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Graduate School of Science and Faculty of Science Tohoku University Japan

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Photography by Kohai SHIKAMA

Message from the Dean

Masahiro TERADA
Professor

The origin of science can be traced back to the 6th century BC, and it started with observation and classification of natural phenomena. Accordingly, natural science is the most traditional field in the various scientific fields. Natural science can simply be called “science”, and thus, we feel that natural science can be used to learn the field of science.

“Science (= Natural science)” is a field of learning, the essence of which is “intellectual creation”, and it is initiated from pure inquiring minds and curiosity, i.e., an appetite for knowing or interest towards objects is needed. The missions of the Faculty of Science is to understand the principles of nature, which our predecessors have clarified, to produce intellectual assets for humankind by exploring “intellectual creation” with imagination and a spirit for challenges, and to pass them along to future generations in a systematized form.

The Faculty of Science of Tohoku University, which was established over 100 years ago, is one of the largest faculties of science in Japan. It is composed of 7 departments, Mathematics, Physics, Geophysics and Astronomy, Chemistry, GeoEnvironmental Science, Earth and Planetary Materials Science, and Biology, each performing top notch research in multiple areas. The research of the Faculty of Science of Tohoku University involves a wide variety of academic fields from ways to produce new energy to “intellectual creation” through integrated research in different fields and brings about close interactions with a diverse group of people. Meeting people with diverse backgrounds will surely enriches your life and will lead you to new experiences and knowledge as well as help you recognize various cultural values and world views.

We look forward to facing new challenges towards “intellectual creation” with young people like you on the Aobayama campus in the lush greenery.



School of Science, Tohoku University

“Research First” and “Open Door”

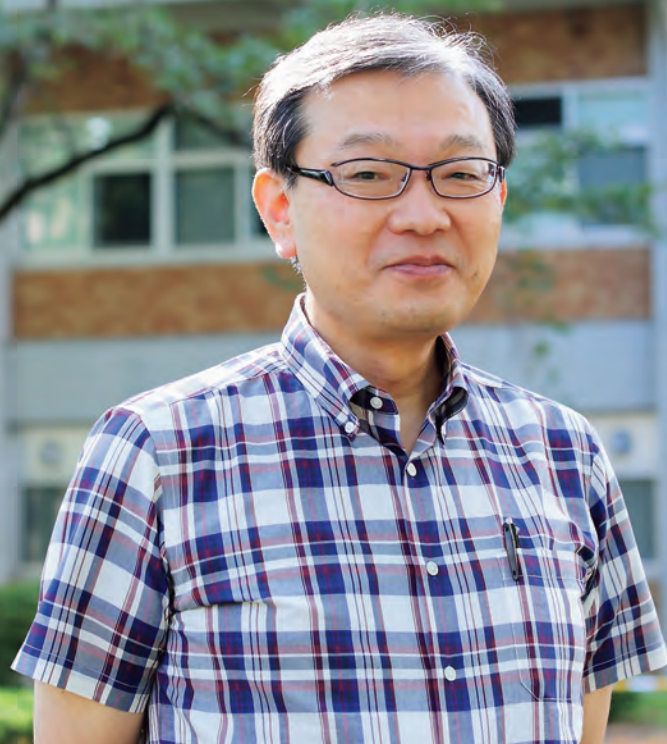
Tohoku Imperial University, College of Science (currently, the Faculty of Science) was founded in 1907 as the third Imperial University after Tokyo and Kyoto. Since then, it has made remarkable achievements in research and has provided important human resources to our society. Of special note in our history are the ideas of “Research First” and “Open Door”. “Research First” is our policy of giving research our highest priority, meaning that research is our ultimate mission. We believe that it is possible to provide true education to students through research. This long-standing philosophy of creativity and originality has been proven by producing many recipients of the Order of Culture, the Japan Academy Medal, and so on. Our door is always widely open to the world. In other words, we have always operated with an “Open Door” policy. We willingly give our educational and research resources back to society, which in turn helps us to find undiscovered genius and develop it. In the early years of our history, on the bases of competence and ability without adherence to custom, we accepted female students and those who had not graduated from high schools of the old education system, such as graduates of technical institutes. The latter were called “collateral” during that era. This is an example of the “Open Door” policy, which allowed Chika KURODA, Ume TANGE, and Raku MAKITA to join us as the first three Japanese female students. Seiji KAYA, former President of the University of Tokyo, is an example of “collateral” and is a graduate from the Kuramae Institute of Technology (the former Tokyo Institute of Technology). In addition, Professors Cheng Jian Gong and Su Bu Qing, prominent people in Mathematics in China, are both graduates from our Faculty and the first two foreign people to obtain doctorate degrees in Japan. Those two philosophies are indispensable for distinguished and productive research. Some 40%–45% of our teaching staff each year are not graduates from Tohoku University, which is another example of our “Open Door.”

Faculty of Science

The Faculty of Science is responsible for education and research in the basic sciences. It encompasses all disciplines of natural science. Our activities are rooted in original questions about nature and are centered around a strong appetite for learning. The outcomes of our activities contribute to the welfare of humankind after they have been applied to technology. Original and creative research done in the Faculty of Science will be extremely important in the coming age as society increasingly focuses on concerns other than economic ones, such as a sustainable global environment and an improved quality of life. Doors to great success are open wide before you.

Graduate School of Science

The Graduate School of Science provides high-quality educational and high-level research opportunities to foster professionals so that they can become proficient in specialized knowledge and research methodologies. Scholars from the Research Institutes of Tohoku University and other domestic and foreign research institutes are working jointly with us. All six of our departments adopted the “Program for Leading Graduate Schools” in 2014. We have developed an “attractive campus” and have made this university a highly advanced center of education and scientific research in the world based on the fruits of the “Program for Leading Graduate Schools”. The “Program for Leading Graduate Schools” has been designed and implemented in order to guide top students in their efforts to become global leaders with a commanding and creative presence in industry, academia, and government. By bringing together first class educators and students from all over the world and with the participation of industry, academia, and government, the program supports the radical reform of doctoral degree curriculums to go beyond specialized fields in order to develop internationally recognized degree programs. Moreover, the program is designed to promote the formation of graduate schools worthy of the highest institutes of education.



