

# Japan Geoscience Union Meeting 2011

(May 22-27 2011 at Makuhari, Chiba, Japan)

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GSC022-P01

Room:Convention Hall

Time:May 23 14:00-16:30

## Outreach Activities of SGEPSS

Outreach Branch, SGEPSS<sup>1</sup>, Tadahiro Hatakeyama<sup>2\*</sup>

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Society of Geomagnetism and Earth, Planetary and Space Sciences (SGEPSS) has launched the outreach team at April of 2004. We have some programs for outreach and education of our fields of study and general Earth and space sciences, as following, 1) outreach events associated with the Fall meeting of SGEPS (2004-2010), 2) organization to send lecturers to schools and other communities, 3) making webpages introducing our researches and electromagnetic phenomena of Earth and space, 4) publishing a textbook 'Taiyo-Chikyu kei kagaku (The sun-earth system science)' by education WG of SGEPS, 5) holding press conferences introducing remarkable papers in the fall meetings, 6) hosting "Competition of satellite design" with Japan Space Forum and some institutions, and others. Here we introduce our activities for several years and show the plans of future activities.

Keywords: outreach, electromagnetism, antarctica, aurora, space, inside Earth

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## Public programs of Hayabusa by Tohoku university on and the public response

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<sup>1</sup>Science, Tohoku University

The public programs of "Hayabusa" were held at Tohoku University on from October, 2010 to January, 2011.

A display of the real-size model of "Hayabusa" and panels were held at Katahira Campus, on 3-10th October, 2010. We had over 10 thousands visitors. Some participants with high interesting has enjoy the speech by scientist, and the beginners take message that they has enjoy the guide explanation s. Some participant think highly of these programs, however, others point a lock of announcement out.

A science cafe was held at on 3rd October, 2010. T We had over 10 handreds visitors. Three speeches were given about the ion engine, the development of new technique for sampling, and the analysis for sample.

A lecture meeting was held at Hagi hall on 23rd December, 2010.

A display of space probes and panels were held at the entrance of Hagi hall from 4th December, 2010 to 31st January, 2011. We had over a thousands visitors.

Keywords: public programs, public response

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## Geo-Network TSUKUBA -The new style network connects research institutes and citizens concerning geo-environmental science

Geo-Network TSUKUBA<sup>1</sup>, Akinobu Miyakoshi<sup>2\*</sup>

<sup>1</sup>Geo-Network TSUKUBA, <sup>2</sup>Geo-Network TSUKUBA

”Geo-Network TSUKUBA”, which is funded by the Independent Administrative Institution of Japan Science and Technology Agency (JST), is the new-style network to promote the outreach activity concerning the geo-environmental sciences in the Mt. Tsukuba area. Geo-Network TSUKUBA was established in 2009, and is expanding, continuously. Participants are 2 city governments, which are Tsukuba City and Sakuragawa City, and 16 organizations. We are corporate under the scheme of ”geo-environment” and are on going to design/organize a science-cafe, field excursion and exhibition. This network will contribute the civil activity for sustainable deployment of the Mt. Tsukuba area in the future.

Keywords: regional network, lifetime education, geo-environmental sciences, science literacy, Mt. Tsukuba

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GSC022-P04

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## Planning and practice of the geo-tour deal with geological discovery of Kiritappu Marshy Grassland, Hamanaka Town held

Kiyoyuki Shigeno<sup>1\*</sup>, Ayako Takai<sup>2</sup>, Masayuki Ishii<sup>3</sup>, Mitsuru NAKAGAWA<sup>4</sup>, Futoshi Nanayama<sup>4</sup>, Hideki Yoshikawa<sup>4</sup>

<sup>1</sup>Ibaraki University, <sup>2</sup>Kiritappu Wetland Center, <sup>3</sup>Meiji Consultant, <sup>4</sup>Geological Survey of Japan, AIST

We planned a geo-tour for Hamanaka residents as 2010 "Geology Day" event because we wanted residents to re-confirm the familiar landscape around the town as geo-sites. In this case, Kiritappu Wetland Center was implemented as our host of this outreach event. Also we planned a training session for geo-tourist guides which was requested by Hamanaka town office in addition to opportunities for the residents to learn directly from geological experts such as geological history and natural disasters around the town,

Before geo-tour on July 11, 2010, we gave two general lectures, "Let's see Hamanaka geo-sites with viewpoints of the earth history" presented by Nakagawa and "Geological events around Hamanaka" presented by Ishii.

