



Japanese-German Graduate Externship for Research on Deep Earth Volatile Cycle

日本学術振興会 日独共同大学院プログラム 東北大学 Tohoku University
地球深部揮発性元素循環研究に関する日独共同大学院プログラム

6-3, Aramaki Aza-Aoba, Aoba-ku, Sendai 980-8578
Earth Science Building #409, Graduate School of Science, Tohoku University
Japanese-German Graduate Externship program office
TEL: +81-22-795-5577
FAX: +81-22-795-6664
E-mail: [jgge_steering@\[gcoe.es.tohoku.ac.jp](mailto:jgge_steering@[gcoe.es.tohoku.ac.jp)
Website: <http://jgge-sci.tohoku.ac.jp/en/>



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Earth and Environmental Sciences(GP-EES)**
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Program summary

“The Japanese-German Graduate Externship” is a program established by JSPS (Japan Society for the Promotion of Science) to promote exchange among universities in Japan and Germany by supporting the reciprocal student enrollment in graduate courses in the two countries and collaborative instruction. Japanese and German universities work together to carry out joint research and education activities at the graduate level. Doctoral students and young researchers including academic teaching professionals and post-doctoral fellows are exchanged between the counterpart graduate schools where they engage in research and education activities. The program aims to promote more systematic academic exchange between universities and graduate schools in Japan and Germany, while helping both to foster young researchers in doctoral programs and to advance international joint research.

This program is a joint education and research program organized by Tohoku University and the University of Bayreuth, which has been selected as one of the above programs. With “Circulation of Volatile Elements” as a common topic, this program interconnects many Earth science disciplines effectively and extend it to planetary science seamlessly. In this way, we aim to provide graduate school education and research program that allow students and researchers to “Look into the Earth from a Comprehensive Perspective”.

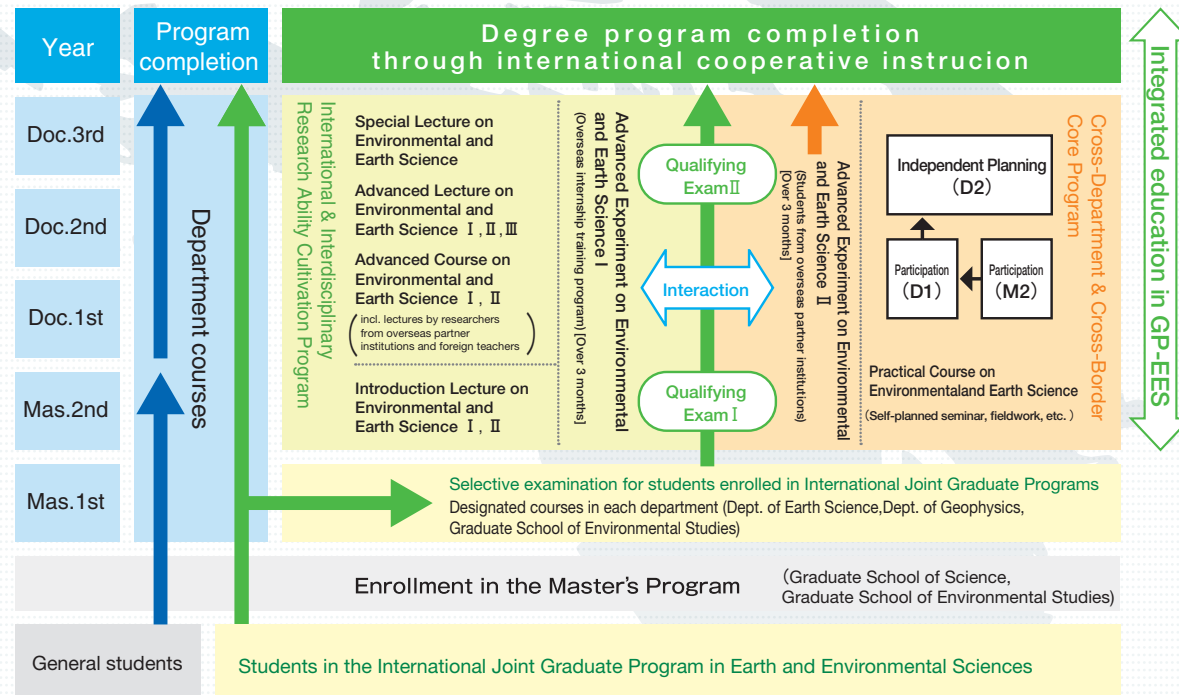
Bayerisches Geoinstitut, University of Bayreuth

The University of Bayreuth is a university in Germany founded in 1975. The university, headquartered in Bayreuth, Bavaria, Germany, has six faculties and many attached research institutes.

The Bayerisches Geoinstitut was established in 1986 with the aim of clarifying the structures, formation, and evolution of the Earth and other planets, determining the properties of the materials that make up the Earth and other planets through laboratory experiments and the use of computers. This world-renowned research and education institute has been conducting world-leading research, and is rated on a par with the Geophysical Laboratory of the Carnegie Institution for Science. The institute has state-of-the-art techniques and equipment, including high-resolution electron microscopy (HREM), various spectroscopic analysis such as Moessbauer, laser ablation inductively coupled plasma mass spectrometry, and various crystal structure analysis apparatuses. Many of the brightest researchers capable of making full use of these systems work at the Bayerisches Geoinstitut. Incidentally, the staff and students at the Institute are highly multinational, with more than 10 nationalities.

Curriculum

The contents of lectures are related to the circulation of volatile components. The project has three goals: (1) to enhance the ability to conduct cutting-edge research; (2) to develop the ability for interdisciplinary study; and (3) to develop communication skills and leadership.



Research theme

- Distribution and abundance of volatile components in the deep Earth
- Circulation of volatile components between deep interior and surface of the Earth through the Earth's history
- Effect of volatile components on dynamics of the Earth
- Distribution of water and volatile elements in the solar system
- Interaction of volatile elements with silicates and organic matter during planet formation
- Origin of the Earth's water