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Regional Conference in Civil Engineering

PROGRAM

September 5-7, 2018 Yogyakarta, Indonesia



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Welcoming Remarks

from The 4th SCESCM and AUN/SEED-Net RCCE 2018 Chair

Dear participants,

It is my great pleasure to welcome you in The 4th SCESCM and AUN/SEED-Net RCCE here at Royal Ambarrukmo Hotel, Yogyakarta, Indonesia.

I would like to express my appreciation to all the co-organizers institutes, universities from Indonesia and universities outside the country. Also to the all the third parties, PT. Pamapersada Nusantara, PT. Adhi Karya, PT. Inti Beton, PT. Cigading Habeam Centre, PT. Geoforce Indonesia, PT. Wika Beton, PT. Hutama Karya, PT PP, PT. Waskita Karya, PT. Tamara Overseas, PT. Fyfe Fibrwrap, PT. Jasamarga Japek Selatan, and PT. Semen Indonesia who provide financial support for us, to Indonesian Society of Civil and Structural Engineers, Asian Concrete Federation, Japan Society of Civil Engineers, International Federation for Structural Concrete, the International Association for Bridge and Structural Engineering as supporting institutions, and to all the reviewers who have worked on their best helping us to sort hundreds of papers from around the world.

To gather and to share all knowledge and research results from students, academicians and professionals, in 2012 the first SCESCM conference was organized focusing on sustainability concept implemented in design, construction and maintenance in any civil engineering structure. Since then, the conference is organized biannually and is increasingly enriched by outstanding keynotes, invited papers and selected participant's papers sharing the latest scientific findings and achievements among civil engineers across the globe.

This time, SCESCM is held in conjunction with The Regional Conference in Civil Engineering (RCCE) 2018. RCCE is the AUN/SEED-Net conference hosted by the Department of Civil Engineering and Environment, Universitas Gadjah Mada, Yogyakarta, Indonesia. We received 129 technical papers from various country and will be published in MATEC WEB Conference which is indexed by Scopus. In addition, we also received 26 papers to be presented in RCCE conference.

We really hope this 4th SCESCM in conjunction with AUN/SEED-Net RCCE 2018 under the theme "Sustainable Structures for Future Generation" will provide us a valuable opportunity to share knowledges and experiences. SCESCM has also been introducing local cultures of Indonesia at the welcome dinner and optional cultural tour on a day after the conference. Once again, welcome to The 4th SCESCM in conjunction with AUN/SEED-Net RCCE 2018! We wish you a productive conference, and hope you enjoy your time here in Yogyakarta. Thank you.

Ali Awaludin, Ph.D. Chair



General Introduction



International Conference on Sustainable Civil Engineering Structures and Construction Materials (SCESCM)

The concept of sustainability has developed in every aspect of knowledge, including civil engineering aspects. Universitas Gadjah Mada Yogyakarta Indonesia, Hokkaido University Japan and Karlsruhe Institute of Technology Germany agreed to initiate an international conference focusing on sustainability concept implemented in design, construction and maintenance in any civil engineering structure for students, academicians and professionals to share their knowledge and network about the concept. The initiation was then realized by conducting the 1st International Conference on Sustainable Civil Engineering Structures and Construction Materials (SCESCM) in 2012 in Yogyakarta, Indonesia.

The initiators continued to hold the conference again in 2014 and 2016. The 2nd SCESCM was held back in Yogyakarta and the 3rd SCESCM was held in Bali, Indonesia. Better than the previous, those two conference were enrich by outstanding keynotes, invited papers and selected participant's papers. There were more than 190 papers presented in each conferences.

General Introduction

Gaining more universities to join the conference as the organizing institutions, this biannual conference is held back in Yogyakarta, Indonesia on September 5 - 6, 2018. The 4th SCESCM in conjunction with The AUN/SEED-Net Regional Conference in Civil Engineering (RCCE) brings up the theme "Sustainable Structures for Future Generation". This year, more Indonesian universities join the conference as the co-organizing institutions, those are Universitas Atma Jaya Yogyakarta, Universitas Diponegoro, Universitas Islam Indonesia, Universitas Sebelas Maret, Universitas Islam Sultan Agung, Universitas Kristen Petra, Universitas Katolik Parahyangan, Institut Teknologi Bandung, Institut Teknologi Sepuluh Nopember, Universitas Sumatra Utara, Universitas Tadulako, Universitas Negeri Semarang, Universitas Hasanuddin. Other universities outside Indonesia such as Nihon University, Universiti Teknologi Brunei, Chulalongkorn University, Universiti Tun Hussein Onn, and Universiti Teknologi Mara, also take part as co-organizers of the conference.

