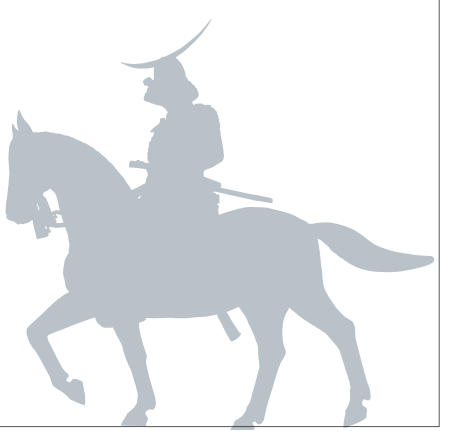
IRIDeS

International Research Institute
of Disaster Science

Enhancing disaster resiliency.
Preparing for mega-disasters.



IRIDeS background

Establishment of a new research institute prepared for disasters of low frequency and high consequences based on experiences of the 2011 Japan disaster.

In 2007, in order to promote the interdisciplinary research on disaster prevention and disaster mitigation in the society, Tohoku University gathered a team of experts from 19 faculties and established "The Research Group on Disaster Prevention and Management". In Tohoku region, the earthquake known as the Miyagi offshore earthquake had been predicted as high as 99% probability of occurrence in 30 years, the highest in the world. In order to be prepared for this earthquake, Tohoku University integrated the ongoing efforts related to disaster prevention and mitigation from its social, science and engineering departments. Researchers from various specializations, engineering, earth science, psychology, information science, economics, medicine, and history were enrolled. However, the Great East Japan Earthquake Disaster occurred in the middle of this activity. Function of municipalities were affected by the great tsunami and the nuclear power plant accident which also polluted the environment and damaged the national reputation causing disruptions of the lifestyle in the community. It was clear that against such low frequency great disaster, the traditional disaster prevention and disaster mitigation measures were not enough. After the earthquake, with the participation of many more scholars, the actual members of over 50 experts, not only deployed a multidisciplinary survey and research on field, but also assisted on the reconstruction of the disaster affected areas.
Tohoku University established the "International Research Institute of Disaster Science" as a new integrated interdisciplinary research team to overcome the low frequency great disaster and to use the lessons learned and experiences from the historical global great disasters. The research institute will be a leader in the disaster science related interdisciplinary research of the world, also supported by a national and international network with other research institutions. Using an interdisciplinary approach, we are focusing on the examination and understanding of the mechanism of the Great East Japan Earthquake, the research on countermeasures for the low frequency great disasters and the Tokai, Tonankai and Nankai Earthquakes. In addition, with an emphasis on the historical perspective to strengthen cooperation in all aspects and with affected local governments, a plan for recovery and reconstruction for future disaster prevention and disaster mitigation will be proposed based on the lessons learned.

Tohoku University Efforts before 2011

Development of disaster prevention technologies

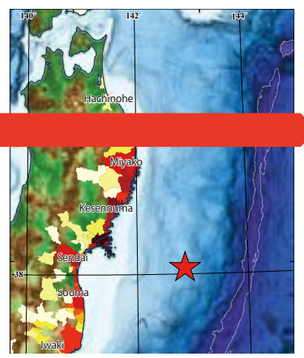
- Earthquake and Tsunami prediction and modeling technologies ▶ Tsunami modeling technology transferred to over 30 countries
- Developing early warning technologies
- Enhancing seismic performance of structures

Interdisciplinary Disaster Prevention Research (countermeasures against the off-Miyagi earthquake)

- Disaster Control Research Center, Graduate School of Engineering : Research collaborations with Ministry of Land, Infrastructure and Transport, Tohoku Regional Development Bureau / Miyagi Prefecture / Sendai City
- Graduate School of Science and Graduate School of Engineering : Comprehensive Agreements with Sendai city and the Headquarters for Disaster mitigation research[in 2006]
- Establishment of the research group on disaster prevention and management in Tohoku University (19 faculty members related to humanities and science fi elds)[in 2007]

The 2011 Great East Japan Earthquake Disaster

- Complex mega disaster involving the megathrust earthquake, great tsunami and the nuclear power plant accident
- Revealed the limits and weaknesses of the state of the art of Science and Technology systems



2012 ～

Establishment of the International Research Institute of Disaster Science IRIDeS

- Rebuilding the disaster mitigation technologies based on the experiences and the lessons from the Great East Japan Earthquake and Tsunami Disaster
- Promotion of Science to support the affected areas
- Enhancing disaster-resiliency and performance of multiple-fail-safe systems in regional and urban areas
- Comprehensive study on the 2011 Tohoku earthquake and tsunami disaster
- Development of next-generation tsunami warning system for mega-earthquakes
- Establishing disaster medicine and medical health care system towards catastrophic natural disasters
- Developing the digital archive to share the lessons and the post-disaster reconstruction activities in regional and urban areas

