

(For JSPS Fellow)

Form B-5

Date (日付)

05/09/2014 (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): ZAMBELLI LAURA \_\_\_\_\_ (ID No. P14731 \_\_\_\_\_)
- Participating school (学校名): YAMANASHI HIGH SCHOOL \_\_\_\_\_
- Date (実施日時): 04・09・2014 \_\_\_\_\_ Date/Month/Year: 日/月/年)
- Lecture title (講演題目): (in English) Neutrino physics in Japan \_\_\_\_\_  
 \_\_\_\_\_ (in Japanese) \_\_\_\_\_

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

I started the lecture with a short presentation of myself and my home country, France. I highlighted some differences between France and Japan on various topics : geography, weather, holidays, school system. Then, I explained what is my research topic. I work the physics of an elementary particle : the neutrino. I explained them what is particle physics and how neutrino plays a role in their daily life. Neutrino are associated with the life and death of stars. I have explained for example how supernova explosion is related to the existence of heavy elements in the Universe. Then, I introduce my research topic : the neutrino oscillation. This phenomena can be easily understood (if simplified) by high school students. We know that three types of neutrino exist. When you produce a certain type of neutrino, there is a probability that this neutrino changes its type when it propagates. I introduced my experiment (called T2K) conducted in Japan, where we produce a beam of a certain type of neutrino on the east side of Japan with an accelerator (Tokai mura, Ibaraki) . Then, we look if a new type of neutrino is produced after 300km of propagation. For that, we use a detector on the west side of Japan : Super Kamiokande in the Gifu prefecture. This detector is very impressive : it is a giant swimming pool of 50 kt of water under a mountain ! I have presented this detector, and explained how can we see neutrinos in it. Finally, I have showed the latest results of the T2K collaboration (of about 500 international members) and shortly introduced what will we do in the future in neutrino physics.

- Language used (使用言語): English
- Lecture format (講演形式):
  - ◆Lecture time (講演時間) 100 min (分), Q&A time (質疑応答時間) 5 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

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- ◆ 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))

Accompanied person

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

Takuya HASEGAWA – Professor at KEK

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

I would like to thanks the JSPS and the Yamanashi High school for this experience, and I hope the students will benefit from the Science dialogue program in their future. \_\_\_\_\_

- 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。):

このたびは有意義なプログラムにお招きいただきありがとうございました。研究活動を自ら中心となって、いままさに遂行している研究者が、科学に興味をもっている若い学生さんに英語(今回の講師はフランス人であり、必ずしも母国語が英語であったわけではありませんが、研究者が必要に応じて母国語以外の言語を、必ずしも完璧なものとはいえなくても、必要に応じて使用しているという実態も学生さんにとっては示唆的であったのではないかと思います。)で語りかけ、また議論を行うというのはとても有用なことであると考えております。今回の訪問が若い方々に何がしかよい影響を与えたとすれば大変うれしいことです。又、講師となった Laura Zambelli 博士にとっても将来のために極めて有用な体験であったと信じております。これからもますますプログラムを充実していただけますようお願いしております。