Tadahiro HAYASAKA

Research Area

My major research field is atmospheric physics, particularly radiative properties of clouds and aerosols, and their effects on climate change. Now, I am promoting observational and data analysis studies on the air-sea interactions in the mid-latitude North Pacific and remote sensing of clouds and aerosols from satellite and ground-based observations.

Research Topics

- 1 Climate change
- 2 Clouds
- 3 Aerosols
- 4 Atmospheric radiation

Borders in the world are vanishing, particularly in the science community. The numbers of foreign students are increasing in many countries as well as in Japan, and international collaborations in research have become more active. Why is international collaboration important in the university? The major functions of universities are the discovery of important new knowledge, the communication of that knowledge to students and cultivation of an understanding in them. We need different points of view and stimulation to achieve these functions. It is, therefore, quite important to cultivate discussion among faculties and students who have various educational backgrounds as well as various research fields. We strongly promote international programs, such as the International Graduate Program for Advanced Science and the International Joint Graduate Programs. I trust that young students will find new knowledge and cultivate a new world by studying at Tohoku University.



Kunio INOUE

Research Area

My research area is Neutrino Science which covers studies of neutrino properties and application of neutrino detection. These studies are connected with resolving Big Mysteries of the Universe and Particle Physics such as "matter dominance in the universe" and with revealing the history of the universe.

Research Topics

- 1 Long baseline reactor neutrino oscillation
- 2 Neutrino geophysics and neutrino astronomy
- 3 Neutrino-less double beta decay
- 4 Ultra-low Background Experiment

Neutrino is the most dominant matter particle in the universe. It reacts only through weak interaction and consequently very elusive. The world largest liquid scintillator neutrino detector, KamLAND, has established ultra-low radioactivity environment and is successfully measuring anti-neutrinos from nuclear power reactors and those from the earth. These measurements resulted in the most precise measurement of neutrino oscillations and the first measurement of radiogenic heat produced in the earth. Its huge and ultra-clean environment is also adequate to perform studies of rare phenomena such as double beta decay and dark matter detection. My recent focus is investigation of "Majorana nature of neutrinos" by searching for neutrino-less double beta decay. If neutrino has the Majorana nature, it means neutrinos and anti-neutrinos are the same particle and yet unknown heavy neutrino can be naturally introduced in the framework of particle physics. This heavy neutrino is thought to be the origin of "matter dominance or anti-matter absence in the universe," "light neutrino mass" and "dark matter." Our experiment, KamLAND-Zen, has achieved the world best sensitivity on the search and will continue to lead this field. It is an international collaboration from the beginning. We welcome well-motivated young talent. Why don't you join us and resolve the big mysteries of the universe and particle physics together?

Master's student in Chemistry from Indonesia

I always dreamt of studying in Japan, and getting an admission at Tohoku University in chemistry department program definitely was a milestone of my life. Before joining the graduate program, I attended an undergraduate program under the same department for a full four years, and I always thought to myself that years I spent studying here were the best-learning-years in my life. I feel very fortunate to be able to learn from highly-qualified teaching staff and to conduct research under great supervisors, whose experiences and guidance were beyond my expectations. They have not only helped me to develop my knowledge, lab skills, and strong interest in research, but they have also helped me grow personally. I am always encouraged to seize new experiences from joining an international symposium to carrying out joint research, which has built my self-confidence and a great deal of skills needed for my future endeavor. Every member in the laboratory is very kind and supportive and have become like family after a while despite the rigorous study environment. Life outside research is also very exciting! As an active person, I really enjoy being involved in many activities,

and here I have been provided excellent opportunities to do so. I joined Tohoku University 'Kyudo' or Japanese archery circle, and one of the Sendai's famous 'Suzume Odori' dance team. In addition, I was a member of a volunteer organization of Sendai city. Being engaged in those activities not only helped me to learn Japanese and Japanese culture but also allowed me to feel the sense of being involved in the real Japanese community, which certainly was a memorable experience. But beyond that, I got to grow valuable friendship with many people across the globe! Apart from this, I enjoyed exploring every inch of the beautiful Sendai city with my friends, visiting famous historic sites to the hidden 'sushi' shop nearby. When it gets colder, we often go to 'onsen' or hot springs, for which the area is famous, and spent a very pleasant time there.

With this being said, I honestly believe that studying in Tohoku University is probably one of the best decisions I made in my life. For any prospective students who are not only willing to be involved in great research but are also excited to gain extraordinary lifetime experiences, Tohoku University is for you!

Madoka Eurika Hazemi



Kim Eric Andreas SANDVIK



Doctoral student in Physics from Finland

First time I came to Tohoku University was three years ago as an exchange student in the COLABS program. I was impressed how students on a large scale are involved in research in designated laboratories. In my opinion this is a very efficient way of learning. Yet, it requires good resources from the university which is something not to be taken for granted. In the laboratory to which I was assigned, I experienced a strong sense of community unlike to that in Finland where working places tend to be for work only. For this reason, my laboratory became a kind of a family substitute for me in Japan. Because I wanted to challenge myself and because I felt the research I had started here was worth continuing, I decided to apply for the IGPAS doctoral course before finishing the exchange program. After returning to Finland to complete my Master's degree I was back in Tohoku University.

Now, I spend much of my time on my research on experimental condensed matter physics in my laboratory on the Katahira campus. During my student exchange and as a graduate student, I also have had the opportunity to travel to Australia and United States

for neutron scattering experiments. As for my free time, as a hobby, I joined an international choir to improve my singing technique. In addition, I like to run, and so, I found a perfect place for this along Hirose-river, which runs through the city.