The second stage of the International Research Institute of Disaster Science (IRIDeS), Tohoku University

Fumihiko Imamura,
Prof. and Director of IRIDeS
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The Off the Pacific Coast of Tohoku Earthquake, occurred at 14:46 JST on March 11th, 2011, and following gigantic tsunami devastated the eastern part of Japan. Nearly twenty thousand people lost their lives. Hundreds of thousands of houses, buildings and infrastructures were heavily damaged, and coastal environments, ecosystems and landscapes suffered extensive disturbance. Furthermore, due to the severest accident of the Fukushima Dai'ichi nuclear power plant, tens of thousands of people from surrounding areas have been forced to evacuate from their homes. The disaster, so-called the Great East Japan Earthquake, is the first multi-phase disaster that humankind had ever been experienced. Our mission is to prevent recurrence of such catastrophic disasters.

Immediately after the 2011 disaster, Tohoku University established the institute for disaster reconstruction and re-generation research in April 2011, with the aim to lead the revitalization of Japan. One of the major projects is to initiate and promote international, multi-disciplinary research of disaster science. As a result, on April 1st, 2012 a new research institute, named the International Research Institute of Disaster Science (IRIDeS), was founded. We are studying the 2011 Tohoku Earthquake and Tsunami from all aspects, including causes and consequences, for improved assessment of hazards and damages from future disasters. Researchers from 38 fields from both social and natural sciences, who have distinguished aspire for contributing disaster prevention and mitigation, are integrated into 7 divisions to participate to multi-disciplinary and multi-layered approaches to lead the studies of disaster science.

Our efforts are also dedicated to the affected areas, to provide relief aid and to collect and distribute information about the circumstances of the devastated areas. We initiated a digital archive project in collaboration with several partners in order to compile data, information, and records related to the 2011 Great East Japan Earthquake.

As for international and global activities, we have cooperated with research institutions not only within Japan but also in countries overseas, including such as United States, United Kingdom, Germany, Philippines, Indonesia and Taiwan. The international program hub, APRU-IRIDeS multi-hazard program, was also initiated to harness the collective capabilities of APRU (The Association of Pacific Rim Universities). The 3rd UN World Conference on Disaster Risk Reduction, held in Sendai City in March 2015, was an extraordinary opportunity for IRIDeS to bridge the devastated area in Tohoku and the world. In public forms of the conference, IRIDeS presented numerous cutting-edge studies and also declared enhancement of community resilience through education. Furthermore, United Nations Development Programme (UNDP) and IRIDeS launched the Global Centre for Disaster Statistics, for world-wide initiative to mitigate disaster risks.

We continue to share what we have learned with the world. We work to build a resilient world to disasters. However, we cannot achieve this alone. I would like to ask you for your support and cooperation in this endeavor.

Fumihiko Imamura, Prof. and Director of IRIDeS . April 1st, 2015

Development

2006 Conclusion of the agreement with Sendai City regarding disasters
2007 Organization of Tohoku University Research Group on Disaster Prevention and Management, which consists of 19 research fields from humanities and sciences
2012 Foundation of IRIDeS, which consists of 7 research divisions and 38 research fields from social and engineering sciences
2013 Initiation of the conclusions of the agreement with damaged municipalities / Set up of IRIDeS Kesennuma City Satellite Office

Agreements

8th February 2013	Tagajo City
25th June 2013	Watari Town
12th July 2013	Iwanuma City
13th July 2013	Kesennuma City (Branch opened on 1st October 2013)
21st August 2013	Higashi-Matsushima City
24th December 2013	Yamamoto Town
9th January 2014	Sendai City
7th February 2014	Rikuzen-Takata City

