

8th Japan/Korea/Taiwan International Joint Seminar
Tunnel Fire Safety and Management
Day 1: Sunday 9th April 2017

12:30-13:00	Registration
13:00-13:40	Poster session (See next page for detail)
13:40-14:00	Opening Remark (Day 1) Signing Ceremony Prof. Nobuyoshi Kawabata; Kanazawa University(JP) Prof. Young-Jin Kwon; Hoseo University(KR) Prof. Guan-Yuan, Wu; SFPE Taiwan Chapter (TW)
	Evacuation 1
14:00	Invited lecture Representing Evacuation behaviour in Tunnel Fires <u>Enrico Ronchi</u> ¹ 1. Lund University (SE)
14:40	Investigation of Evacuation Time from Railway Vehicles Inside a Tunnel: Measurement of Exit Speed from a Vehicle inside a Mountain Tunnel for Simulation Model <u>Mitsutaka Ishizuki</u> ¹ , <u>Masakazu Yamamoto</u> ¹ , Tomonori Sano ² , Masamichi Morishita ² , Shintaro Sasahara ² , Kosuke Fujii ³ 1. Railway Technical Research Institute (JP), 2. Waseda University (JP), 3. National Research Institute of Fire and Disaster (JP)
14:55	The Evacuation Safety Analysis of Fire Scenarios in the Entire Acoustic Barriers of Elevated Mass Rapid Transit System <u>Hue-Pei Chang</u> ¹ , San-Ping Ho ² , Chao-Shi Chen ¹ , Tzu-Sheng Shen ³ 1. National Cheng Kung University (TW), 2. Chang Jung Christian University (TW), 3. National Central Police University (TW)
15:10-15:20	Coffee Break
	Evacuation 2
15:20	Special lecture Characteristics of Evacuation Behavior in a Building <u>Tomonori Sano</u> ¹ 1. Waseda University
15:45	Develop of the Flip-up type tunnel emergency exit in Metropolitan Expressway Japan <u>Shinji Onodera</u> ¹ , Takashi Okada ¹ , Takeshi Utsunomiya ² , Syun Hiragaki ³ 1. Metropolitan Expressway Co., Ltd. (JP), 2. Oriental Consultants Co., Ltd. (JP), 3. Sanwa Shutter Corporation (JP)
16:00	The Current Status and Future Prospects of Fire Resistance Design Guide for the Urban Underground Tunnel in Korea <u>In-Hwan Yeo</u> ¹ , Jae-Hong An ¹ 1. Fire Research Institute, Korea Institute of Civil Engineering and Building Technology (KR)
16:15	Evacuation Speed Experiments in Smoke Filled Tunnel <u>Miho Seike</u> ¹ , Nobuyoshi Kawabata ¹ , Masato Hasegawa ¹ 1. Kanazawa University
16:30-16:40	Coffee Break
	Student session
16:40	Numerical Simulation for Evaluating Emergency Ventilation Strategies on Evacuation Safety During Fire Accident in Road Tunnels with Large Cross Section <u>Ti-Sheng Huang</u> ^{1,2} , Nobuyoshi Kawabata ² , Miho Seike ² , Masato Hasegawa ² , Shen-Wen Chien ³ , Tzu-Sheng Shen ³ 1. New Taipei City Fire Bureau (TW), 2. Kanazawa University, 3. National Central Police University
16:55	Investigation of Evacuation Time from Railway Vehicle Inside a Tunnel - The Effects of Emergency Ladders with Multi-Agent Pedestrian Simulation - <u>Masamichi Morishita</u> ¹ , Shintaro Sasahara ¹ , Tomonori Sano ¹ , Kosuke Fujii ² , Masakazu Yamamoto ³ , Mitsutaka Ishizuki ³ 1. Waseda University, 2. National Research Institute of Fire and Disaster, 3. Railway Technical Research Institute
17:10	A Study on Fire Analysis, Management and Rescue Strategy of Moonlight Mountain Road Tunnel <u>Po-Yu Sung</u> ¹ , Kuang-Chung Tsai ¹ , Chung-Hwei Su ¹ 1. National Kaohsiung First University of Science and Technology (TW)
17:25	Experimental Study on Bus Incidents Evacuation Time Evaluation <u>Hung-Chieh Chung</u> ^{1,2} , Nobuyoshi Kawabata ² , Miho Seike ² , Masato Hasegawa ² , Shen-Wen Chien ³ , Keiichiro Orito ² 1. Kaohsiung City Fire Bureau (TW), 2. Kanazawa University, 3. National Central Police University
17:40	Guidance
18:30-20:30	Welcome Reception (21 st Century Museum of Contemporary Art, Kanazawa)