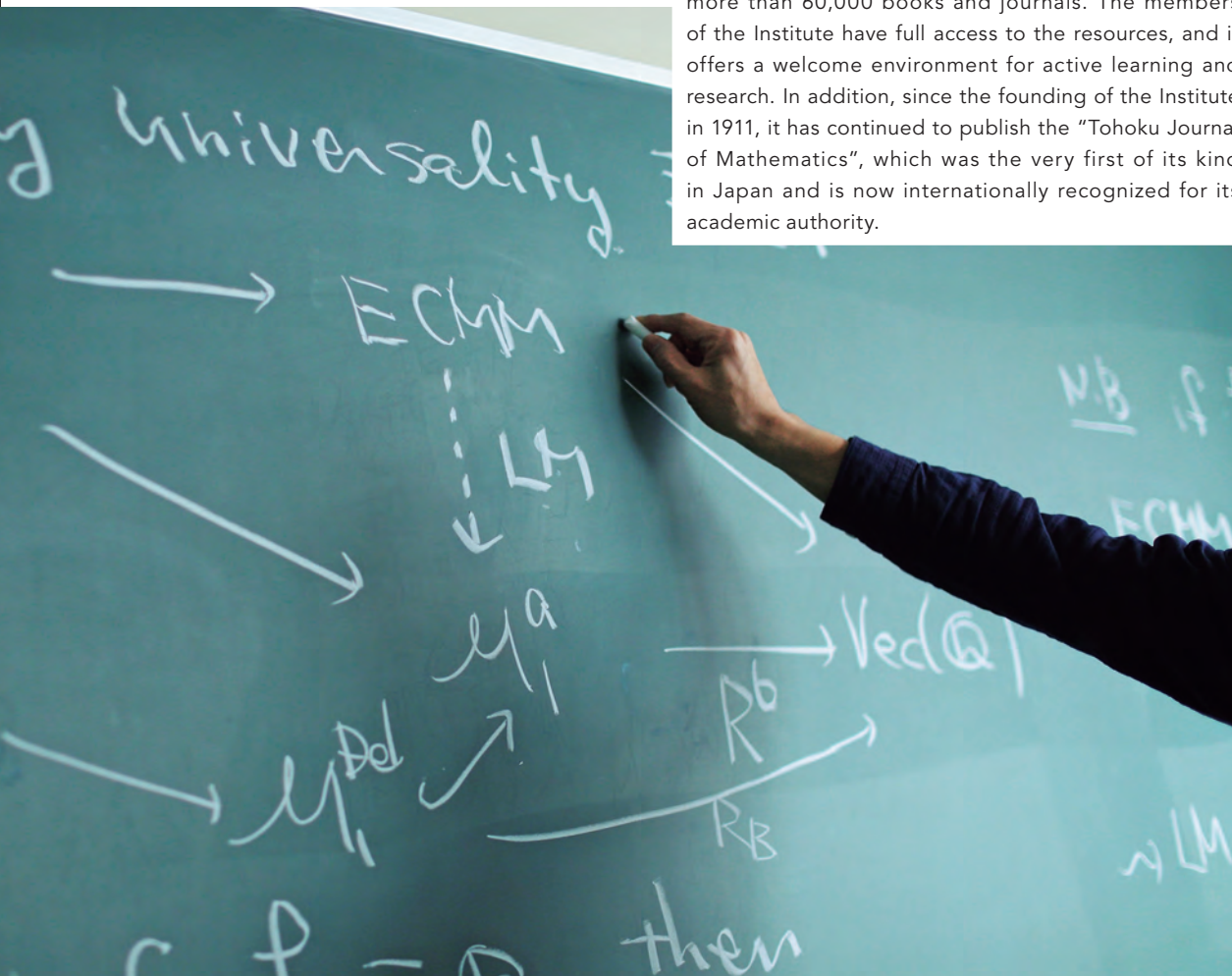
I like the beautiful historic feel of the Katahira campus, which is also very close to the downtown Sendai. This is also true for the Kawauchi and Aobayama campuses with the completion of the new east-west subway line. Public transportation in Sendai is nice and convenient. However, in my experience, by using bicycle everywhere, the places one needs to go can be reached within 30 minutes or less because Sendai is such a compact city for its size.

Good thing about studying in Tohoku University is that it is a prestigious University in Japan, which means you will likely be surrounded by very talented students and staff that are striving to perfect their knowledge. This causes positive peer pressure that will encourage and help you to grow in the knowledge of your field as well. For prospective students, don't hesitate to use your opportunity to study at Tohoku University.

MATHEMATICS

Algebra
Geometry
Analysis
Global Analysis
Applied Mathematics

Mathematics is the language for describing the natural world. Its progress has been directly linked to that of other scientific fields, as notably seen in the case of Einstein's formulation of general relativity, which was made possible by the timely development of Riemannian geometry. The Mathematical Institute of Tohoku University was established in 1911. Many important contributions to various fields of modern mathematics have since originated from the Institute. Among these are Tannaka's Duality Theorem by Tadao TANNAKA and the concept of Sasakian Manifolds by Shigeo Sasaki, which has recently drawn renewed interest due to its connection to Superstring Theory. The Institute is currently a base of many researchers and students, both undergraduate and graduate, who are actively engaged in a wide range of research fields, which cover algebra, analysis, geometry, and logic. The Institute houses one of the best libraries in the country, which holds more than 60,000 books and journals. The members of the Institute have full access to the resources, and it offers a welcome environment for active learning and research. In addition, since the founding of the Institute in 1911, it has continued to publish the "Tohoku Journal of Mathematics", which was the very first of its kind in Japan and is now internationally recognized for its academic authority.



PHYSICS

Theoretical Physics

- Particle Physics and Cosmology
- Condensed Matter Physics
- Nuclear Physics
- Statistical Physics