Preamble

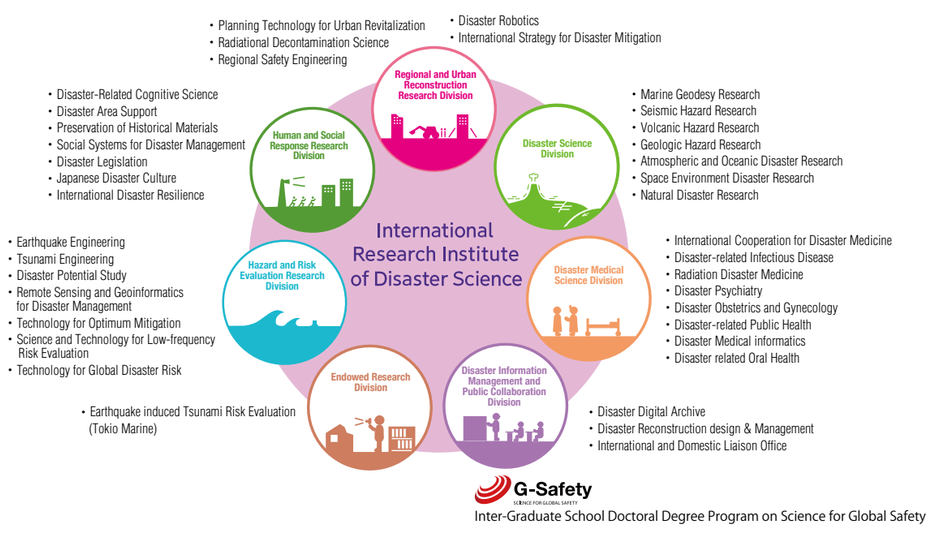
Having experienced the catastrophic disaster in 2011, Tohoku University has founded the International Research Institute of Disaster Science (IRIDeS). Together with collaborating organizations from many countries and with broad areas of specializations, the IRIDeS conducts world leading research on natural disaster science and disaster mitigation. Based on the lessons from the 2011 Great East Japan (Tohoku) earthquake and tsunami disaster, IRIDeS aims to become a world center for the study of disasters and disaster mitigation, learning from and building upon past lessons in disaster management from Japan and around the world. Throughout, the IRIDeS will contribute to on-going recovery/reconstruction efforts in the affected areas, conducting action oriented research, and pursuing effective disaster management to build sustainable and resilient societies. IRIDeS innovate the past paradigm of Japan's and world's disaster management to catastrophic natural disasters, hence to become a foundation stone of disaster mitigation management and sciences.

Mission of IRIDeS

Disaster mitigation management aims to reduce or avoid the potential losses from natural hazards, to assure prompt assistance to victims, to achieve rapid and effective recovery, and to build disaster-resilient and sustainable societies, by five stages of the disaster management cycle; Mitigation, Preparedness, Response, Recovery and Reconstruction. The action-oriented research of the IRIDeS pursues each point in the cycle, integrating and universalizing scientific discoveries to be dedicated to the world.

IRIDeS creates a new academia of disaster mitigation that subsumes the lessons from the 2011 Tohoku earthquake and tsunami disaster and the findings of the world-leading research into our societies with the aim of establishing social systems capable to respond promptly, sensibly and effectively to natural disasters, withstanding the adversities with resiliency, passing and exploiting the lessons to the forthcoming disaster management cycles.

Organization of IRIDeS



G-Safety
Inter-Graduate School Doctoral Degree Program on Science for Global Safety