Regional Conference in Civil Engineering (RCCE)

The Regional Conference in Civil Engineering (RCCE) is an annual conference initiated by AUN/SEED-Net where this year RCCE is hosted by the Department of Civil and Environmental Engineering of Universitas Gadjah Mada, in conjunction with The 4th International Conference on Sustainable Civil Engineering Structures and Construction Materials (SCESCM). The conference is part of the continuing series of regional conference to provide a forum to collect and disseminate the most updated technology and the research of regional issues and public interests in the field of civil and environmental engineering in order to contribute to the sustainable community and to draw support from the industrial and the governmental sectors.

General Introduction

Yogyakarta

The Special Region of Yogyakarta is one of Indonesia's 34 provinces. Yogyakarta, or 'Yogya', 'Jogja' for short, is one of the most popular tourist destination on Java that is located geographically extends from Mount Merapi in the north to the Indian Ocean on the south side.

Jogja offers so many Javanese cultural traditions such as classical and contemporary Javanese dances, Keraton (The Royal Palace in Yogyakarta), Gamelan (Javanese orchestra), Wayang Kulit (sort of leather puppets show), Ketoprak (Javanese teater) and handicrafts such as Batik Jawa, silver and leather that will make tourists be enthralled. Jogja is also known for its famous surroundings, as it is close to iconic sights in Java such as Borobudur and Prambanan temples. Another destination to visit in Yogyakarta is the main road, Malioboro Street, that is always crowded and famous for its night street food-culture.

By holding The 4th SCESCM in conjunction with RCCE participants and guests will be invited not only to share knowledge but also to experience the warmth of Javanese culture in Yogyakarta.

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07.30 - 08.00			REGISTRATION	NO	
08.00 - 08.30			OPENING SPEECHES	CHES	
	1. Assoc. Prof. Ali Awaludin, Conference Chair	lin, Conference Chair			
	2. Prof. Tamon UEDA, Ch	2. Prof. Tamon UEDA, Chief Advisor and Acting Executive Director AUN/SEED-Net	utive Director AUN/SEED.	Net	
	3. Prof. Panut Mulyono, I	3. Prof. Panut Mulyono, Rector of Universitas Gadjah Mada	ıh Mada		
08.30 - 8.40			PHOTO SESSION	NOI	
08.40 - 10.10			PLENARY SESSION I	INOI	
Room			Karaton Ballroom	oom	
Session Chair	Prof. Han Aylie, Univer	Prof. Han Aylie, Universitas Diponegoro, Indonesia	ia		
	 Prof. Henricus Priyosu The Use of Vibration A 	1. Prof. Henricus Priyosulistyo, Universitas Gadjah Mada, Indonesia The Use of Vibration Analysis for Iden <i>tifi</i> cation of Structural Reliability and Comfort	Jada, Indonesia Structural Reliability and	Comfort	
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	3. Kazuo Takase, OMRON Social Solutions, Japan Social Infrastructure Monitoring using ICT Tecl	Kazuo Takase, OMRON Social Solutions, Japan Social Infrastructure Monitoring using ICT Technology in Japan and Applica <i>t</i> ion Case by OMRON	ology in Japan and Applica	<i>t</i> ion Case by OMRON	
10.10 - 10.40			COFFEE BREAK	AK	
10.40 - 12.10			TECHNICAL SESSION I	SION I	
Room	Pamandengan I Room	Pamandengan 2 Room	Pamandengan 3 Room	Pamandengan 4 Room	Karaton Ballroom
Session Chair	Prof. Tamon Ueda	Prof. Barry Jones	Prof. Takashi Matsumoto	Assoc. Prof. Norhazilan Md Noor	Prof. Jiro Takemura
	Paper 1	Paper 29	Paper 58	Paper 95	RCCE 2
	Paper 2	Paper 30	Paper 59	Paper 96	RCCE 3
	Paper 3	Paper 31	Paper 60	Paper 97	RCCE 20
	Paper 4	Paper 49	Paper 61	Paper 93	RCCE 7
	Paper 5	Paper 33	Paper 62	Paper 99	RCCE 8
	Paper 126	Paper 34	Paper 63	Paper 111	RCCE 16
12.10 - 13.10			LUNCH		

