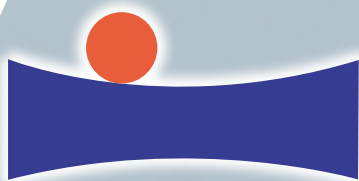


Research Institute for Natural Hazards and Disaster Recovery

NIIGATA UNIVERSITY



災害・復興科学研究所



新潟大学

沿革 History

1969 理学部付属地盤災害研究施設設置

1969
Research Laboratory of Ground Failure was established.

1972 工学部附属雪氷工学研究施設設置

1972
Research Laboratory of Snow and Ice Engineering was established.

1978 積雪地域災害研究センター設置

1978
Research Institute for Hazards in Snowy Areas was established.

2006 災害復興科学センター設置

2006
Research Center for Natural Hazards and Disaster Recovery was established.

2011 災害・復興科学研究所設置

2011
Research Institute for Natural Hazards and Disaster Recovery was established.

近年の主な自然災害

Major natural disasters in the last 60 years

1964 新潟地震



中村勝典氏撮影

広範囲にわたる地盤の液状化に伴う建物の倒壊、製油所の火災、河川への津波の侵入などにより複合的な被害が発生した。

The 1964 Niigata Earthquake

The Niigata Earthquake caused various kinds of damage, such as the collapse of buildings due to ground liquefaction, fires at refineries, and tsunamis run-up into rivers.

2004 中越地震



最大震度は7に達し、死者数は70名近くのもの、中山間地域が地震災害に脆弱であることが露呈した。

The 2004 Mid-Niigata Prefecture Earthquake

The earthquake in the Mid-Niigata Prefecture had a maximum seismic intensity of 7 causing approximately 70 fatalities. The vulnerability of mountainous areas to earthquake damage was clearly revealed.

2006 平成18年 豪雪

The 2006 heavy snowfall

2007 中越沖地震



最大震度は6強であり、市街地を中心に建物被害や液状化が発生した。

The 2007 Niigataken Chuetsu-oki Earthquake

The Niigataken Chuetsu-oki Earthquake was triggered by an offshore fault causing severe damages in Niigata Prefecture. In Kashiwazaki City and surrounding areas, the maximum seismic intensity of 6 was recorded.

2011 東北地方太平洋沖地震

The Great East Japan Earthquake

2011 長野県北部地震

The Northern Nagano Earthquake

2011 新潟・福島豪雨

時間雨量100mmを越える猛烈な降雨のため、特に信濃川下流域は史上最大規模の洪水となり、低平地に特有の脆弱性が浮き彫りとなった。

The 2011 Niigata-Fukushima heavy rainfall

In Niigata-Fukushima, the lower catchment of the Shinano River was largely flood after a torrential rainfall (>100mm/h). The vulnerability to lowland areas was clearly recognized.

2019 東日本台風



台風による千曲川流域での記録的大雨により、津南町、小千谷市、長岡市、小千谷市で信濃川が氾濫した。

The Typhoon No.19 in 2019

The record heavy rainfall in the Chikuma River basin brought by Typhoon No.19 caused flood damages in Tsunan, Ojiya, and Nagaoka.

災害・復興科学研究所は、理学部附属地盤災害研究施設（1969年設立）や工学部附属雪氷工学研究施設（1972年設立）における研究を基盤として1978年に「積雪地域災害研究センター」が設立されたことから始まります。当時は地盤災害研究部門、雪氷技術研究部門、地水系保全研究部門の3部門から構成され、日本海側地域に特有な雪氷災害や融雪期の地すべり災害等の研究を推進してきました。

2004年の新潟・福島豪雨や新潟県中越地震に際しては、積雪地域災害研究センターを中核とする全学的な取り組みによって、中山間地域における自然災害からの復興支援策並びに防災・減災に係る方策について多角的視野からの学術的調査分析が行われました。これを契機として、2006年に災害研究と復興科学研究を推進する「災害復興科学センター」が、さらに2011年に「災害・復興科学研究所」が設立され、自然科学から人文社会科学、医学までの幅広い分野が連携した研究を実施し、その成果は広く社会に還元されてきました。

