7.5 Hindu Kush earthquake

(0069) T. Sugimoto: Application of core-based stress measuring method in the vicinity of earthquake source fault: Diamentrical Core Deformation Analysis

(0035) Y. Kamada: Overview of seismic activity and historical earthquake disasters in Okinawa

(0120) I. Sakamoto: Geological and geomorphological features in broken gravels from the North Senoumi-bank, Suruga-bay, Japan and its implications on Mega-earthquakes

(0122) T. Hashimoto: Analysis of the stone wall damage of Kumamoto Castle by 2016
Kumamoto earthquake using 3D laser scanner and ground survey