13.10 - 14.25			TECHNICAL SESSION II	SION II	
Room	Pamandengan I Room	Pamandengan 2 Room	Pamandengan 3 Room	Pamandengan 4 Room	Karaton Ballroom
Session Chair	Dr. Angga Fajar Setiawan	Dr. Muhamad Abduh	Prof. Johannes Tarigan	Prof. Shunji Kanie	Andi Arham Adam, Ph.D
	Paper 7	Paper 36	Paper 64	Paper 86	RCCE 9
	Paper 10	Paper 37	Paper 65	Paper 88	RCCE 17
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	Paper 22	Paper 39	Paper 67	Paper 90	RCCE 19
	RCCE 15	Paper 50	Paper 68	Paper 91	RCCE 6
14.25 - 14.55			COFFEE BREAK	:AK	
14.55 - 16.10			TECHNICAL SESSION III	SION III	
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Session Chair	Dr. Yazmin Sahol Hamid	Dr. Eng. Mahmud Kori Efendi	Prof. Benjamin Lumantarna		Assoc. Prof. Taweep Chaisomphob
	Paper 11	Paper 40	Paper 70		RCCE 4
	Paper 12	Paper 42	Paper 71		RCCE 11
	Paper 13	Paper 51	Paper 72		RCCE 12
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	Paper 127	Paper 57	Paper 80		RCCE 14
16.10 - 17.00			FREE SESSION	NO	
17.00 - 22.00			WELCOME DINNER	NNER	

*FMM AUN/SEED-Net Meeting will be held on September 5, 2018 at 13.00 - 16.00 at Meeting Room (9th Floor)

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07.30 - 08.00			REGISTRATION	ION	
08.00 - 09.30			PLENARY SESSION II	II NOIS	
Room			Karaton Ballroom	moo.	
Session Chair	Bambang Suryo Atmoi	Bambang Suryo Atmono, Universitas Parahyangan, Indonesia	n, Indonesia		
	1. Prof. Shunji Kanie, Hokkaido University, Japan Freezing Technology: Challenges and Prospect	Prof. Shunji Kanie, Hokkaido University, Japan Freezing Technology: Challenges and Prospects for Sustainable Development in Urban Infrastructure	or Sustainable Developme	nt in Urban Infrastructure	
Keynote Speakers	2. Prof. Teerapong Senju Influence of Surface El	2. Prof. Teerapong Senjuntichai, Chulalongkorn University, Thailand Influence of Surface Energy Effects on Various Contact Problems	versity, Thailand ntact Problems		
	3. Ir. Tugur Wibisono, PT. Cigading H Contribution of Steel Fabrication	3. Ir. Tugur Wibisono, PT. Cigading Habeam Centre, Indonesia Contribution of Steel Fabrication for Future Generation	Indonesia ra <i>ti</i> on		
09.30 - 10.00			COFFEE BREAK	EAK	
10.00 - 11.30			TECHNICAL SESSION IV	SION IV	
Room	Pamandengan I Room	Pamandengan 2 Room	Pamandengan 3 Room	Pamandengan 4 Room	Karaton Ballrom (10.00 - 11.50)
Session Chair	Dr. Hazrina Mansoor	Prof. Buntara S Gan	Dr. Riza Yosia Sunindijo	Dr. Ing. Dian Rubiana Widarda	Assoc. Prof. Mongkut Piantanakulchai
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11.30 - 13.00			HONCH		
13.00 - 16.45			TECHNICAL TOUR	OUR	

Friday, September 7, 2018

inday, acptellines 1, 2010	, 2010				
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	SCESCM 2020 by Prof. Ba	SCESCM 2020 by Prof. Bambang Suhendro, SCESCM Advisory Board	l Advisory Board		

*The registration also opens on September 4, 2018 at 16.00 – 20.00 at Secretariat Room (9th Floor). To prevent too many registration on the day, participants are advised to register on September 4, 2018.