8th Japan/Korea /Taiwan International Joint Seminar
Tunnel Fire Safety and Management
Day 1: Sunday 9th April 2017
13:00 – 13:40 Poster Session

Panel	Presenter/Title	Country
T1	A study of Fire Safety Assessment for Kaohsiung Cross-Harbor Tunnel Motorcycle Lane <u>Cheng-Chung Cheng</u> ¹ , Nobuyoshi Kawabata ¹ , Miho Seike ¹ , Masato Hasegawa ¹ , Shen-Wen Chien ² , Tzu-Sheng Shen ² 1. Kanazawa University, 2. National Central Police University	TW
T2	Influence of Congestion to Smoke's Behavior of Longitudinal Ventilation <u>Yu-Tsung Ho</u> ^{1,2} , Nobuyoshi Kawabata ² , Miho Seike ² , Masato Hasegawa ² , Shen-Wen Chien ³ , Tzu-Sheng Shen ³ 1. Ding-Hui Project Management Consultants (TW), 2. Kanazawa University, 3. National Central Police University	TW
T3	The Influence of Vehicles and Slope on Longitudinal Ventilation Zero-flow Control in Tunnel Fires <u>Po-Wei, Tung</u> ^{1,2} , Nobuyoshi Kawabata ² , Miho Seike ² , Masato Hasegawa ² , Shen-Wen Chien ³ , Tzu-Sheng Shen ³ 1. Kaohsiung City Fire Bureau, 2. Kanazawa University, 3. National Central Police University	TW
T4	Influence of Longitudinal Inclination on Backlayering Characteristics of Thermal Fume in Tunnel Fires <u>Huei-Ru Hsieh</u> ^{1,2} , Nobuyoshi Kawabata ² , Miho Seike ² , Masato Hasegawa ² , Shen-Wen Chien ³ , Tzu-Sheng Shen ³ 1. NCDR (TW), 2. Kanazawa University, 3. National Central Police University	TW
T5	Experimental Study of Normal Walking Speed in Full Scale Road Tunnel <u>Li-Yu Chen</u> ^{1,2} , Nobuyoshi Kawabata ² , Miho Seike ² , Masato Hasegawa ² , Noritada Yamashita ² , Taisuke Kobayashi ² , Hisashi Nakano ² , Shen-Wen Chien ³ 1. Yilan County Fire Bureau (TW), 2. Kanazawa University, 3. National Central Police University	TW
T6	Numerical Analysis of Water Cannon Discharge <u>Hao-Yu Dai</u> ^{1,2} , Nobuyoshi Kawabata ² , Masato Hasegawa ² , Miho Seike, Shen-Wen Chien ³ 1. Taoyuan County Fire Bureau (TW), 2. Kanazawa University, 3. National Central Police University	TW
J1	Scale-model Tunnel Fire Experiments for Thermal Fume Stopping Effect by Smoke Barrier <u>Taisuke Kobayashi</u> ¹ , Miho Seike ¹ , Nobuyoshi Kawabata ¹ , Masato Hasegawa ¹ 1. Kanazawa University	JP
J2	Experimental Investigation for Evacuation Speed Curve in Smoke Filled Tunnel <u>Noritada Yamashita</u> ¹ , Taisuke Kobayashi ¹ , Hisashi Nakano ¹ , Miho Seike ¹ , Nobuyoshi Kawabata ¹ , Masato Hasegawa ¹ 1. Kanazawa University	JP
J3	Tunnel Fire Detection with a New Laser-Based Open-Path Gas Sensor <u>Ming-Fang Huang</u> ¹ , Lei Tao ¹ , Takeshi Akagawa ² , Yue Tian ¹ , Akihiro Tanaka ² , Naoya Suzuki ^{3,4} , Masahiro Yokota ⁵ 1. NEC Laboratories America (US), 2. NEC Corporation (JP), 3. Central Nippon Expressway (JP), 4. Kanazawa University, 5. Central Nippon Highway Engineering Tokyo (JP)	JP
J4	The Acoustic Approach of the Incident Detections in Tunnels <u>Eiji Mori</u> ^{1,2} , Nobuyoshi Kawabata ¹ 1. Kanazawa University, 2. Central Nippon Expressway	JP
K1	A Study on the Analysis of Fire Behavior for Fire Incident of Dae-Gu subway <u>Seung-Hyeon Jin</u> ¹ , Young-Jin Kwon ¹ 1. Hoseo University	KR