2015年には、全球的気候変動による災害現象の極端化、及び巨大地震に連動した地震・火山活動や複数の要因による複合災害のリスク増大に対応することが急務と考え、4部門に改組し、「変容かつ激化する自然災害に対して適応能力が高い強靱（レジリエント）な社会を構築する“Disaster Resilient Societyの創生”」を目指す研究所へと発展させました。

現在は、研究所の特色である積雪地における多様な災害研究を国内外に強く発信するとともに、新潟大学の目標とする「地域から地球環境に至る社会課題の解決と社会変革の創出」のもと、予測困難な災害に対してレジリエントな社会を創生する研究の拠点となることを目指し、国内外の研究機関と連携した取り組みや共同研究を精力的に推進しています。

本研究所の今後の活動に対しまして各方面のご協力とご支援をお願い申し上げます。

所長あいさつ

Message from the Director



新潟大学 災害・復興科学研究所 所長

教授 卜部 厚志

Urabe, Atsushi, Dr.Sc.

Director, and professor
Research Institute for Natural Hazards and
Disaster Recovery

3

Our institute promotes scientific studies, proposes new countermeasures to extreme and large-scale disasters, such as the 2004 Mid-Niigata Earthquake, and aims to establish a centralized center of excellence studying natural hazards and disaster recovery for the Japan Sea coastline and East-Asia Rim zone.

Our institute was established in 1969 when landslide and snowfall/avalanche research was conducted in several different faculties and departments. Upon combining these independent research verticals, the institute became the “Research Center for Hazards in Snowy Areas” in 1978 as a joint university educational facility consisting of three sections, ground hazards, snow and ice hazards, and conservation of soil and water. Studies were promoted on snow and ice avalanches and landslides in snow melting seasons.

After the 2004 Mid-Niigata Earthquake Disaster, a more integrated research program was organized at our University that covers a broad range of subjects from natural hazards to societal disaster recovery in mountainous areas. This program’s achievements have been well received by the scientific community and led to the establishment in 2006 of the “Research Center for Natural Hazards and Disaster Recovery”. In 2011, renamed as the “Research Institute for Natural Hazards and Disaster Recovery”, our organization successfully contributed to the launch of a wide collaboration between natural science, human-social sciences, and medical science for the development of practical solutions to problems relevant to natural hazards and disaster recovery.

Reorganized again in 2015, our studies now focus on the mechanisms underlying the reality of changing and intensifying natural hazards in the 21st-century with the aim of contributing more to the establishment of disaster-resilient societies.

In the future, the institute will strongly promote its research on various disasters in snowy regions, which is one of its specialties, both domestically and internationally, and will vigorously promote collaborative efforts and joint research with domestic and foreign research institutes with the aim of becoming a research center for creating a resilient society against unpredictable disasters. We appreciate your cooperation and contributions to our activities.

日本における災害研究拠点

Research networks for natural hazards in regions facing the Sea of Japan and the Pacific Ocean

新潟大学 災害・復興科学研究所 **Disaster Resilient Society**の創出

適応力が高い強靱な社会の構築を目指した、変容かつ激化する自然災害の学理探究

Research Institute for Natural Hazards and Disaster Recovery, Niigata University

To build a disaster-resilient society, the research institute focuses on natural hazards causing diverse and extreme disasters.

環境動態研究部門

Research Division of
Environmental Dynamics

全球的気候変動と社会環境
の変更に伴う自然災害の素因
の抽出と定量評価

複合・連動災害 研究部門

Research Division of
Cascading and Linked
Multi-Hazards

巨大地震に連動した地震・
火山活動の履歴と予測・
評価法の確立

防減災技術 研究部門

Research Division of
Hazard Mitigation

災害外力の急激な上昇に
適応した社会の
防・減災技術の開発

社会安全システム 研究部門

Research Division of
Societal Safety Systems

日本海側を基軸とした国土構造
の再形成を視野に入れた総合的
な社会安全システムの構築

新潟大学を中核とした災害研究の推進

Facilitating collaborative research on natural hazards with
Niigata University as a core institution in the network

・積雪地域変動帯における災害研究ネットワークの拡充

Facilitating research network of natural disasters in the Japan Sea margin mobile belt and snowy areas.