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EVALUATION OF STEEL I-GIRDER BRIDGE	RCCE 3
(An Hong Nguyen, Chatpan Chintanapakdee, Toshiro Hayashikawa)	
APPLICABILITY OF INVERSE VELOCITY APPROACH FOR MONITORING UNDERCUT	
SLOPE BASED ON PHYSICAL MODELS	RCCE 4
(Thirapong Pipatpongsaa, Kana Minamide)	
ASSESSMENT OF DRINKING WATER QUALITY IN SELECTED TUBE WELLS FROM	
SPECIFIC FLOODED AREAS OF HMAWBI TOWNSHIP, YANGON REGION, MYANMAR	RCCE 5
(Hlaing Hlaing Myint, Htet Htet Oo, Ni Ni Sein, Hnin Hnin Aye)	
CRITICAL AREA OF GROUND MOTION AMPLIFICATION IN PHNOM PENH CITY	DOOF (
(Narith Prok, Sinnara Lay)	RCCE 6
DEVELOPMENT OF ENVIRONMENTAL CRITERIA FOR READY-MIXED CONCRETE IN	
INDONESIA	RCCE 7
(Muhamad Abduh, Aryo Danurendro)	
DYNAMIC ANALYSIS OF FLOATING COMPOSITE PLATES SUBJECTED TO A MOVING	
LOAD IN CONSIDERATION OF SIMULTANEOUS BENDING AND STRETCHING EFFECTS	RCCE 8
(Nguyen Xuan Vu, Luong Van Hai, Cao Tan Ngoc Than)	
EFFECTS OF FINE AGGREGATES REPLACEMENT MATERIALS IN MECHANICAL	
STRENGTH OF CONCRETE	RCCE 9
(Farah N.A. Abd. Aziz, Chin Kah Soon, Pang Man Cun, Noor Azline Mohd Nasir)	
EVALUATING THE EFFICIENCY OF ARTIFICIAL INTELLIGENCE MODELS TO PREDICT	
MISSING WATER QUALITY PARAMETER DATA FOR A WASTEWATER TREATMENT	RCCE 10
PLANT	RCCE IU
(Mozafar Ansari, Faridah Othman, Ahmed El-Shafie)	
GEOTECHNICAL CHARACTERIZATION OF GEOPOLYMERIZED GOLD-COPPER MINE	
TAILINGS AS EMBANKMENT	RCCE 11
(Lestelle Torio-Kaimo, Justine Mharzeline G. Guanzon)	
HORIZONTAL PERMEABILITY MODELLING OF CUT-OFF WALL USING K-NEAREST	
NEIGHBOR	RCCE 12
(Joenel G. Galupino, Jonathan R. Dungca)	
INVESTIGATION OF ARCH ACTION IN SAND HEAPS USING A FULLY PLASTIC	
SOLUTION	RCCE 13
(Tan Nguyen, Thirapong Pipatpongsa)	
PARAMETRIC STUDY ON INFLUENCE OF SURCHARGE LOADING, RETAINED SOIL	
AND RESTRAINED SOIL ON DESIGN OF DIAPHRAGM WALL (WITH SURCHARGE	RCCE 14
LOAD CASE)	
(Nu Nu Win, Nyan Myint Kyaw)	

HORIZONTAL PERMEABILITY MODELLING OF CUT-OFF WALL USING K-NEAREST NEIGHBOR (Joenel G. Galupino, Jonathan R. Dungca)	RCCE 12
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PARAMETRIC STUDY ON INFLUENCE OF SURCHARGE LOADING, RETAINED SOIL AND RESTRAINED SOIL ON DESIGN OF DIAPHRAGM WALL (WITH SURCHARGE LOAD CASE) (Nu Nu Win, Nyan Myint Kyaw)	RCCE 14
SERVICE CHARACTERISTICS AND MOISTURE-RELATED PERFORMANCE OF ASPHALT MIXTURE INCORPORATING SILANE ADDITIVE ZYCOTHERM PREPARED USING GRANITE AND LIMESTONE (Maxell Lumbera, Eugene Herrera)	RCCE 15
SOME COMMENTS ON QUALITY OF THE IMPORTED STEEL STRUCTURES IN THAILAND (Watcharaphon Saegow, Taweep Chaisomphob, Nuthaporn Nuttayasakul)	RCCE 16
STRESS CONCENTRATION DUE TO SHEAR LAG EFFECT IN STEEL BOX GIRDERS WITH LONGITUDINAL STIFFENERS (Tanpitcha Pumphaka, Taweep Chaisomphob, Eiki Yamaguchi)	RCCE 17
STRUCTURAL IDENTIFICATION OF POST-TENSIONED PRESTRESSED CONCRETE BEAM USING GENETIC ALGORITHM (Duc-Duy Ho, Thanh-Cao Le)	RCCE 18
UTILIZATION OF RUBBERIZED CONCRETE COLUMNS TO ENCHANCE DAMPING RATIO SUBJECTED TO SEISMIC LOADING (A K Mariyana, M Najmi Mastor, M S Abdul Rahman, Z Nurizaty, P N Shek, M Z Ramli)	RCCE 19
UTILIZING MEASURED NATURAL FREQUENCY TO UPDATE AN ACCURATE MODEL OF BUILDING STRUCTURES (Endah Wahyuni, Djoko Irawan, Tianjian Ji)	RCCE 20
VEHICLE ROUTING SYSTEM FOR ELDER DAYCARE OF SAEN SUK MUNICIPAL CHONBURI PROVINCE (Chotika Meepho, Chantra Chuntet, Piti Rotwannasin)	RCCE 21