8th Japan/Korea /Taiwan International Joint Seminar
Tunnel Fire Safety and Management
Day 2: Monday 10th April 2017

8:00-9:00	Registration
9:00	Opening Remark (Day 2) Prof. Nobuyoshi Kawabata Prof. Young-Jin Kwon Prof. Guan-Yuan, Wu
	Emergency Equipment 1
9:05	Keynote speech Assessment and Repair of Concrete Structures Damaged by Fire <u>Young-Jin Kwon</u> ¹ , <u>Young-Jae Lee</u> ² 1. Hoseo University, 2. Hanbat University (KR)
9:30	A Fast Fire Detection Algorithm for Linear Temperature Sensor Cable <u>Tatsuya Oshiro</u> ¹ , <u>Kengo Fukuda</u> ¹ , <u>Kenichi Murakami</u> ¹ 1. Sohatsu Systems Laboratory (JP)
9:45	A Case Study at Sub-sea Road Tunnel for Indoor Fire Hydrant using the Wide-area Waterworks <u>Kyung-Hwan Park</u> ¹ , <u>Yeob-Rae Kim</u> ² 1. Young Fire Safety Design Ltd.(KR), 2. Kyungmin University (KR)
10:00	Investigation of Smoke Behavior Using Laser Gas Sensor and Smoke Sensor in Case of a Fire Accident in Road Tunnels (Vol.1) <u>Naoya Suzuki</u> ^{1,2} , <u>Nobuyoshi Kawabata</u> ² , <u>Masataka Yoshioka</u> ² , <u>Masahiro Yokota</u> ³ , <u>Akihiro Tanaka</u> ⁴ 1. Central Nippon Expressway(JP), 2. Kanazawa University(JP) 3. Central Nippon Highway Engineering Tokyo Company Limited(JP), 4. NEC Corporation(JP)
10:15-10:25	Coffee break
	Emergency Equipment 2
10:25	Keynote speech Study on Critical Velocity in Tunnel Fires with Water Spray System <u>Guan-Yuan Wu</u> ¹ , <u>Shang-Chin Hsu</u> ² , <u>Ming-Chun Hsieh</u> ³ 1. National Central Police University 2. Taoyuan Fire Department (TW), 3. New Taipei City Government Fire Department
10:50	Invited lecture Recent Investigations on Natural Smoke Exhaust by Vertical Shaft in Tunnel Fires <u>Jie Ji</u> ¹ 1. University of Science and Technology of China (CN)
11:15	Reconsideration of Fire Prevention in Road Tunnels (What Should We Do in Order not to be Called Japan as "Galapagos islands in the Far east?") <u>Masahiro Yokota</u> ¹ , <u>Kenichiro Yamazaki</u> ¹ 1. Central Nippon Highway Engineering Tokyo Company Limited
11:30	Emergency Response Plan In Tunnels for Small Vehicles <u>Kim Gil-Jung</u> ¹ 1. Gangnam Fire Fighting Bureau(KR)
11:45	The Operation and Inspections of Fixed Fire Fighting System (Deluge System) in Tokyo Metropolitan Expressway Tunnels <u>Naoki Shiroyama</u> ¹ , <u>Takashi Ishida</u> ¹ 1. Shutoko-Kikai Maintenance Co., Ltd. (JP)
12:00-13:00	Lunch

(continued on the following page)