Logo mark

災害科学国際研究所
IRIDeS
International Research Institute of Disaster Science

English name

IRIDeS
Iris, Iris laevigata or Japanese Iris
Symbol of hope and nobility

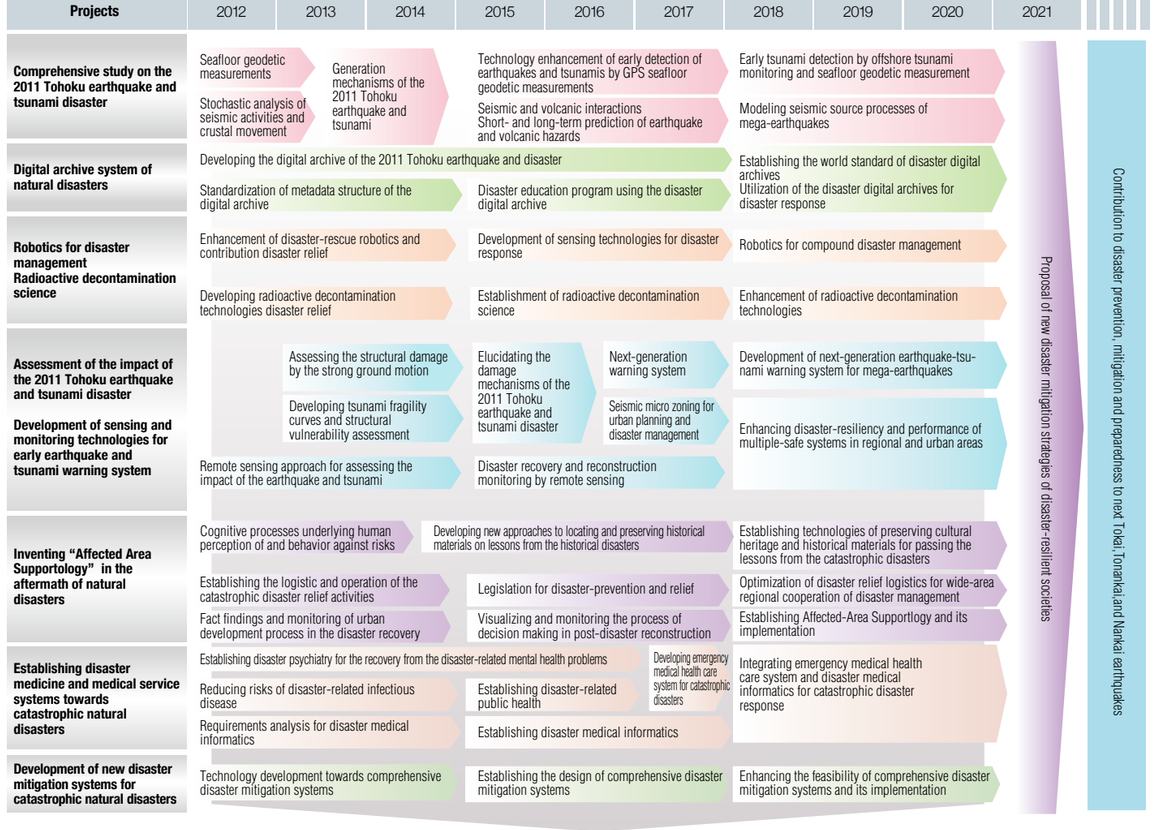
Logo meaning

It is the deformalized image of the Japanese character of disaster (災, wazawai) turned upside down, based on the idea of Japanese saying "Turn your misfortune to good account". It represents our mission of learning the lessons from the 2011 Tohoku earthquake and tsunami disaster and pursuing effective disaster management to build sustainable and resilient societies. Iris is the symbol of "hope" and "dignity".

Visions of IRIDeS

Enhancing the cooperation with the local municipalities and governments in the affected areas, and contributing to their recovery and reconstruction efforts, the IRIDeS conducts the action-oriented research. We aim to create disaster-resilient societies to overcome the complex and diverse processes of forthcoming natural disasters, not only by preventing but also preparing and responding to them, and achieving recovery and renovation, hence to engender the culture of disaster-resiliency incorporating into our social systems. The action-oriented research of the IRIDeS focuses on;

1. **Investigating the physics of global scale natural disasters such as mega-earthquakes, tsunamis and extreme weather**
2. **Reconstructing disaster response and mitigation technologies based on the lessons of the 2011 Tohoku earthquake and tsunami disaster**
3. **Inventing "Disaster Area Support" in the aftermath of natural disasters**
4. **Enhancing disaster-resiliency and performance of multiple-fail-safe systems in regional and urban areas**
5. **Establishing disaster medicine and medical service systems towards catastrophic natural disasters**
6. **Designing disaster-resilient societies and developing the digital archive system to pass the lessons from the disasters**



Hazard and Risk Evaluation Research Division

This division reconstructs disaster prevention/mitigation technologies on the basis of synthesis of lessons obtained from the 2011 Great East Japan (Tohoku) Disaster and analysis of the disaster generation mechanisms. The deformation and regional destruction processes of the earthquake and tsunami are investigated by the integration of the observed data, frontal development of remote sensing technologies, and advancement of numerical simulations. The existing prevention/mitigation systems are examined on the effectiveness for the mega hazards and innovated. Through the application of our findings to the area of high possibility in mega disaster occurrence, this division aims for the contribution to enhance the preparedness for the risk reduction and early recovery.

Earthquake Engineering

We aim to reduce the disaster resulting from an earthquake in regions. The activities at the Earthquake Engineering Research Field are oriented to earthquake disaster mitigation measures from the points of view of "Incentive" and "Real-time" Disaster Prevention Engineering (IDPE and RDPE). IDPE is based on the optimization theory, and RDPE use real-time hazard information.

Tsunami Engineering

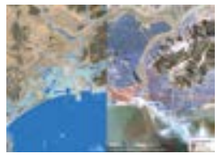
The Tsunami Engineering Laboratory aims to clarify huge tsunamis and damage process in Tohoku coast area, and to develop integrated technologies for reducing tsunami disaster by structure and non-structure measures.

Disaster Potential Study

Disaster Potential Study Laboratory aims to develop efficient measures against tsunamis, high waves, storm surges, and floods for disaster risk reduction and climate change adaptation in coasts and rivers.

Remote Sensing and Geoinformatics for Disaster Management

With use of modem computing power, we develop a new framework to search and detect the impact of natural disaster by integrating real-time computing, damage/loss estimation models, remote sensing and geoinformation techniques.

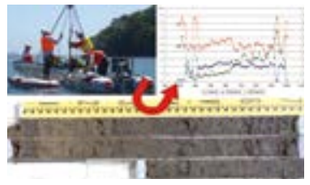


Technology for Optimum Mitigation

To address the issues regarding large displacements in long-period structures subjected to long-period/long-duration ground motions, we are developing new promising energy dissipation devices that effectively reduce response displacements without deterioration of floor response accelerations by utilizing an effective mass device capable of generating large apparent mass with small physical mass, or a magneto-rheological fluid damper controlled by rate-independent damping algorithm.

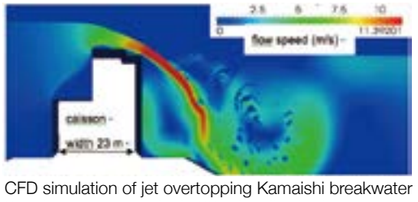
Science and Technology for Low-frequency Risk Evaluation

The LFRE dedicates the interpretation and evaluation of the geologic records of low-frequency risks such as large-scale earthquakes, tsunamis and volcanic eruptions, to contribute for the mitigation and prevention of the enormous disasters in collaboration with earth sciences, coastal engineering and historical science.