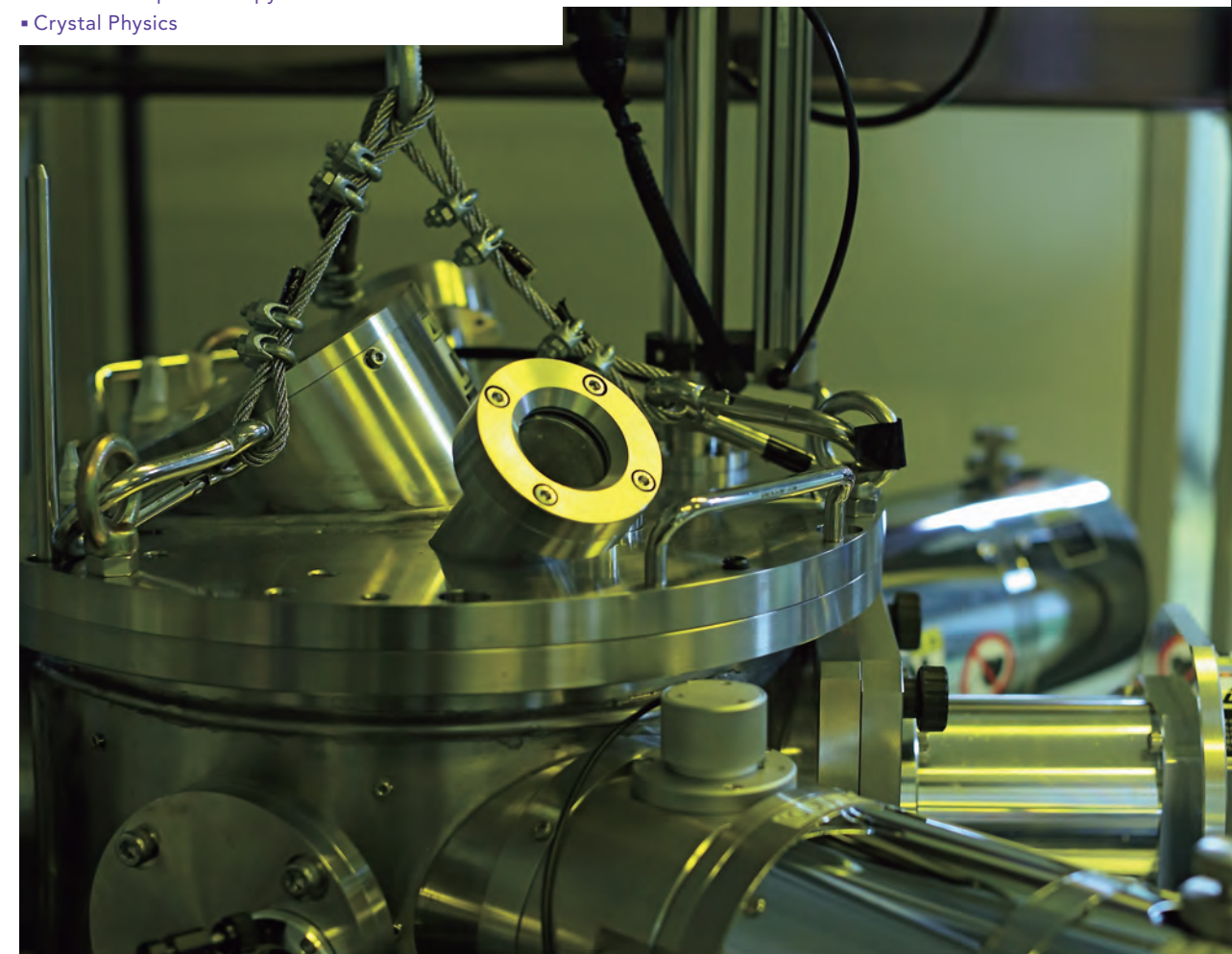
Experimental Nuclear and Particle Physics

- High Energy Physics
- Neutrino Science
- Nuclear and Hadron Physics
- Accelerator Science

Experimental Condensed Matter Physics

- Electronic Properties of Condensed Matter
- Metal Physics
- Quantum Condensed Matter Physics
- Soft Matter and Biophysics
- Solid State Spectroscopy
- Crystal Physics

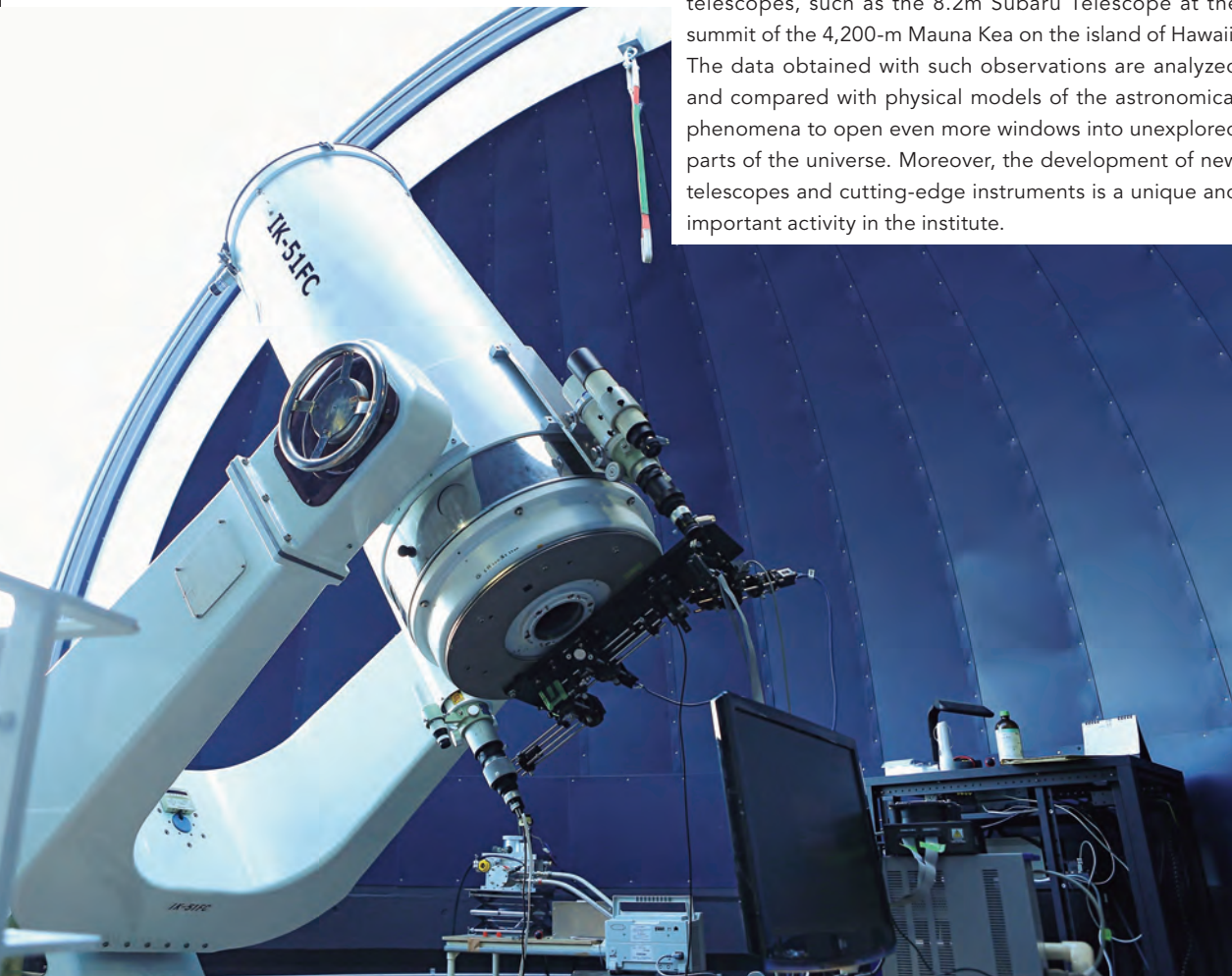
The Department of Physics at Tohoku University is one of the oldest and largest in Japan, having almost a 100-year history since its foundation in 1911, and it now has a faculty of more than 160 professors and about 250 students in the graduate school. Not only the faculty members but also those from research institutes and laboratories are actively involved in the school's programs. Research in our department covers all fields of physics from particle and nuclear physics to condensed-matter physics and extends even further to biophysics and industrial physics. Our graduate students are undertaking world-class research at the highest levels at the frontiers of physics under the guidance of their experienced supervisors. The advanced research facilities of our department assist in their activities.