	Risk and Management 1
13:00	Keynote speech What happened to the tunnel? Report on ceiling collapse in the Sasago Tunnel <u>Akisato Mizuno</u> ¹ 1. Kogakuin University (JP)
13:25	The Development of Special Fire Fighting Vehicle for Long Railroad Tunnel <u>Jun-Seok Nam</u> ¹ 1. Korea Fire Institute
13:40	Confirmation the Evacuation Environment When Fire Occurs in Urban Long Road Tunnel <u>Chihiro Inanobe</u> ¹ , <u>Hiroataka Yanagi</u> ² 1. Metropolitan Expressway Co., Ltd. (JP), 2. Echoplan Co., Ltd. (JP)
13:55	Performance-Based Design for Dongao Tunnel <u>Han-Chan Chang</u> ¹ , <u>Kuang-Chung, Tsai</u> ¹ 1. National Kaohsiung First University of Science and Technology
14:10-14:20	Coffee Break
	Risk and Management 2
14:20	Special lecture The research of railway tunnel fires in R.T.R.I <u>Sanetoshi Saito</u> ¹ 1. Railway Technical Research Institute
14:45	Modeling Emergency Medical Services for a Mass Casualty Incident in Road Tunnels <u>Wei-Wen Tseng</u> ¹ , <u>Tzu-Sheng Shen</u> ¹ , <u>Fang-Chieh Sen</u> ¹ 1. National Central Police University
15:00	Risk Assessment of Zero-flow Ventilation Strategy for Fires in Bi-directional Tunnels with Longitudinal Ventilation <u>Kazuki Furuhashi</u> ¹ , <u>Toshiaki Sakaguchi</u> ¹ , <u>Atsushi Mitani</u> ¹ , <u>Bernhard Kohl</u> ² , <u>Alan Vardy</u> ³ 1. Sohatsu Systems Laboratory, 2. ILF Consulting Engineers (AT), 3. University of Dundee (GB)
15:15	Tunnel safety of Keiyo Junction in Tokyo Outer Ring Expressway (Tokyo Gaikan Expressway) <u>Kenichi Takahata</u> ¹ , <u>Takayuki Azuma</u> ¹ , <u>Atsushi Ichikawa</u> ¹ 1. East Nippon Expressway Company Limited
15:30-15:40	Coffee Break
	Fire Science 1
15:40	Special lecture Development of Tunnel Thermal Analysis Model with Bedrock Heat Conduction <u>Keichi Suzuki</u> ¹ and <u>Makoto Honda</u> ¹ 1. Institute of Technology, Shimizu Construction Corporation, Chief Research Engineer (JP)
16:05	Smoke Spreading Distance During a Fire in a Road Tunnel with Roof Openings <u>Futoshi Tanaka</u> ¹ , <u>Kazuhiro Yoshida</u> ¹ , <u>Keisuke Ueda</u> ¹ , <u>Jie Ji</u> ² 1. University of Fukui (JP), 2. University of Science and Technology of China
16:20	Experimental Investigation on the Ceiling Temperature Profiles of Confined Strong Plume Impinging Flow <u>Zihe Gao</u> ¹ , <u>Jie Ji</u> ¹ , <u>Huaxian Wan</u> ¹ , <u>Jiping Zhu</u> ¹ 1. University of Science and Technology of China
16:35-16:45	Coffee Break
	Fire Science 2
16:45	Tunnel Fire Simulation using LES <u>Nobuyoshi Kawabata</u> ¹ , <u>Masato Hasegawa</u> ¹ , <u>Miho Seike</u> ¹ 1. Kanazawa University
17:00	Experiment and Simulation of Flow Characteristics of Hot Gases in Tunnel Fire <u>Yuki Yamauchi</u> ¹ , <u>Sanetoshi Saito</u> ¹ 1. Railway Technical Research Institute
17:15	Special lecture Simple Method for Estimating Temperature and Velocity Attenuation in a Tunnel with Rectangular Cross-section <u>Yasushi Oka</u> ¹ , <u>Hideyuki Oka</u> ² , <u>Ken Matsuyama</u> ³ 1. Yokohama National University (JP), 2. National Maritime Research Institute (JP), 3. Tokyo University of Science (JP)
17:40	Closing Remark: Prof. Nobuyoshi Kawabata Next Seminar Information: Prof. Guan-Yuan Wu Prof. Young-Jin Kwon
18:30-20:30	Banquet (Kanazawa New-Grand Hotel)

8th Japan/Korea /Taiwan International Joint Seminar
Tunnel Fire Safety and Management
Day 3: Tuesday 11th April 2017

Kanazawa City Tour

10:00	Bus: Kanazawa Station West Exit (金沢駅西口)		
10:10	Bus: Korinbo (香林坊)		
10:20-11:50	Kanazawa castle and Gyokuseninmaru-park (金沢城) Kenrokuen, Take photo and free time (兼六園)		
12:00-13:20	Lunch in Kenrokuen (昼食：見城亭)		
Bus #1		Bus #2	
13:20-13:40	Bus	13:20-13:40	Bus
13:40-15:30	Higashi-chaya-District, Gold leaves experience, Shima house (東茶屋街)	13:40-14:20	Bukeyashiki (武家屋敷)
		14:20-14:40	Bus
15:30-15:50	Bus	14:40-16:30	Higashi-chaya-District, Gold leaves experience, Shima house (東茶屋街)
15:50-16:30	Bukeyashiki (武家屋敷)		
16:30-16:50	Bus To Kanazawa Station	16:30-16:50	Bus To Kanazawa Station
17:00-19:00	Farewell Party (Hotel Nikko Kanazawa)		