Technology for Global Disaster Risk

The Technology for Global Disaster Risk Laboratory utilizes field measurements, numerical simulations, and laboratory experiments to determine the causes of failure of hydraulic and coastal structures during disasters such as tsunamis, typhoons, hurricanes, and river floods, so that these structures can be designed more robust in the future. To further the goal of developing resilient infrastructure, we seek to foster cooperation among hydraulic, coastal, geotechnical, and structural engineers, as well as urban planners.



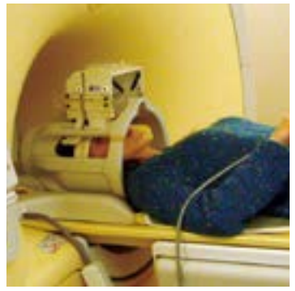
CFD simulation of jet overtopping Kamaishi breakwater 31 minutes after quake in 2011(profile view)

Human and Social Response Research Division

The disaster cycle and revival is reevaluated from a historical point of view, and it is proposed the construction of a society aware beforehand of the disaster. The needs of the affected area are presumed accurately, and the planning technology for swift and effective supports from external area is offered utilizing the existing resources and knowledge to the utmost. Considering the difference in culture and history in the regions and countries, the construction method of the social system having disaster response skills is proposed, based on human's disaster cognition and action mechanism as well as disaster response power of industry, government, academia and nonprofit sectors. Furthermore, we investigate the methodology to protect the regional history and culture from a disaster and to deliver them to the next generation.

Disaster-Related Cognitive Science

In this research field, we conduct basic research on the cognitive processes underlying human perception of and behavior in complex physical and social environments. We apply the outcome of such research to develop systems for disaster prevention, mitigation, and restoration that are friendlier to human's cognitive mechanisms.



Disaster Area Support

It is important to provide swift and effective support for survival, recovery and reconstruction, from outside the affected area. We are conducting the following studies: 1) Facts and lessons in the relief for good logistics in large disaster, 2) Emergent medical support and transportation of affected people, and 3) Development of utilization methodology of people's location data.

Preservation of Historical Materials Research

There is a wealth of historical materials, documents, art objects, implements and other objects, held privately throughout Japan. Each of these objects is a unique record of people's lives within that region. We will conduct research based on our ongoing experience in actual practice to protect these materials from disasters and pass these cultural resources on to future generations.

Social Systems for Disaster Management

This research field will propose policies and disseminate information from the disaster-affected area, aiming to revival of industry and increase the regional resilience, by studying the vision of local industry and economy such as industrial location of all Tohoku and new ideas in fields like agriculture, fisheries, manufacturing, as well as by researching how to improve disaster response power in view of business continuity and the method of wide-area disaster support.

Panel discussion "The disaster prevention efforts by industry, academic, government and local residents in northeastern Japan" (December 2013)

Disaster Legislation

We must research the problems of present disaster-prevention laws that should be revised compared with the realities of the East Japan great earthquake according to investigation of its actual conditions.

Japanese Disaster Culture

Through fieldwork in each place, I collect natural disaster folklore from people who work with nature, and through reflection, hope they can be useful to reduce future disaster damage. I also study how these traditions have been transmitted, and suggest how to mitigate disasters in daily life.

International Disaster Resilience

In disaster-affected places, policies and planning are aiming to guide rebuilding more resilient and robust. To better achieve this goal, we internationally research policies and plans developed and implemented during recovery phase in different social, cultural and economic settings. Through identifying issues and gaps between goals and realities, we aim to come up with key planning/policy features and systems that support recovery with more resilience against future disasters.

Regional and Urban Reconstruction Research Division

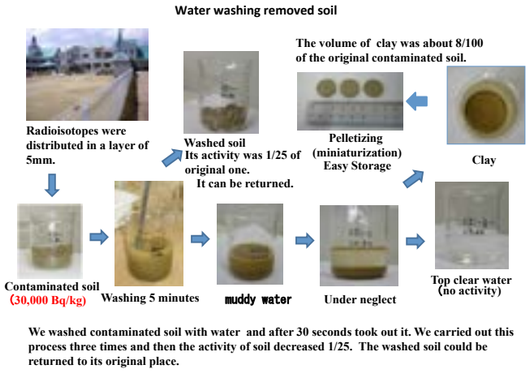
The affected area is making a recovery from the disaster. To achieve this goal, we need the following 4 things;
1.Research studies and measuring methods to grasp the situation of affected areas appropriately
2.Methods of decontamination and reconstruction to change affected areas into the spaces where people can live comfortably
3.Technologies for planning the reconstruction of the affected area as a sustainable place
4.Developing technologies of disaster prevention and mitigation to ensure the safety of the rebuilt area
It is necessary for us to carry out these plans with active promotion of international cooperation and medium or long term strategies. This division has 5 sections to study and develop them. We study especially focusing on “reconstruction” of affected area.

