

平成21年度 若手研究者 I T P 最終研究・研修報告書

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部門・職（助教，学術研究院） あるいは 専攻・修士／博士（学年）	氏 名	生 年 月 日
Assistant Professor, Department of Civil and Structural Engineering	Hiro Ikemi	September 25 th , 1968
研究テーマ	Investigation of GIS for emergency management and administration of local governments in the United State	
派遣国，機関名	ESRI Corp. 503 San Jacinto st, Redlands, CA 97232 Duration: July 10 th to September 9 th	
実施した研究・研修内容（派遣先での研究発表や研究論文の執筆状況なども含む）		
<p>1 Participation in the ESRI International User Conference (July 11th to 17th)</p> <p>This international conference, which is held by ESRI Corp. on the convention center in San Diego, consists of various sessions that introduce functions of the new ArcGIS products and cases studies of ArcGIS users. The lecture of the ESRI president was done in the plenary session at the first day. In this lecture, he talked about the advanced use of GIS in many issues of the global warming, the natural disaster, the propagation forecast, the nature conservation, the resource management of the health, public health, the epidemic, and the local government. In this session, a ceremony was also done, and United States electric power company Center Point Energy company and Maryland state won the prize concerning the advanced use of GIS. The Maryland state governor's lecture was interesting, and especially, the objection of "Can you show me my house?" symbolized the adequate recognition of an American local government of the problem and the characteristic concerning GIS. His lecture made me feel that conditions surrounding Japan was considerably late strongly. Moreover, Willie Smits that had used GIS for the tropical forests protection of Indonesia, Mr. Tim Trainor of United States Statistics Bureau, and Per's economist's Mr. Hernando de Soto lectured in the keynote session following this. About 12,000 people participated in this conference, in spite of the influence of an economic slump and new influenza.</p> <p>I mainly participated in the sessions of disaster management in this conference. It included some Japanese presentations about case studies of Kyoto University, Wajima City, and Kashiwazaki City concerning the seismic hazard. I also made a presentation about the Fukuoka seismic disaster and disaster management in the session "Real-Time and Web-Based Data Management" on July 15th.</p>		
<p>2 Training courses in ESRI Campus in Redlands</p> <p>I participated in the following training courses to acquire knowledge concerning latest WebGIS and the spatial data base technology.</p> <ul style="list-style-type: none"> ● ArcGIS Server: Web Administration Using the Microsoft .NET Framework (7/22 - 7/24) ● Working with Geometric Networks for Utilities (virtual class) (7/29 - 7/31) ● Introduction of ArcGIS Server (8/11 - 8/12) ● Managing Editing Workflows in a Multiuser Geodatabase (8/13 - 8/15) ● Working with Spatial Analyst (8/18 - 8/20) ● Building Geodatabase (8/25 - 8/27) ● Introduction to the Multiuser Geodatabase (8/28 - 8/29) ● Advanced Techniques for Labels and Annotation (9/2 - 9/4) 		

3 My researches in this trip

3.1 Regarding land-use

A long-term land-use change in Fukuoka, Japan, as study area, has been analyzed spatiotemporally with 100m-mesh land-use data of 1900 and 1950, which has been developed from old 1/50,000 topographical maps with farm land, forest land, urban land, river, seashore, and sea. Then, the maps have been integrated into geologic and geomorphic characteristics using the geographic information system (GIS) to clarify regional interactions between human activities and geomorphic process.

The results are as follows. (1) Land-use in Fukuoka, especially regarding area of colony and distribution tendency of farm land, changed significantly from 1950 to 1976 as compared to land use of 1900 harmonized with terrain. (2) From 1900 to the present, the plains and foothills in which Quaternary and Tertiary sedimentary rocks are distributed have been being mainly used by humans, and the mountainous districts of Tertiary volcanic rocks and pre-Tertiary tend to be developed mostly as farm land. Meanwhile, pre-Tertiary plutonic rocks area had already been developed in various places before 1900, and the purpose of development changed from farm land to urban use after 1950. (3) The relation between geology and slope angle in each land use implies that the terrain of Tertiary sedimentary rocks and pre-Tertiary plutonic rocks had been considerably influenced by human activities.

Now, I prepare submitting this results as a original paper to "Oyo Chishitsu".

3.2 Regarding emergency management

I had a meeting with Mr. Russ Johnson who was the manager of the Public Safety section on August 7th. I heard that he originally belonged to the organization for the disaster, and had an experience of lecturing it concerning the disaster correspondence by invitation of Kyoto University. After my brief introduction about the GIS project of the Fukuoka Prefecture west offing earthquake, I explained the purpose of this meeting and the problem concerning emergency management in Japan. Next, his explanation concerning the emergency management of ESRI was received. In this explanation, he emphasized the importance of Data Management and Mitigation to achieve effective Situational Awareness though there was a tendency for only situational awareness is thought as the most important in emergency management cycle in the United States as well as Japan (Mr. Johnson was using word "traditional cycle"). I also heard that the introduction of the emergency management system (Enterprises type) was advanced to the local government by ESRI specifying the data model for the disaster.

The ESRI Corp. is a private company that does the development of ArcGIS and the consultant of GIS. The participation in the ESRI International User Conference and the training courses is good experience for a student to get technological acquisition of the GIS tool and the solution of a technical problem. However, the advance preparation for adjustment of schedules of meeting with the ESRI's researchers is indispensable through the ESRI Japan Corp. because an academic seminar with the employee cannot be expected when a researcher like me visits to the ESRI Corp.

注) 派遣終了後, 2週間以内に研究室の担当教員および krsasaki@mine.kyushu-u.ac.jp (佐々木教授) itp-office@civil.kyushu-u.ac.jp (横田) まで提出ください。