

# 研究発表会の記録 2015年11月16~18日

## 28th KKHTCNN Symposium on Civil Engineering (Bangkok, Thailand)

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博士課程二年      博士課程二年      修士課程二年

2015年11月16日から11月18日まで、バンコク（タイ）の Chulalongkorn University で 28th KKHTCNN が催された。本会議は京都大学（Kyoto University）、韓国科学技術院（Korea Institute of Science and Technology）、香港科技大学（Hong Kong University of Science and Technology）、同済大学（Tongji University）、チュラロンコン大学（Chulalongkorn University）、シンガポール国立大学（National University of Singapore）、国立台湾大学（National Taiwan University）の計7大学により開催される国際シンポジウムである。シンポジウムは地盤系、構造系、環境系の3つのセッションで構成されており、本研究室では地盤系セッションにおいて、表1に示すタイトルで研究発表を行った。以下では発表時に頂いた質問と回答の内容を記載する。

表1 発表論文タイトル

氏名	タイトル
赤木 俊文	<b>[Session GTE-1]</b> Numerical stability of chemo-thermo-mechanically coupled dynamical analyses for hydrate-bearing sediments using a semi-implicit scheme for the hydrate dissociation rate
大東 優馬	<b>[Session TRE]</b> The developing of the community participatory bridge construction method through the practical activity in Republic of Zambia
木戸 隆之祐	<b>[Session GTE-2]</b> Relation between local porosity and degree of saturation of sand during drying and wetting process observed by micro x-ray tomography with trinarisation technique

## 赤木 俊文 (D2)

### \*質問された内容

なし

### \*質問した内容

**Session GTE-1**, November 16, 10:30 – 11:45

KAIST-GTE-01 [Ultrasonic P-wave Monitoring of CO<sub>2</sub> Hydrate Growth in Sands]

Q: Hydrate saturation is calculated using Gassmann's model. Hydrate habits in pores shows various types like bonding between soil particles. The model can be applied to those various habits of hydrate growth in pores.

A: The model cannot be applied to all types.

**Session GTE-6**, November 17, 10:20 – 11:45

KU-GTE-06 [Coupled THMC model to predict long-term evolution of rock permeability]

Q1: First question is about mechanism of pore volume change. Pressure dissolution of chemicals induce loss of rock mass, and it results in variation of pore space. Is it right?

A1: Yes.

Q2: Then, rock deformation induced by the loss of rock mass is plastic deformation, and it can occur under constant stress. So, I think elasto-plastic model may be suitable for modeling. Please listen your idea about that.

A2: Pressure change induced by temperature change and dissolution of chemicals induced by the pressure change can be taken into account by elastic model. Certainly, plastic deformation occur, but currently the simulation has been conducted within elastic model.

### \*感想

今回は KKHTCNN への 2 回目の参加である。前回よりも校数が増え、さらに活気が増している。セッションが「Geo Technics」でまとまっている分発表内容が多彩で、理解することが難しいものも多々あったが、刺激もまた受けることができた。連日の最高気温 30 度代の高気温と高い湿度に少し体力が奪われたが、バンコクは治安もよく、全体にリラックスして過ごすことができた。

## 大東 優馬 (D2)

### \* 質問された内容

From Prof. Hwasoo Yeo, Korea Advanced Institute of Science and Technology

Q: For the bridge construction project, the structure calculation and material test are required but it is difficult to carry out these things especially material test in case of project in the village of developing country as the international cooperation. What kind of these preparations did you performed?

A: For the structure calculation, we have calculated following in the Japanese pedestrian bridge construction case, for example procedure to decide the size of concrete beams and slab and the number of those parts and the number and size of reinforced iron bar. On the other hand, we didn't consider the strength for the basement work as need the calculation.

For the material test, we have performed the concrete compression test for the test pieces which is made on the site not from the bridge like as core test pieces. But it has the limit to get the good result to evaluate so that we had brought back to Japan and we are doing the material test.

From Assoc. Prof. Jittichai Rudjanakanoknad, Chulalongkorn University

Q: Please explain about the communication for the people in the project site in advance.

A: We have the counterpart which is Japanese NGO working in Zambia name is Tokushima International Cooperation Organization that we said as TICO. TICO's officer who is expert of public health and social work in the village had prepared the local community association to share the information for the villages and start material preparation.

### \* 質問した内容

**Session TRE-1**, November 16, 10:30 – 11:45

CU-TRE-01 [Review of infrastructure index for foreign direct investment analysis]

Q. You have explained about those index related infrastructure in several countries, now your idea is define the distance between countries from the level of each countries. What's kind of conclusion will be able to earn from your review.

A. Our conclusion will be acquired for the suitable investment from the UN related organization. But We have not yet gotten the way for it, now we are getting the summary of distance.

**Session TRE-1**, November 16, 10:30 – 11:45

HKUST-TRE-01 [Seismic response analysis of interacting vehicle - bridge systems under frequent earthquakes]

Q: Do you carried out the calibration for your bridge displacement calculation ? and how to do it?

A: Yes. In the calibration, we have refer the real measured result of displacement from the target object.

### **\*感想**

KKHTCNN への参加は初めてであり、数多くの海外での活動の機会を頂いているが、アジア圏において大学院生の研究テーマに触れるということは初めてで、新しい感触を得た。多くの研究は高度で筋道を立てた面白い研究がほとんどで勉強になった一方で、日本の研究というものには改めて他国と一線を描くことを感じずにはおれなかった。私の研究はいわゆる普通の研究とは異色であるが、この日本のレベルの高い研究群に恥じないよう次回参加に向けてより一層の研鑽を積み続けたいと改めて決意した。

## 木戸 隆之祐 (M2)

### **\*質問された内容**

From Assoc. Prof. Tirawat Boonyatee, Chulalongkorn University

Q: In your study, you used the uniform sand and evaluated the distribution of degree of saturation. I want to know the variation of void ratio in specimen because there is possible difference between global value and local value of void ratio. Can you evaluate it through your method?

A: Of course we can do it. However, if we use the sample including fine particles, it is difficult to apply trinarisation technique and frequency mapping method because the difference between any phases is not easy to be clear. Therefore, in the case that we apply fine samples, I think that it will be difficult.

### **\*質問した内容**

なし

### **\*感想**

国際学会での口頭発表は今回が初となった。多くの学生が発表していたが、流暢に英語を話し、また積極的に議論に参加している姿が印象的であった。自身の発表では、10分を少しオーバーしてしまったものの、概ね練習通りに話すことができた。質疑では返答に若干時

間がかかってしまったが、自分の言葉で説明したことは、良い経験となった。アジアの様々な大学の学生と交流でき、また、幸いにも発表賞も獲得でき、有意義な時間を過ごすことが出来た。今回の経験を、研究に十分活かしていきたい。