ASTRONOMY

Cosmology
General Relativity
Galactic Astronomy
Stellar Physics
Astronomical Instrumentation

A total of 70 members in the institute, including faculty members, postdoctoral researchers, and students, are working on a wide variety of problems related to astronomical objects. The research activities cover 1) searching for planets in nearby stars, 2) understanding the physical properties of stars in our galaxy, 3) revealing the formation and evolution processes of galaxies in the distant universe, and 4) understanding the cosmological framework of the universe. These subjects are studied in two ways. The first is through theoretical research, where models are created and analyzed to understand a variety of fundamental astronomical phenomena on the basis of physics and mathematics, occasionally using computational resources, such as super-computers. The second is through observational research. Astronomical phenomena are observed with electromagnetic waves at all wavelengths, such as radio, infrared, optical, ultraviolet, X-ray, and gamma-rays, using various modern telescopes, such as the 8.2m Subaru Telescope at the summit of the 4,200-m Mauna Kea on the island of Hawaii. The data obtained with such observations are analyzed and compared with physical models of the astronomical phenomena to open even more windows into unexplored parts of the universe. Moreover, the development of new telescopes and cutting-edge instruments is a unique and important activity in the institute.



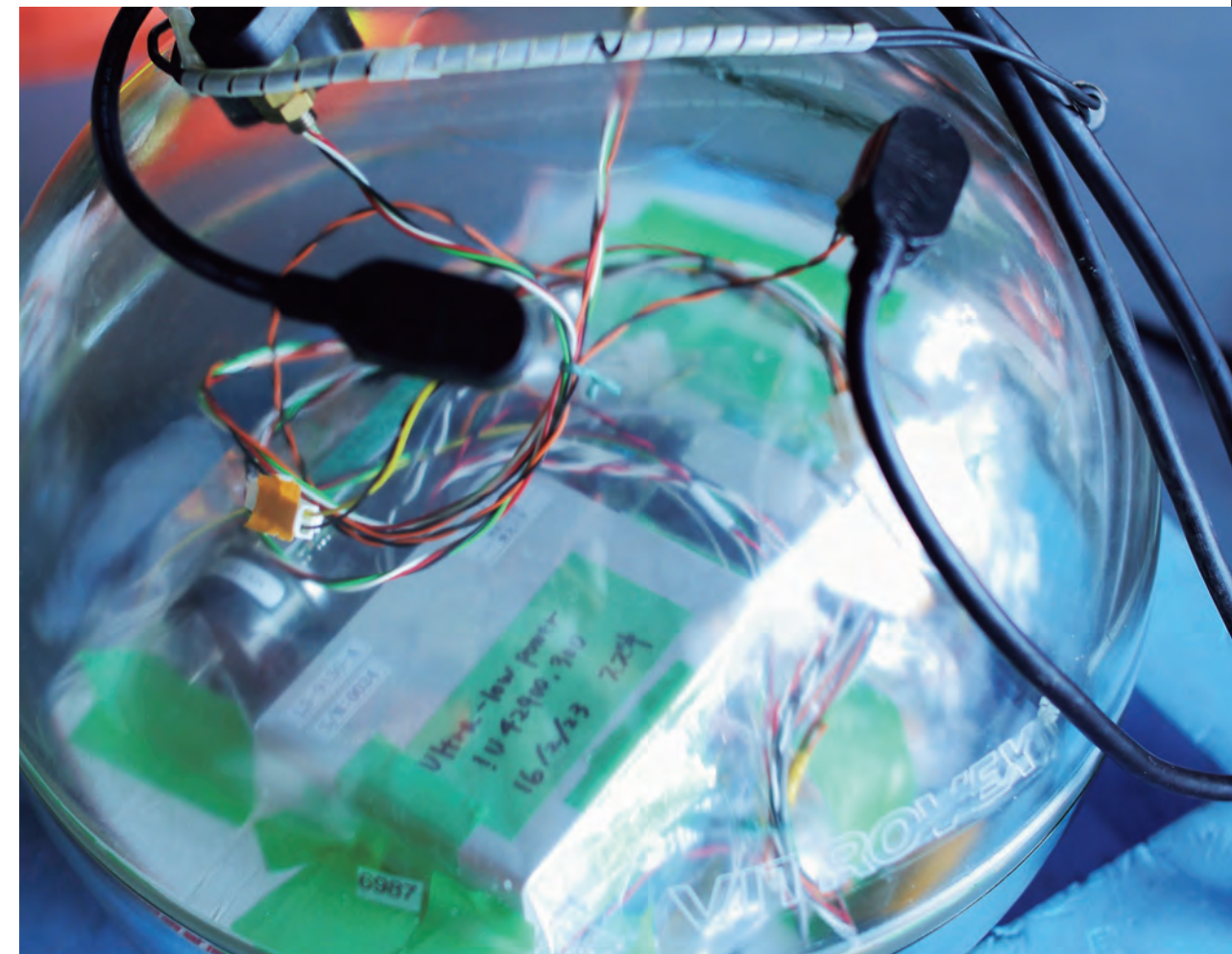
GEOPHYSICS

Solid Earth Physics
Atmospheric and Oceanic Science
Planetary and Space Physics

Affiliated Centers

- Center for Atmospheric and Oceanic Studies (CAOS)
- Planetary Plasma and Atmospheric Research Center (PPARC)
- Research Center For Prediction of Earthquakes and Volcanic Eruptions

