

(For JSPS Fellow)

Form B-5

Date (日付)

26/7/2014 (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): Roman Krčmar (ID No. P 12815)
- Participating school (学校名): Tokyo Metropolitan Tama High School of Science and Technology
- Date (実施日時): 16/7/2014 (Date/Month/Year: 日/月/年)
- Lecture title (講演題目): (in English) What probability and phase transitions have in common ?
(in Japanese) 相転移はなぜ確率で表されるか？
- Lecture summary (講演概要): Please summary your lecture 200-500 words.

My lecture was divided into two parts.

First part of the lecture was dedicated to Slovakia and my life path. I have presented basic information about Slovakia's history, economy, nature and population. Whenever it was possible I compared these information to Japan. At the end of these part I presented my life path. From my elementary school years through high school, university and phd study to my postdoc years. I also informed about my branch of physics.

Second part of my lecture was dedicated to statistical physics. I started with basics of probability theory. I was explaining probability for simple system like one coin and collections of several coins. Using collections of coins I explained rule for calculating probability for independent events. Then I proceed with Boltzmann probability used in statistical mechanics. After that I described simple model of magnetism, classical Ising model. Using this model and Boltzmann probability I calculated magnetization as function of temperature for small systems. Then I proceed with simple Monte Carlo program for classical Ising model. Using outcome from Monte Carlo program I presented different phases of Ising model and discussed the concept of phase transition. At the end I gave students time for questions.

- Language used (使用言語): English + Japanese translation
- Lecture format (講演形式):
 - ◆Lecture time (講演時間) 30+50 min (分), Q&A time (質疑応答時間) 30 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))

Overhead projector, Powerpoint style presentation, Mathematica programs

- ◆ 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))

難解な部分を日本語で説明いたしました

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

Toshiki Hayashi

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

- 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。):

Thank you for giving to me this nice opportunity.