Conference Highlights

Welcoming Dinner



The committee İS organizing welcomina dinner conference for participants on September 5, 2018. The dinner will be taking place at nDalem Restaurant, Ngabean Yoqyakarta. nDalem Ngabean Restaurant named after the brother of Sri Sultan Hamengku Buwono VII, Gusti Ngabehi. Essentially it means the house of Gusti Ngabehi.

Essentially it means the house of Gusti Ngabehi. At the moment, nDalem Ngabean is functioned as restaurant and guest house for tourist visiting Kraton. As the main building, the Pendopo or the main hall holds spacious space with classic Javanese architecture which has drawn the attention one of Hollywood producer to be used as one of the main shooting location for Java Heat (2013).

During program, participants will enjoy Angklung Orchestra, theatrical dance and be entertained by the performance of electone player and singer during the dinner. Participants will feel the nuances of strong Javanese culture while enjoying dinner at this restaurant.



Theatrical Dances



Angklung Orchestra

The dinner will be held from 6 PM, so participants are requested to gather in the Royal Ambarrukmo Lobby at 5 PM.

Welcome Dinner Itinerary

Time	Description
17.00 - 18.00	Drive to nDalem Ngabean Resto
18.00 - 18.10	Welcoming Participant at nDalem Ngabean Resto
18.10 - 18.15	Opening MC & Opening Dance
18.15 - 18.35	Pray Time
18.35 - 19.35	Dinner
19.35 - 20.05	Angklung Performance
20.05 - 20.45	Traditional Dance Performance
20.45 - 21.00	Entertainment & Closing

Technical Tour







Malioboro

The committee is organizing half day city tour to several interesting place, i.e. Prambanan Temple and Malioboro. The tour will be held on September 6, 2018. Joining this program, participant can see the largest Hindu temple in Indonesia at Prambanan Temple. Still in Prambanan, participants will be attending The Heritage Class, followed by a meal with a magnificent view of the Temple. Also, joining this program, participant can visit Malioboro. Malioboro is an iconic and also a major shopping street in Yogyakarta. In Malioboro, participant are not only be able to shopping but also enjoying the local food.

Conference participants who would like to join the Technical Tour can register one day before the event as long as there are still places available. Participants who join this program are requested to gather at Royal Ambarrukmo Lobby at 12.30 PM. (100 seats available, first come first serve)

More information about Prambanan Temple and Malioboro: https://whc.unesco.org/en/list/642/indicators/https://tourjogja.com/read/18/malioboro-the-24-hours-street.html

Technical Tour Itinerary

	J
Time	Description
12.30 - 12.45	Preparation
12.45 - 13.15	Drive to Prambanan Temple
13.15 - 14.45	Tour at Prambanan Temple
14.45 - 15.00	Preparation to visit Malioboro
15.00 - 15.30	Drive to Malioboro
15.30 - 17.00	Tour at Malioboro
17.00 - 17.15	Preparation to go back to Hotel

Social Program

The SCESCM and RCCE 2018 offers The Social Program for participants who come with their spouse or family members. The Social Program will be held on September 5th, 2018. The spouse or family members of a SCESCM and RCCE participant can enjoy historical sites around Yogyakarta. In this program, the committee provides free transportation and drinks only. Meals and entrance fee (if any) are not accommodated by the committee. This program is limited for only 10 people.

Destination:

1. Taman Sari Water Castle

Entrance ticket: 15000 IDR (foreign tourist), 5000 IDR (domestic tourist), 3000 IDR (photo permission)

2. Sultan Palace (Keraton Yogyakarta)

Entrance ticket: 15000 IDR (foreign tourist), 7500 IDR (domestic tourist), 1000 IDR (photo permission)

3.Lunch in Bale Raos Kraton Restaurant, a place which serves very typical food of royal cuisine king of Yogyakarta.

4. Silver Jewelries and Crafts Center in Kotagede Yogyakarta.



Taman Sari Water Castle



Sultan Palace (Keraton Yogyakarta)



Kotagede, Yogyakarta



Bale Raos Kraton Restaurant