Geophysics is a broad research field involving studies on solid Earth, oceans, atmosphere, upper atmosphere, ionosphere, and planets. Geophysicists use physical approaches to investigate various phenomena in these areas and study their structures as well as their long-term and short-term variations in order to clarify the formation and evolution processes of our mother Earth and the solar system. In recent years, as a natural science, geophysics has been developing in close relation with human society. During the last 60 years, the Department of Geophysics has made great efforts and important contributions to establishing the framework of geophysics. We treasure the history and traditions of many of our seniors in our department, and at the same time, we are working to open new frontiers of geophysics.



CHEMISTRY

Inorganic and Analytical Chemistry

Organic Chemistry

Physical Chemistry

Interdisciplinary Chemistry

Advanced Atomic and Molecular Science

Reaction Mechanism and Dynamics

Solid-State Chemistry

Biofunctional Chemistry

Affiliated Centers

- Research and Analytical Center for Giant Molecules

Chemistry is an academic field in which researchers strive to understand substances at the atomic and molecular level, serving as a basis for not only basic science but also a variety of fields, such as engineering, life science, medical science, and pharmaceutical science. Therefore, chemistry is often called “the central science”.

The Department of Chemistry is proud of our academic culture wherein our researchers actively study unexplored fields and create new chemistry. In the Department of Chemistry, we aim to learn the truths of chemistry through the synthesis of new molecules, discovery of new properties, theoretical prediction and understanding of chemical phenomena, microscopic observation of atoms and molecules, development of methods for chemical analysis, and solving the mysteries of life and nature.

Since the founding of the Department of Chemistry in 1911, more than 4000 chemists, including four recipients of the National Culture Award; Riko MAJIMA, Shiro AKABORI, Tetsuo NOZOE, and Koji NAKANISHI, have left a legacy of important work in their respective fields. Currently, the Department of Chemistry with its 52 faculty members in 17 research groups is now the largest in the nation. The ratio of students to faculty members is almost 1:1, which creates a highly conducive environment for student research and study.

The role of chemistry is expected to become more and more prominent for building a sustainable society in which mankind harmonizes with the global environment.



EARTH SCIENCE

Division of GeoEnvironmental Science

Paleo-Environment Change

Paleo-Bioevents and Paleontology

Fault and Crustal Dynamics

Geomorphology

Human Geography

The Earth's integrated system of the atmosphere, hydrosphere, and biosphere is driven by the energy of solar radiation just as we are, whereas the solid Earth (lithosphere) is driven by the decay energy of the radioactive elements in the Earth. The boundary between these four spheres is called the Geosphere, and these four spheres interact through the circulation of energy and materials. A huge variety of episodes has occurred and evolved in the Geosphere during the long history of the Earth, and we human beings are the newest product of this sphere. The Department of Geoenvironmental Science is looking at the past, present, and future in the Geosphere's environment, examining ancient rocks and sediments with a current knowledge of physics, chemistry, and biology. However, these changes cannot yet be fully understood by using today's observational techniques alone since they only produce snapshots of the evolving Geosphere. Our Department is coming to a better understanding of the Earth's environmental system in order to combat the serious problems caused by human activities.



EARTH SCIENCE

Division of Earth and Planetary Materials Science

Mineral

**Natural Resources and Environmental
Geochemistry**

Early Solar System Evolution

Earth and Planetary Material Physics

Volcanology and Geofluids

Geology and Petrology

Research on highly advanced Earth and Planetary Science is required to address new topics and find new tools to not only understand the phenomena of the Earth but also those of space. These include studies on the ultra-high pressure of planetary minerals, the evolution of materials and life on the Earth and in space, the formation of low-gravity materials in space, and various molecular-scale materials-formation mechanisms. The Department of Earth Science has not hesitated in adopting new methods and in developing advanced techniques involving synchrotrons, microgravity, and novel in-situ observation systems for crystal growth and phase transitions.