Planning Technology for Urban Revitalization

This division focuses on planning theory and the development of planning formatting technologies to rebuild the affected areas especially in urban spaces. In addition, to achieve these goals, we study the development of social systems and management methods.

Radiational Decontamination Science

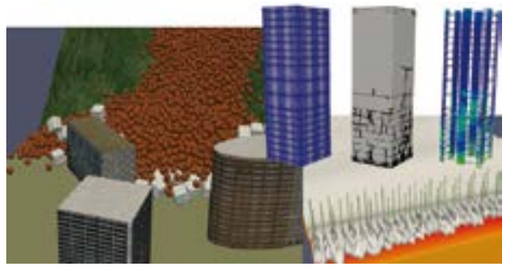
In addition to radioactive material contamination monitoring, we work on the elucidation and solution of the problem of contamination by a radioactive material. We promote the following research;
1) Why is radioactive cesium not in tap water?
2) How can be decontamination of the contaminated soil carried out?



We washed contaminated soil with water and after 30 seconds took out it. We carried out this process three times and then the activity of soil decreased 1/25. The washed soil could be returned to its original place.

Regional Safety Engineering

This division is devoted to provide innovative ideas and technologies for improving the safety and durability of regional and urban areas, and the resilience against various kinds of disasters and hazards. For that purpose, we are establishing multi-layered-coupled numerical simulation methods for multi-physics phenomena of structures, grounds and fluids, clarifying the mechanism of the degradation processes and strength responses, and developing optimal design techniques for practical disaster-prevention.



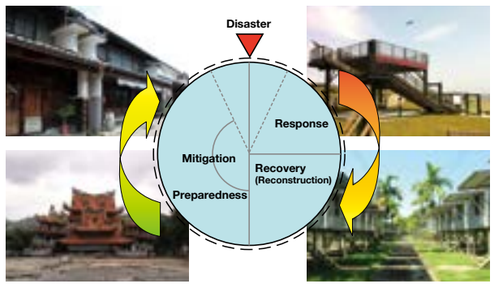
Disaster Robotics

This laboratory promotes research and development of robotics and related technologies that contributes wide range of disaster management including search & rescue and disaster response.

International Strategy for Disaster Mitigation

Our goal is to plan more practical international strategies for disaster mitigation/post-disaster recovery and to develop international frameworks that enable the strategies. In order to clarify existing problems and make recommendations to the world for future disaster reduction, International Strategy for Disaster Mitigation Research Laboratory is researching on the relationship between disaster management and urban/regional space inside and outside of the country, through case studies of vulnerable areas including disaster-experienced cities.

Spatial Design Elements on Disaster Life Cycle



Disaster Science Division

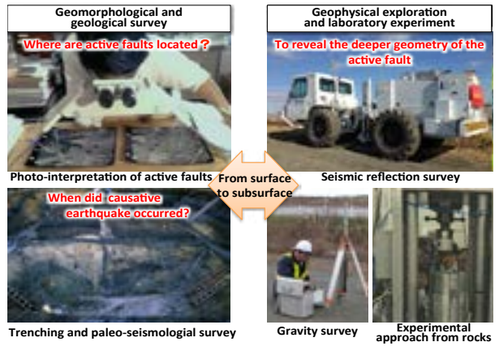
Natural disaster is a consequence of the dynamic activity of the planetary earth, which is driven by energies from the sun and the Earth's interior. Therefore understanding the generation mechanism of itself is important to estimate short and middle-to-long term risks and hence to mitigate damages. We deal with wide-range of global natural hazard, such as great earthquake and resulting tsunami, volcanic eruption, climate change, space hazard, and so on.

Marine Geodesy Research

Promote following research to elucidate stress distribution around the plate boundaries where large earthquakes and tsunamis occur:
1) Seafloor geodetic surveys along subduction zones
2) Development of advanced technology for seafloor geodetic measurements
3) Evaluation of spatio-temporal variation of the stress distribution around plate boundaries based on land and sea geodetic data

Geologic Hazard Research

To reveal surface geometry, morphological characteristics and mode, evolution of active fault, and earthquake source process. We promote scientific research of active fault from surface to deep subsurface in cooperation with Dept. Earth Sci., Tohoku Univ. Outcomes of our study contribute to risk assessment of onshore active fault as basic data, and also have important role in a local plan for disaster prevention and disaster mitigation.



Seismic Hazard Research

Promote not only the study on generation mechanism of interplate earthquakes but also the improvement of prevention method against infrequent great disasters such as forthcoming Tonankai-Nankai earthquakes in cooperation with the Research Center for Prediction of Earthquakes and Volcanic Eruptions, Graduate School of Science.

