

Tohoku University Global COE Program:
World Center of Education and Research for Trans-disciplinary Flow Dynamics
International Space University
2010 Space Studies Program
Report

Date: 18 /November /2010
(D) (M) (Y)

Name	Masataku Sutoh		
Department	Department of Aerospace Engineering, Graduate School of Engineering		
Supervisor's Name	Associate Professor Keiji Nagatani, Department of Aerospace Engineering, Graduate School of Engineering		
Dispatched Period	18/ June /2010 ~ 29/ August /2010 (D) (M) (Y) (D) (M) (Y)		
Venue (Name of the facility,city&country)	International Space University Strasbourg Central Campus, Illkirch-Graffenstaden, France		
Other visiting place	DLR, Stuttgart and Lampoldshausen, Germany		
Number of total participants	121 (Of which number of Japanese: 8)	Number of participating nations	29
Team project	TP ASTRA (Asteroid Mining Technologies Roadmap and Applications)		
Lecturers of note	Peter H. Diamandis, Robert D. Richards, Chiaki Mukai		
Participations in other congresses supported by ISU if any	None		

International Space University Space Studies Program (ISU SSP10) was held at ISU Strasbourg Central Campus. The participants of the SSP10 consisted of researchers who work in space agencies/industries as well as students, lawyers, and artists. Studying with those ambitious and curious participants stimulated me and broadened my view of space.

The SSP mainly consists of Core Lectures, Departments Activity (DA), and Team Project (TP). Core Lectures were offered everyday in the first 4 weeks of the SSP. The teachers of the lectures were leaders in their fields and some lectures were taught by astronauts. Lectures given by astronauts were especially great because astronauts are the right persons to introduce their training and experience. These lectures leaded us to feel space closer and understand the harshness of space environment. After the 4 weeks, there was an exam widely covering all the 60 Core Lectures. It was the most difficult exam I have ever taken.

In the Department Activity, we chose a department from seven departments; Space Life Science, Satellite Application, Space Business, Space System Engineering, Space and Society, Space Physical Science, and Space Policy and Law. For my department, I chose the



Core Lectures



Hands on activity in the DA

Space Life Science Department and took a step into a field that I had never studied before. Through studying life science, I learned how harsh space environment is and now have a better understanding of the difficulty of space development. As one of the department activities, we conducted an experiment on cutting/suturing pig's organ by ourselves. This experiment was the most impressive experience in the entire SSP10. At the end of the department activity, we chose a theme by ourselves, did research on the theme, and made a presentation. For my theme, I focused on the telesurgery and did research with two French students. In the telesurgery, "Time lag" between operator and robot is one of its big issues. I contributed to the research by making comments on the "Time lag" from an engineering point of view.

In the Team Project, we chose a theme from three themes; Asteroid Mining, Greener Space, and Carbon Cycle. According to the theme, we were divided into a team consisting of about 40 members. For my theme, I chose Asteroid Mining and did research on a resource utilization of asteroids. I contributed to the team by making comments from an engineering standpoint. It was sometimes difficult to work with people who had different backgrounds; however, this led to valuable discussions. This experience gave me confidence to have discussions in an international environment.

In the SSP, there were many students who had different background from all over the world. This led us to learn a lot about different ways of thinking in different culture and specialty. There was an event called "Culture Night". Every week students from different countries hosted the Culture Night to represent and introduce their countries. Host country's students had a presentation and served traditional foods/drinks in traditional costumes. When Japan was the host country, we served natto and sake in yukata. Through Culture Night, we could learn a lot about cultural difference by experiencing food/clothes culture. Furthermore, through looking at the Japanese culture from different point of view, I learned about high technologies in Japan and virtues of Japan that I have never realized and now have a better understanding of my country.

As above-mentioned, I had a great academic and cultural experience in the SSP10. Moreover, I met many people who work and will be working in the frontier of space development. Meeting and collaborating with them stimulate and motivate me to do research. I really appreciate having this precious opportunity to participate in the SSP10.



Group photo of Team ASTRA



Japanese Culture Night