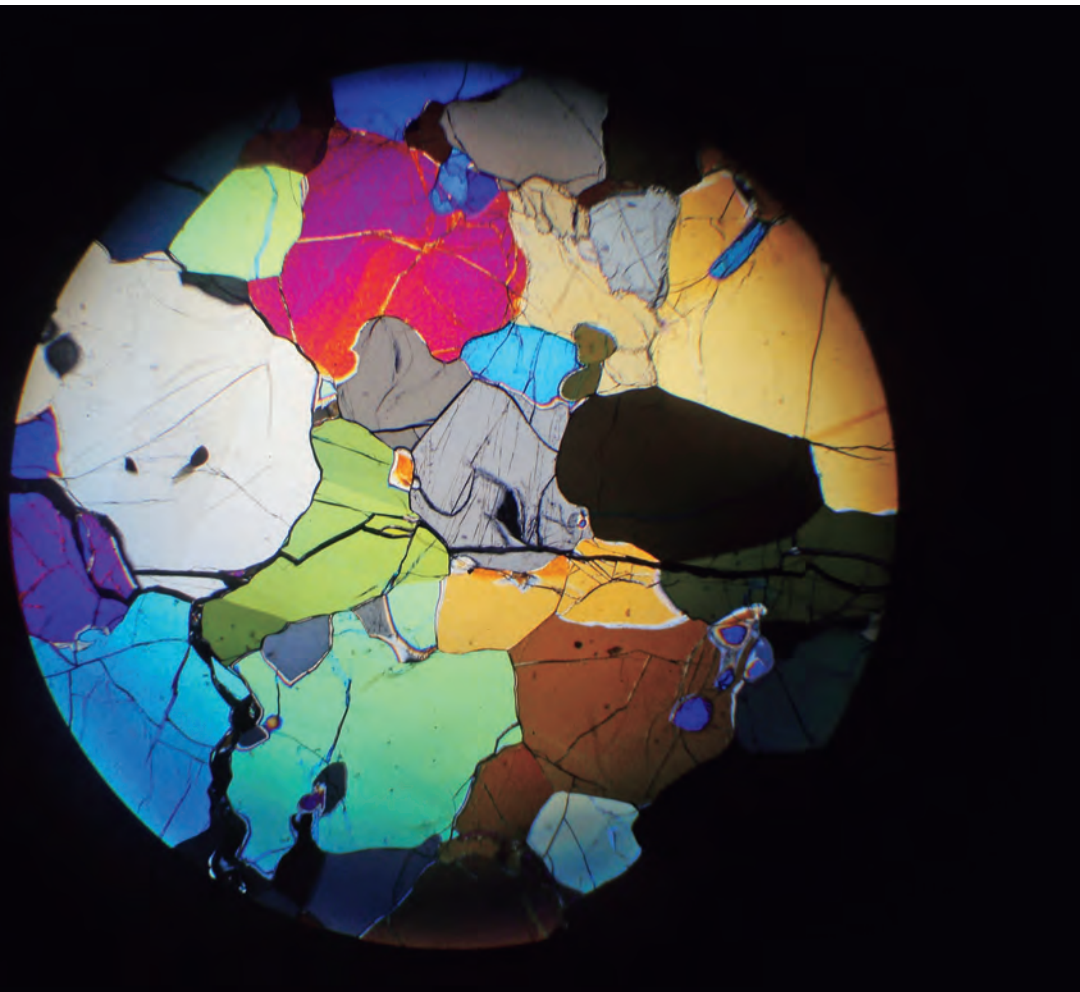
BIOLOGY

Biomolecular Sciences

Developmental Biology and Neurosciences

Environmental Life Sciences

The land that we stand on, the air that we breathe, the food that we eat are all products of the past 4.6 billion years of the Earth's history. We human beings too. How were we created? Where will we go? The Department of Biology was established in 1922 and has been producing a number of graduates and postgraduates active in both academic and non-academic worlds. Since the Department was founded, the priority-in-research and open-door spirits of Tohoku University have governed the Department as well. Although the Department has kept the spirit and tradition founded by the pioneers, it has promoted updated research activities in response to the ever-developing area of biological sciences. Present research activities cover a wide range of basic biology from molecular and cellular biologies through ecology and evolutionary biology. Three facilities, the Asamushi Laboratory of Marine Biology, the Mount Hakkoda Botanical Laboratory, and the Botanical Garden, contribute to the education and research activities in the department. In 2001, the whole department was reorganized to establish the Graduate School of Life Sciences. We are more than happy to welcome talented biologists and students to promote and enjoy biological sciences in Sendai.



Educational Programs

Degree Programs

[Undergraduate]

- ☐ AMC (Advanced Molecular Chemistry Course):
A four-year undergraduate chemistry course in English, and Japanese language is not required to obtain a Bachelor of Science degree. There is no application fee.
- ☐ General Undergraduate Program (Taught in Japanese)

[Graduate]

- ☐ IGPAS (International Graduate Program for Advanced Science):
Master’s and Doctoral program with 8 MEXT scholarship positions.
- ☐ General Graduate Program

Non-degree Programs

[Exchange Programs with Partner Institutions]

- ☐ JYPE: Junior Year Program in English (Undergraduate)
- ☐ DEEP: Direct Enrollment Education Program (Undergraduate, Graduate)
- ☐ COLABS: Cooperative Laboratory Study Program (Graduate)

[Others]

- ☐ Auditing Student Program (Undergraduate)
- ☐ Research Student Program (Graduate)
- ☐ Special Visiting Trainee (Undergraduate, Graduate)

International Joint Graduate Programs

- ☐ Graduate Program in Spintronics (GP-Spin)
- ☐ The International Graduate Program in Earth and Environmental Sciences (GP-EES)
- ☐ Graduate Program on Physics for the Universe (GP-PU)
- ☐ Graduate Program in Data Science (GP-DS)

Double Degree/Joint Education Program

- ☐ Double Degree Program with Ecoles Centrales and INSA-Lyon, France
- ☐ Joint Education Program with Tsinghua University, China

Financial Aid

Scholarship/Fellowship

International students may have opportunities to apply for fellowships/scholarships before or after admission. In addition, degree students are eligible to apply for admission and tuition fee waivers.

- ☐ Tohoku University President Fellowship
- ☐ MEXT (Japanese Government) scholarship
- ☐ MEXT Honors Scholarship
- ☐ JSPS (Japan Society of Promotion of Science) research fellowship
- ☐ Private foundation scholarships

Affiliated Research Institutes

The Graduate School of Science has formal collaborative agreements with several affiliated research institutes. More than 100 students participate in research activities in the following affiliated institutes.

Inside Tohoku University

- Advanced Institute for Materials Research (AIMR)
- Cyclotron and Radioisotope Center (CYRIC)
- Research Center for Electron Photon Science (ELPH)
- Institute for Materials Research (IMR)
- Institute of Multidisciplinary Research for Advanced Materials (IMRAM)
- International Research Institute of Disaster Science (IRIDeS)
- Research Center for Neutrino Science (RCNS)
- Center for Academic Resources and Archives
- Center for Northeast Asian Studies Tohoku University
- Research and Analytical Center for Giant Molecules
- Research Center for Marine Biology, Graduate School of Life Sciences
- Tohoku University Museum (Museum of Natural History)

Outside Tohoku University

- National Institute of Advanced Industrial Science and Technology (AIST)
- NTT Basic Research Laboratories (BRL)
- Institute for Molecular Science (IMS)
- Japan Atomic Energy Agency (JAEA)
- Japan Agency for Marine-Earth Science and Technology (JAMSTEC)
- High Energy Accelerator Research Organization (KEK)
- National Institute of Information and Communications Technology (NICT)
- National Research Institute for Earth Science and Disaster Prevention(NIED)
- National Institute for Environmental Studies (NIES)
- National Institute for Materials Science (NIMS)
- Institute of Physical and Chemical Research (RIKEN)

Number of Students

(as of May 1, 2017)

	Undergraduate	Graduate	
		Master’s Program/ Profession Degree Program	Doctoral Program
Science	1,397 [41]	581 [55]	278 [78]
Total	11,012 [212]	4,318 [750]	2,652 [621]

[] indicates the number of international students included in counts.