・地域力創造のための防減災研究ネットワークの構築

Organizing research network for disaster prevention and mitigation for improving
regional disaster resilience.

東北大学・災害科学国際研究所

Tohoku University,
International Research Institute
of Disaster Science

Applying knowledge derived from
research on the 2011 Great East Japan
Earthquake and tsunami disaster and
its recovery and research findings on
disasters worldwide to society.



新潟大学
NIIGATA UNIVERSITY
災害・復興科学研究所

京都大学・防災研究所 【共同利用・共同研究拠点】

Kyoto University, Disaster
Prevention Research Institute

Establishing integrated methodologies
for disaster loss reduction on
the basis of natural and social sciences
to pursue the principles
of natural hazard reduction.

東京大学・地震研究所 【共同利用・共同研究拠点】

The University of Tokyo,
Earthquake Research Institute

Unravelling the various phenomena
within the earth and seismic and volcanic
activities and to archive mitigation
of disasters by the phenomena.



環境動態研究部門

Research Division of
Environmental Dynamics

日本海側地域に災害をもたらす集中豪雨・豪雪、突風などの顕著大気現象のメカニズムをグローバル・ローカル双方の視点から解明し、水循環の視点から水害・雪害・土砂災害の発生機構を明らかにする災害環境モニタリング・解析システムを構築する。

The research division targets the mechanisms of extreme atmospheric phenomena that cause the disasters in the Japan Sea region from both the global and local perspectives. Studies are prompted on the following subjects:

- 1) Understanding of the occurrence mechanism of heavy rain/snowfall and gusts with severe storms or tornados.
- 2) Understanding the occurrence mechanism of floods, snow damage and sediment disasters from the perspective of water circulation.
- 3) Development of disaster monitoring and analysis system.



顕著現象解析

顕著大気現象の実況 監視・解析システムによる災害発生メカニズムの解明

- 地上・上空・衛星観測による3次元気象実況監視体制の強化
- リアルタイムデータ収集・解析システムの高度化による迅速な顕著現象の検出とメカニズムの解明
- 高解像度再現・予測実験モデルによる災害発生機構の解明

Research on Extreme Atmospheric Phenomena

This research area aims to understand disaster occurrence mechanism by real-time monitoring and analysis system of extreme atmospheric phenomena. Studies include:

- 1) Reinforcement of three-dimensional atmospheric condition monitoring system by surface, upper air and satellite observations.
- 2) Rapid detection of remarkable phenomena and understanding of the mechanism by advancement of real-time data acquisition and analysis system.
- 3) Understanding of disaster occurrence mechanism by reproduction and prediction experiments using high resolution atmospheric model.

グローバル・長期変動解析

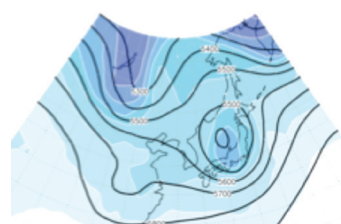
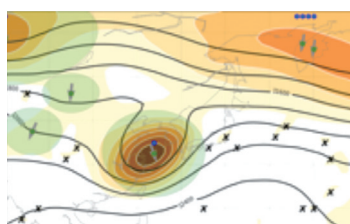
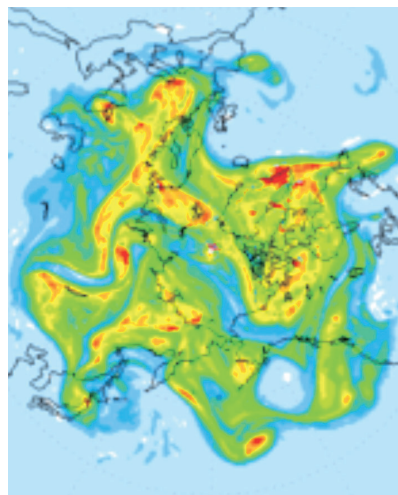
顕著大気現象を引き起こすグローバルな大気・海洋・雪氷・陸面プロセスの解明

- 再解析データや長期気候ランを用いたグローバルな大気・海洋・雪氷・陸面プロセスの解明
- 雪氷・海洋・陸面変動の影響を評価する大気大循環モデルを用いた感度実験
- 顕著大気現象発生予測に関わる大気循環モニタリングシステムの開発

Research on Global and Climate Variability

This research area aims to understand global atmosphere-ocean-snow-ice-land processes that cause extreme atmospheric phenomena. Studies include:

- 1) Understanding of global atmosphere-ocean-ice-land processes using reanalysis data and long-term climate run based on numerical experiments.
- 2) Sensitivity experiment using atmospheric general circulation model to evaluate the influence of ice-ocean-land system variability.
- 3) Development of an atmospheric circulation monitoring system related to the prediction of the occurrence of extreme atmospheric phenomena.



