

Form B-5

Date (日付)

18/1/2016 (Date/Month/Year: 日/月/年)

Activity Report -Science Dialogue Program-
(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Chandra Shekhar GOIT (ID No. P14367)

- Participating school (学校名): Yamanashi Prefectural Tsuru High School

- Date (実施日時): 15/1/2016 (Date/Month/Year: 日/月/年)

- Lecture title (講演題目): (in English) Basics of Soil-Structure Interaction

(in Japanese) N/A

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The lecture comprised of four distinct topics that ranged from personal introduction to the most recent research that I have been working on. The lecture started with my personal introduction to the students, followed by a broad range of information on Nepal such as geography, demography, places of interest, wild life etc. The lecture then moved on to explore some earthquake mythologies and how people tend to think about earthquakes in old times based on their geographic location, followed by explanation of the basic scientific facts about earthquakes. Comparative remarks on the occurrence and nature of earthquakes in Japan and in Nepal were made. Information on past and most recent earthquakes in Nepal was provided, highlighting the reason for my interest in the field of earthquake engineering. Details on pile foundations and why (and how) they are used in practice were discussed, as the lecture progressed further. Real life examples on the layout of piles underneath the ground surface were provided for a clear understanding of the use and importance of pile foundations. With the basic discussion on pile foundations and highlighting its important, the lecture then focused on the dynamic response of structures under earthquakes. For the clear understanding of the problem, formulation of basic equations employing Newton's second law of motion and Hooke's law was explained, followed by the basics on soil-structure interaction (SSI). The lecture further looked at the possible modeling options for the material behavior of soil, eventually forming an understanding that soil cannot be considered as a linear elastic material. Existing nature of challenges related to the field of pile dynamics and how they are tackled were discussed as the concluding part of the lecture. A concise information on the complex modeling of the SSI problem using sophisticated numerical modeling software in obtaining the nonlinear response of structures under the event of earthquakes was also provided. The lecture was concluded by a series of Q/A from the students.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 80 min (分), Q&A time (質疑応答時間) 20 min (分)

◆Lecture style(ex.: used projector, conducted experiments)

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

Projector for the powerpoint presentation, blackboard and chalk for further explanation

◆Interpretation(ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

Assistance by accompanied person (Mr. K. Sato)

◆Name and title of accompanied person (同行者 職・氏名)

Kaito SATO, Graduate Student (M2), Saitama University

◆Other note worthy information (その他特筆すべき事項):

Students were very attentive leading to a very lively Q/A session. Teachers were very friendly and supportive.

- Impressions and opinions from accompanied person (同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。):

今回講演をさせて頂いた都留高校はスーパーサイエンスハイスクール(SSH)に指定されており、生徒たちの科学的事象に対する関心も強く感じられ、そのような高校で講演を行うことができたのは双方に大きな利点のあるものだったと感じられた。

SSH 校に関わらず、また理系分野に関わらず、この事業は将来大学に進学するであろう高校生にとって、研究とはいかなるものなのか、どのような国の人々と今後関わっていくのかということについて見通しが立つものになるのではと感じられた。