Volcanic Hazard Research

We are making the following studies for clarifying the fundamental processes of volcanism and for forecasting volcanic hazards.
1) Deep structure and origin of active volcanoes on the Japan Islands and the whole Earth;
2) Relationship between volcanism and dynamics of the Earth's interior;
3) Earthquake and volcano interactions and short-term and long-term predictions of volcanic hazards.

Atmospheric and Oceanic Disaster Research

Promote the following researches to clarify phenomena in the atmosphere-ocean-land system and evaluate hazards:
1) Global climate change and extreme weather events
2) Mechanism of occurrence of severe atmospheric phenomena
3) Global warming effects on regional climate

Space Environment Disaster Research

In order to make a bridge between research and operation, we promote scientific and engineering studies to reduce space environment risks on the activities in space. Main research items are following:: 1)studies on measures to ensure the safe and sustainable use of space and 2) space hazard prediction with assessment of forecast tools.

Natural Disaster Research

We promote researches with global perspective to understand the generation mechanism and its repeatability of mega-quakes by a combination of long-term crustal deformation and the forefront seismological knowledge with the other IRIDeS seismologists and international collaborations. We also develop the method of the time-dependent seismic hazard assessment incorporating active faults nearby and short-to-mid-term crustal deformation associated with the gigantic earthquakes.

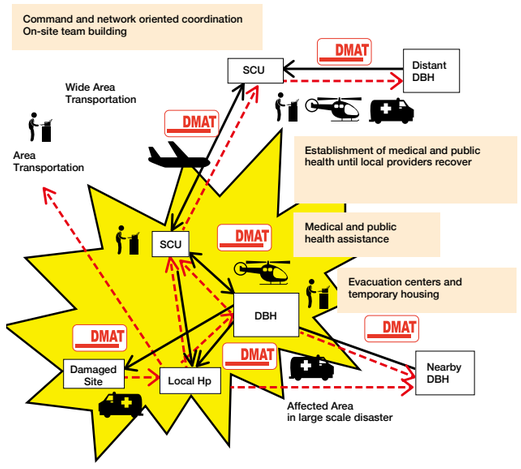
Disaster Medical Science Division

In this division, countermeasures and disaster prevention schemes are studied to establish international standards for application in the acute and chronic phases of a widespread major disaster. In cooperation with the risk research and human/social support research divisions, the division is involved in construction of infrastructure for emergency medicine in a major disaster, medical research for infections in disaster areas, establishment of radioprotection standards for nuclear hazards, research on remission or decrease of disaster stress, establishment of international standards for countermeasures against the impact of disasters on mothers and children, proposals for maintenance of the healthcare system after a major disaster, and establishment and international standardization of a disaster medical information system.

International Cooperation for Disaster Medicine

This research field collects and analyzes the medical and public health needs and actual support in Great East Japan Earthquake to establish the efficient cooperation system of domestic and international medical management. Establishment, education and spread of disaster medical and public health care is another mission. Reorganization and revitalization of devastated broad area will be a model of recovery from large scale disasters.

Medical management in large scale disaster



Disaster-related Infectious Disease

We focus on infectious diseases which we have to prepare for outbreak in post disaster period. Through our research we will investigate natural history of infectious disease outbreak from both cell level and behavioral level.

Radiation Disaster Medicine

Our laboratory evaluates radiation doses and radiation effects in humans, analyzes the management of radiation exposure from nuclear hazards and medical procedures, and develops diagnostic imaging systems for use in disasters.

Disaster Psychiatry

The major aims of our department are: 1) to integrate multi-faceted basic and clinical research approaches to identify social, psychological, and biological factors involved in the pathophysiology of and recovery from disaster-related mental health problems; 2) to develop useful tools for the prevention, screening, diagnosis, and treatment of disaster-related disorders; and 3) to provide useful information for improving mental health in communities affected by disasters.

Disaster Obstetrics and Gynecology

The objectives of this field are to establish international standards for disaster countermeasures by analyzing the impacts of a disaster on mothers and children, and to perform a long-term study of the effects of disasters on obstetrics and gynecology-specific diseases.

Disaster-related Public Health

To propose the emergency medical health care system for great disasters in large areas. This research field is currently in preparation.

Disaster Medical informatics

Our aim is to develop useful medical information system in disaster cycle with the integration of disaster medical science and information technologies.

Disaster related Oral Health

We have developed the computerized matching system for identification of victims during large scale disasters. Our current activity is mainly collecting the baby tooth in Fukushima and detecting radioactive agents, 90Sr and 137Cs, in collaboration with the School of dentistry.