複合・連動災害研究部門

Research Division of Cascading
and Linked Multi-Hazards

プレート境界(海溝群)の巨大地震に連動した背弧側(日本海側)の地震・火山活動や、温暖化に伴う急激な雪氷環境の変容による災害の集中、地震・火山活動と複合化した雪氷災害など、今後の積雪地変動帯における災害リスクの変容過程を解明し、これらに対応した減災機能の構築に貢献する。

This research division targets the disaster risk evaluation in snowy orogenic zones (tectonically active regions), such as areas along the Sea of Japan, and include studies in the following areas:

- 1) Understanding seismic/volcanic activities in the back-arc side linked to mega-earthquakes in the fore arc side.
- 2) Clarifying the mechanism of multi-hazards caused by the interaction of snow and ice with seismic/volcanic activities.
- 3) Evaluating the impact of global warming on snow and ice-related environments and disasters.



地震連動災害

プレート境界地震に連動した背弧側の地震災害の予測と軽減

- 堆積物による背弧側の津波履歴の復元と波源域の推定手法の構築
- 地層に記録された災害履歴の復元手法の確立
- 環太平洋変動帯での地震連動災害に対する研究・技術の高度化

Research on Disasters Linked to Earthquakes

This research area aims to predict and mitigate disasters caused by earthquakes in the back-arc side linked to a mega-earthquake in the fore-arc side. Studies include:

- 1) Reconstructing tsunami history of the back-arc side by identification of "tsunami" deposits and development of an estimation technique for the tsunami source area.
- 2) Establishing a reconstruction technique of natural hazard history from geological records.
- 3) Advancing disaster research caused by earthquakes in the Circum-Pacific mobile belt.

火山複合災害

プレート境界地震に連動した火山災害の予測と軽減

- 火山土砂の突発的・恒常的な移動メカニズムと災害履歴の解明
- 複合要因による火山土砂輸送現象の予測と災害評価
- 火山噴火後の中長期的災害の要因解明と広域・連動災害の予測

Research on Volcanic Multi-hazards

This research area aims to understand volcanic hazards linked with earthquakes occurring in plate boundaries and their prediction and mitigation, especially in the following topics:

- 1) Lahars and perennial hydrological transportation of volcanic materials.
- 2) Prediction and assessment of transportation of volcanic materials induced by multiple factors.
- 3) Causes and factors of mid-term and long-term hazards in an eruption aftermath and prediction of widespread and cascading hazards.



雪氷複合災害

温暖化及び地震・火山活動と複合化した雪氷災害の予測と軽減

- 温暖化要因及び地震・火山要因の雪氷災害のメカニズム解明
- 複合要因による雪氷災害の予測手法の開発とリスク評価
- 降水変動や極端気象が雪氷災害に及ぼす影響の評価と対策技術

Research on Snow and Ice-related Multi-hazards

This research area aims to promote studies on prediction and mitigation of multi-hazards caused by the interaction of snow and ice with seismic/volcanic activities in a warming climate. Studies include:

- 1) Elucidating the mechanisms and risk evaluation of snow and ice-related multi-hazards.
- 2) Developing prediction methods and countermeasure techniques.
- 3) Evaluating the impact of extreme weather and changes in precipitation regime on snow and ice-related hazards.

防減災技術研究部門

Research Division of
Hazard Mitigation

土砂災害や都市域災害(洪水・津波・地盤災害など)に対して、予防力限界の事前把握、早い察知と予測を実現する上で必要なメカニズムの解明、シミュレーション、危険度評価度などを行い、災害リスクに対してレジリエントな社会の構築に貢献する技術を開発する。

This research division targets landslides and urban disasters such as floods, tsunamis, and other geo-disasters.