After the lectures, the bus started from Kiritappu Wetland Center for eight geo-sites, Stop 1: The quartz monzonite in Hamanaka (Hamanaka quarry), Stop 2: Recent seismic rock falls and submarine landslide deposits in Nemuro Group (Sakakimachi), Stop 3: Geomorphology around Kiritappu marshland (Kiritappu Wetland Centre), Stop 4: Evidence of giant tsunamis (Kiritappu marshland), Stop 6: Pirikauta landslide (Pirikauta, Akkeshi), Stop 7: Extinct Sangoso on Kakijima island and sinking phenomena around here (Lake Akkeshi), Stop 8: Ghost forest in Bekkanbeushi marshland caused by large earthquake? (Bekkanbeushi marshland, Akkeshi) and turn back center at 4:00 pm as our schedule.

In our poster, and we want to show our idea about "importance of glass-rooted geological outreach activities for local residents" as an example planning and practice of the Hamanaka geo-tour referring to the day of evaluation results received from the residents.

Keywords: Geo-tour, Geology day, Kiritappu Wetland, Hamanaka Town, Eastern Hokkaido

GSC022-P05

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## Development of the "Turbidite stick" for a Geoscience educational material (Geotoy)

Hideki Yoshikawa<sup>1\*</sup>, Futoshi Nanayama<sup>2</sup>

<sup>1</sup>AIST, <sup>2</sup>Geological Survey of Japan, AIST

On July 24, 2010, we held challenge corner for children as "Secrets of sediment gravity flow which are studied from easy experiments" in AIST public exhibition. We were prepared five experimental devices to clearly explain for the relationship between sediment gravity flows and other natural disasters such as sedimentary processes of debris flow, landslide and turbidity current. Yoshikawa developed the "Turbidite stick" as a new Geotoy. In our presentation, we want to demonstrate it for Geoscience educators.

The main body was made of an acrylic pipe (21mm diameter, 1000mm long), which was purchased from the home center in Tsukuba. Then both end of the pipe were prevented water leakage into the caps. Mixing particles were enclosed in the pipe, such as beach sand and dune sand from Ajigaura coast, fluvial gravel from the downstream of Nakagawa River, various types of color sand and glass beads were purchased from the same home center in Tsukuba. Then we repeatedly tried into the mixing sand grains in the pipe during preliminary experiments. As a result, mixing ratio as 48% fine gravel river (diameter 5mm), 29% coarse sand beach (diameter 1mm), 23% fine glass beads (diameter 0.2mm) was best mixing rate. In particular, we were able to reproduce the behavior of suspending particles in flow condition by mixing glass beads into natural sands and gravels.

From several Geoscience educators have already contacted us about how to obtain "Geotoy". According to their comments, we try to consider the commercialization of it in future.



Keywords: Geoscience educational material, Geotoy, Turbidite stick, sediment gravity flow, natural hazard, development

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GSC022-P06

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## A making of earthquake disaster prevention education contents with interactive communications tool

Nobuyuki Yamada<sup>1\*</sup>, Takanobu Otani<sup>1</sup>

<sup>1</sup>Fukuoka University of Education

This study aims to improve the concern for the earthquake disaster prevention, and to become a help of new development that spreads knowledge, and it gropes to the enhancement of the earthquake disaster prevention education. As the part, it attaches as a trial and it introduces the production of digital contents for the education that puts the use of the interactive communications equipment, and use by the school training. The digital contents of this study were assumed when it is a suddenly strong motion by an earthquake, the one to do the action simulation that is able to judge of good. I will report the results of questionnaire for college students of a future teacher using these contents.