Disaster Information Management and Public Collaboration Division

The division aims to support for reconstruction/revival and the cooperation to prevention and reduce disaster in Japan and overseas and to collect all available data for situation and restoration /revival information focusing on the 2011 Tohoku great earthquake and tsunami. One of typical topics at the division is the design of new disaster resilience society and collecting lessons learned. First, digital archive of Michinoku Shinrokuden which fills and goes away is started to record data for the 2011 great Tohoku earthquake and tsunami. Based on these, the support for planning of the reconstruction and the recovery program in a damaged area is developed, and the contents considering history and culture, environment, and industry especially are practiced, supporting agreement formation with citizens. Moreover, since it contributes to enforcement of future disaster prevention and disaster reduction strategy, a related meeting for coordination is planned and it becomes the international organization as a core of cooperation.

Disaster Digital Archive

We are 1) collecting and archiving the disaster related information and data (digital and non-digital), 2) developing and establishing the digital archive system, and 3) promoting utilization of the system and archiving data in collaboration with industry-academia-government-citizen.

Disaster Reconstruction design & Management

We research and practice disaster mitigation and prevention to build up community which is integral to the society, aiming at making the community sustainably resistant to disasters, beautiful and comfortable.

International and Domestic Liaison Office

The goal of this office is to strategically introduce cutting-edge IRIDeS research findings to society, including government, disaster-affected municipalities, research institutes, private sector, international organizations such as the United Nations and Non-Governmental Organizations. The Office aims at Tohoku recovery enthusiastically through planning domestic and international events and conferences.

Endowed Research Division

The endowed Research Division is initiated and managed by the donation from a company etc. for the purpose to strengthen the education and research in the university. Now, tsunami risk evaluation and assessment proposed by Tokio Marine Co.ltd is started for three years.

Earthquake induced Tsunami Risk Evaluation (Tokio Marine)

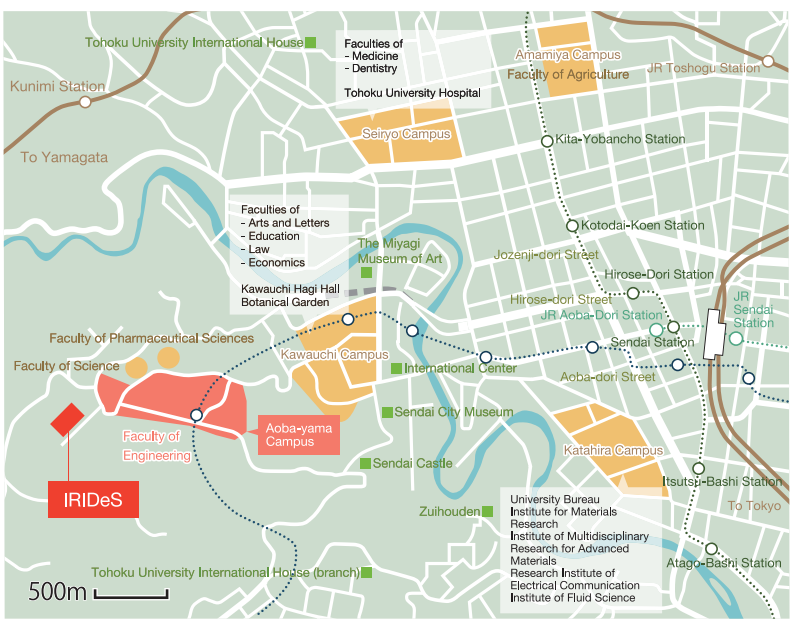
The methodology evaluating earthquake induced tsunami risk is developed with tsunami hazard such as wave heights and arrival time, in consideration of the vulnerability in society or disaster prevention ability. And synthetic risks of having added occurrence probability further are examined as well.

Inter-Graduate School Doctoral Degree Program on Science for Global Safety

G-Safety
SCIENCE FOR GLOBAL SAFETY

We educate talents for the “science for global safety”, an academic attempt to systematically organize various studies regarding safety, which have been developed within different specialized domains, according to their space, time and social aspects from a global perspective, placing disaster prevention/mitigation for natural disasters and other risks as the central pillars.
This program is constructed based on the three viewpoints of “Understanding” “Creating” and “Living” supported by collaborations among researchers in science, engineering and humanities and social sciences.

IRIDeS



IRIDeS Kesennuma Branch

Access

On foot

More than 1 hour from JR Sendai Station

City Bus (http://www.kotsu.city.sendai.jp/english/bus/)

About 20 minutes from JR Sendai Station Get on bus for “Miyakyodai Mae“ (Line 715) at 9th stop of JR Sendai Station west bus terminal Get off at “Johokagaku Kenkyuka Nishi“ bus stop

Subway Tozai Line (will be available from 6th December 2015)

Get on train for “Yagiyama Dobutsu Koen” Get off at “Aobayama Station”

Taxi

About 15 minutes from Sendai Station

Taxi stand is located on the ground floor of JR Sendai Station

Give instruction "Tohoku University Aobayama Campus"

IRIDeS, Tohoku University

6-6-4, Aza-Aoba, Aramaki, Aoba-ku, Sendai, 980-8579, Japan

Tel. +81-22-752-2049 (10:00~17:00)

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Latest information is posted on our website

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