These works are expected to promote disaster-resilient societies with research related to the following:

- 1) Understanding the mechanisms required to develop early sensing and hazard prediction.
- 2) Evaluating the limits of designed structured counter-measures.
- 3) Developing new numerical simulation and risk evaluation.



土砂災害

複合要因による変動帯特有の斜面災害の予測と解明

- 複合要因による高速・長距離土砂移動災害のメカニズム解明
- 地震・豪雨による土砂災害危険度評価技術の高度化
- 社会環境の変容に対応した中山間地、都市部の土砂災害リスク評価

Research on Landslide Disasters

This research focuses on the prediction and mitigation of landslide disasters induced by multiple factors in tectonically active zones. Studies include:

- 1) Developing mechanisms of rapid and long runout landslides from multiple causes.
- 2) Integrating risk evaluation technologies of landslides induced by earthquakes and extreme rainfalls.
- 3) Evaluating the disaster risks of landslides in the mountainous and urbanizing communities affected by societal and environmental changes.

水災害

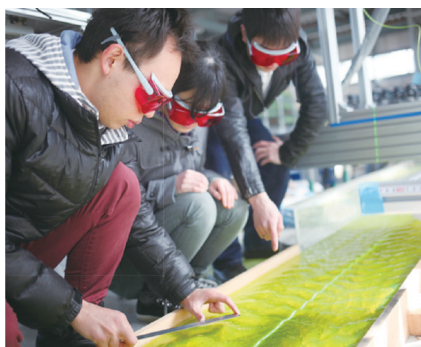
低平地に立地する都市域の洪水・地盤災害の予測と軽減

- 極端化気象により洪水災害の予測と軽減
- 都市地盤の液状化など地盤災害の脆弱性の評価
- 社会環境の変容(社会資本、人口減少など)に対応した減災技術の構築

Research on Water Disasters

This research aims to study the prediction and mitigation of water disasters caused by extreme weather and tsunamis running up in rivers around urban area in low-lying areas. Studies include:

- 1) Predicting and mitigating flood flows in channels and plains caused by extreme rainfalls.
- 2) Integrating risk evaluation of quake liquefaction damage on urbanized low-lying areas.
- 3) Developing a natural disaster mitigation technology for changing social structure and population decline.



社会基盤

安全な生活基盤の構築と地域産業基盤の防災・減災力の強化

- 地震・津波・洪水災害による社会基盤の減災機能の診断技術の開発
- 中山間地域の農業基盤の復興技術の国際展開
- 変容する社会に対応した減災技術のシステム化と安全な社会基盤の構築

Research on Societal Infrastructures

This research aims to promote studies on establishing safer lifeline and infrastructures, as well as enhancing the disaster risk reduction function of local industrial infrastructures. Studies include:

- 1) Evaluating the hazard mitigation capacity of the societal infrastructure for earthquakes, tsunamis, and floods.
- 2) International application of developed agricultural infrastructure recovery techniques in mountainous communities.
- 3) Developing integrated mitigation technology for constructing and managing safe infrastructures.

社会安全システム研究部門

Research Division of
Societal Safety Systems

歴史災害における社会システムの変化や今後の巨大・複合災害の影響予測を踏まえて、情報技術を活用した災害対応や復興戦略を研究する。また、社会、学界、行政、国際防災機関等と連携し、災害に対して強靱な(レジリエント)な社会のシステムに関する研究を行う。

This research division targets the development of emergency countermeasures and recovering strategies for disasters using information and communication technology. Studies are promoted on the following subjects:

- 1) Understanding the changing processes of social structures in areas stricken by natural disasters.
- 2) Estimating social impact associated with multi-hazards in the near future.
- 3) Studying resilient social structures in natural disasters areas in cooperation with academia, government agencies, and international organizations.



歴史災害解析

歴史史料による災害の履歴と社会システムの変容の解明

- 歴史史料による災害の履歴と社会システムの変容の解明
- 歴史災害における地震・火山・大規模土砂災害の解明
- 災害史料の保全とその分析方法の確立

Research on Analysis of History Disasters

This research aims to promote studies on elucidating and understanding histories of disaster and changing processes of social structures and their relation to damaged areas.