Academic Exchange Agreements

Department Level^{*1}
Partner Institutions

(As of Oct. 1, 2017)

Area	Country/Region	Institution	Year
Africa	Nigeria	The University of Nigeria, Nsukka, Faculty of Physical Sciences	Feb. 26, 2016
	South Africa	Rhodes University, Faculty of Science	Sep. 9, 2013
	South Africa	University of the Witwatersrand, Johannesburg	Apr. 19, 2017
Asia	China	Nanjing University, School of Chemistry and Chemical Engineering	May 28, 2014
	Indonesia	University of Brawijaya, Faculty of Mathematics and Natural Sciences	Nov. 17, 2013
	Taiwan	Academia Sinica, Institute of Earth Science	Dec. 4, 2008
	Taiwan	National Taipei University of Technology, College of Engineering	May 2, 2015
Europe	Belgium	Université Catholique de Louvain, Faculty of Sciences	Aug. 29, 2007
	Denmark	University of Copenhagen	Sep. 20, 1999
	England	King's College London, University of London, School of Natural and Mathematical Sciences	Dec. 1, 2012
	France	Ecole Nationale Supérieure de Chimie de Rennes ENSCR	Jan. 4, 2016
	France	Université Claude Bernard Lyon, Faculté des Sciences et Technologies	Sep. 9, 2011
	France	Pierre and Marie Curie University ^{*2}	Jan. 17, 2017
	Germany	Mainz University, Faculty of Physics, Mathematics and Computer Science	May 3, 2012
	Germany	University of Bayreuth ^{*3}	Feb. 5, 2016
	Germany	Wuppertal University, Faculty of Mathematics and Natural Sciences	Jan. 23, 2012
	Italy	Centro di Ricerca Matematica Ennio De Giorgi, Scuola Normale Superiore	Jun. 25, 2013
	Italy	University of Ferrara	Jun. 27, 2012
	Italy	Sapienza University of Roma	Mar. 24, 2017
	Italy	University of Siena, Faculty of Mathematical, Physical and Natural Sciences	Aug. 1, 2013
	Netherlands	University of Amsterdam, Faculty of Science	Jul. 11, 2013
	Russia	V.S. Sobolev Institute of Geology and Mineralogy, Siberian Branch of the Russian Academy of Sciences	Nov. 7, 2008
North America	United States	Carnegie Institution of Washington, Geophysical Laboratory	Dec. 1, 2008
	United States	University of Hawaii at Manoa ^{*3}	Mar. 28, 2017
	United States	University of Illinois at Chicago	May 1, 2000
Oceania	New Zealand	Institute of Geological and Nuclear Sciences Limited (GNS Science)	Mar. 19, 2008

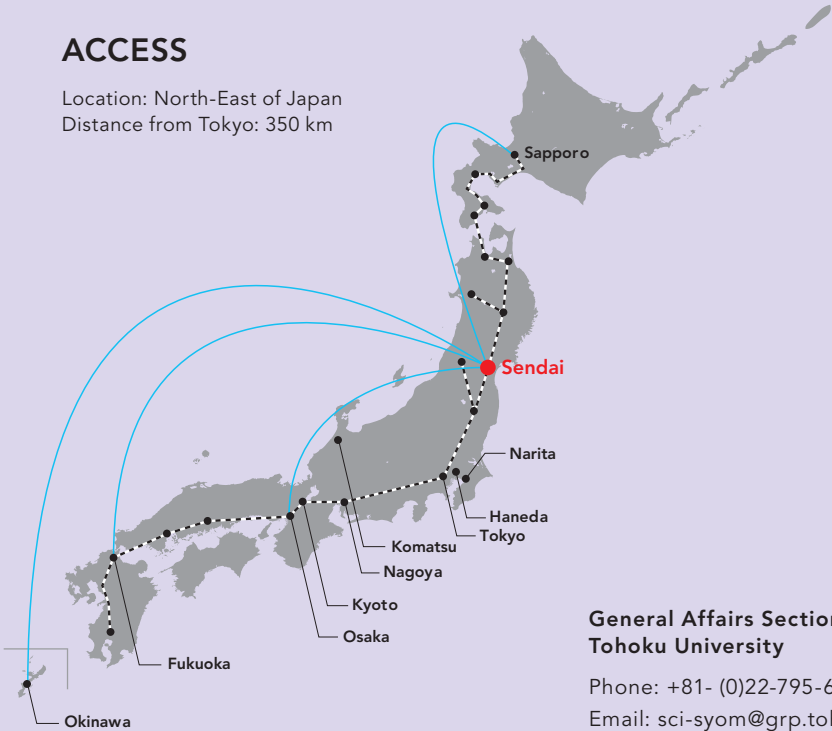
^{*1}: University Level & other faculties' partner institutions >>> Ref: <http://ie.bureau.tohoku.ac.jp/partners?lang=en>
^{*2}: Institution with Double Degree Agreement ^{*3}: Institutions with Jointly Supervised Degree Agreement

Sendai City

Sendai with a population of more than one million is a political and economic center of the Tohoku (northeast) Region in Japan. It is a large city, and it is known throughout Japan as a modern city in harmony with nature. The city possesses beautiful scenery, such as the Hirose River, which runs the center of the city, and lush Zelkova trees throughout the city. Greenery is especially abundant in the center of the city, which has tree-lined streets and parks. As a result, Sendai is called the “City of Trees.” In summer, Sendai’s Tanabata Festival, in which decorations are displayed on long upright bamboo poles throughout the downtown and surrounding areas. In December, the trees are decorated with thousands of lights for the Pageant of Starlight.

ACCESS

Location: North-East of Japan
Distance from Tokyo: 350 km



By Air	(duration)
Beijing	5 hr 50 min
Shanghai	2 hr 50 min
Taipei	3 hr 10 min
Seoul	2 hr 10 min
Guam	4 hr 15 min

Sapporo	1 hr 10 min
Narita	1 hr
Komatsu	1 hr
Osaka	1 hr 15 min
Nagoya	1 hr 10 min
Fukuoka	1 hr 45 min
Okinawa	2 hr 35 min

By Shinkansen	
Tokyo	1 hr 40 min

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