Keywords: Interactive communications tool, Earthquake disaster prevention education

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## Earth Science Education using "Mt Fuji Travelling Exhibition"

Toshio Sasada<sup>1\*</sup>, Akira Miyake<sup>2</sup>

<sup>1</sup>STEP, Aichi University of Education, <sup>2</sup>Science., Aichi University of Education

Mount Fuji is one of the famous volcanoes in Japan and it is a good theme for learning about Earth Sciences. We opened the exhibition of Mt. Fuji at Aichi University of Education in April 2010. In the exhibition we displayed items of "Mt. Fuji travelling exhibition" co-produced by Shizuoka University and National Museum of Nature and Science. We also displayed some products by our university, including a 3D-map of Mt. Fuji, and held special lectures about Mt. Fuji for the public.

In this poster, we will show one of the exhibits (3D-map of Mt. Fuji) and report the response of the exhibition visitors.

Keywords: Mount Fuji, Education, Earth Science, Travelling Exhibition

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## The cheapest simulator for characteristic vibrations, YURAYURA 2011, by Dr. Avaranger

Yasuaki Nohguchi<sup>1\*</sup>

<sup>1</sup>NIED

Recently, large swinging of the skyscraper which resonates by the long-period ground motion becomes a topic. In this paper, we will introduce the simple models to simulate the characteristic vibration of buildings for science education.

Keywords: science education, earthquake, characteristic vibration, yurayura



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## Science Communication for Earth and Planetary Sciences - New concept and practice -

Takashi Chiba<sup>1\*</sup>, Kentaro Yamada<sup>2</sup>, Kenji Sato<sup>3</sup>, Asuka Yuki<sup>4</sup>, Shohei Shimokosi<sup>5</sup>

<sup>1</sup>Grad.Sch.of Frontier Sci.,The Univ.Tokyo, <sup>2</sup>Tokyo Institute of Technology, <sup>3</sup>Waseda univ., <sup>4</sup>Musashino Art Univ., <sup>5</sup>Yokohama National Univ.

Earth and planetary science is one of the most famous academic disciplines in general. However it is difficult to say that the attractions, essences and familiar examples of earth and planetary science have become widespread into public well. In addition, there are only a few opportunities to meet and talk with scientists directly for general people. We propose that science communication is a better way to know and understand about earth and planetary sciences for public. Science communication is a means for communications between academic communities and public on an equal basis. Many activities of science communication are run today. However, almost all of the activity aims to enlighten people who are usually not interested in science about the interest of science. That is very important, but not enough because the interests for sciences or scientific knowledge are different from understanding science and being able to contribute to society.

In earth and planetary sciences, sampling and analysis are costly in many cases. Accordingly, research fund is important to study, and accountability of study is too. Science communication is needed in the accountability. However, The activities of science communication in earth and planetary sciences should be promoted not only for accountability for tax money used as research fund, but also for education and having public think about global problems (e.g. global warming, resource depletion, etc.). Few studies of earth and planetary sciences are technologically applied for the engineering now, but such problems will be resolved with taking into account the perspective of earth and planetary sciences. Thus, earth and planetary sciences should be dealt more in many contexts related with social and industrial activities.

Therefore, we suggest that science communicators should provide a "next step" for public to solve these backgrounds. As the "next step", First of all, we propose a concept to categorize activities of science communication into three steps. First step is "enlightenment for public", second is "discussion between scientists and public", and third is "consensus-building about problems between scientists and public". Second, we form a group, named "Universal Earth" ("Yuniasu", in short) for mainly running "second step" as written above. The members are all students and but belong to many faculties. That is good not only for providing many perspectives to the group but also divisional corporation. Now Yuniasu hold science cafes titled "Earth and Planetary Sciences Bar" about once two months in Jiyu-gaoka, Tokyo. The concepts of Yuniasu's activities are as follows; i) Themes have to be related in earth and planetary sciences, ii) Works are for "discussion between scientists and public", and iii) "Earth and Planetary Sciences Bar" have to be held in Jiyu-gaoka, Tokyo. These concepts are for intensifying the connection between earth and planetary scientist and public, and forming a model case which the local public entertain the science into their life. In this presentation, we show our work and the result.

Keywords: Earth and Planetary Sciences, Science Communication, Science Cafe, Science bar