Studies include:

- 1) Analyzing historical materials and antique documents of disasters to understand the hysteresis of natural disasters, including earthquakes, floods, volcanic eruptions, and the changing processes of social structures.
- 2) Establishing archive technology for historical materials and antique documents relating to this subject.

復興戦略

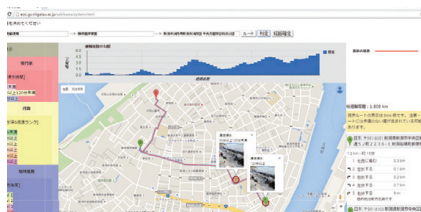
国土構築の再形成を視野に入れた復興戦略の確立

- 迅速な災害対応のための空間を用いた情報統合技術の確立と展開
- 複合災害に対応した危機管理体制の構築支援
- 多元的被災情報の把握・解析手法の構築と災害対応への適応技術の確立

Research on Strategies of Recovery from Natural Disasters

This research focuses on establishing strategies of recovery from natural disasters in relationship to the rearrangement of national land planning.

- Studies include:
- 1) Applying spatial information technology to develop rapid measures of disaster recovery.
 - 2) Supporting installation of risk management headquarters for multiple disasters.
 - 3) Implementing information and communication technology to estimate damages in areas stricken by natural disasters.



防災情報システム

地域社会の安全を担保する新たな災害情報の利活用モデルの構築

- クラウドやICTを活用した災害情報の一元管理と災害予測分析手法の開発
- 衛星情報により広域災害発生後の多元的な被災把握技術の構築
- 行政ニーズに対応した広域災害情報の可視化と対応支援技術の確立

Research on ICT for Monitoring and Evaluating Damage due to Natural Disasters

This research aims to develop information and communication technology for monitoring and evaluating damage by natural disasters.

- Studies include:
- 1) Developing the application of cloud computing in the analysis and integrated management of natural disaster damages.
 - 2) Establishing a method for the estimation of varying natural disaster damages in a wide geographical range based on satellite information.
 - 3) Developing methods of visualizing damage from natural disasters in a broad geographical range and for assisting local administrators with measures for natural disaster recovery.

災害調査

Disaster Investigation

本研究所では、国内外で発生した自然災害の調査に取り組んでいます。

The “Research Institute for Natural Hazards and Disaster Recovery” investigates natural disasters occurred at domestic and overseas.

草津白根山噴火(2018年1月23日)

The 2018 phreatic eruption at Kusatsu-Shirane volcano



草津白根山2018年噴火によって斜面に堆積した灰色火山灰
Gray volcanic ash deposited on a volcanic slope by the 2018 phreatic eruption at Kusatsu-Shirane volcano.



草津白根山2018年噴火の火山灰堆積が融雪や積雪特性へ及ぼす影響を探るため、積雪およびそれに挟まる火山灰層の断面観察の実施

Cross sectional observation of snowpack and intercalated volcanic ash deposits after the 2018 phreatic eruption at Kusatsu-Shirane volcano.

北海道胆振東部地震(2018年9月6日)

The 2018 Hokkaido Eastern Iburi Earthquake



表層崩壊による斜面災害(北海道厚真町)
Slope disaster caused by surface collapse.



崩壊斜面近傍における気象・積雪観測点の設置(北海道厚真町)
Meteorological and snow observations by the side of collapsed slopes.

東日本台風(2019年10月13日)

The typhoon No.19 in 2019



千曲川の破堤箇所(長野市穂保)
Flood levee breach of the Chikuma River.(Hoyasu, Nagano city)



洪水による河岸の浸食(信濃川,津南町巻下)
Erosion of the bank by the flood.(Shinano River, Makishita, Tsunan town)

共同研究

Collaborative
Research Projects

本研究所では、災害科学の研究の一層の発展を図るため、広く英知を学外に求め、学外の研究者と本研究所の教員が共同で行う共同研究を実施しています。

The "Research Institute for Natural Hazards and Disaster Recovery" conducts collaborative research projects with researchers at other universities and research institutes to develop studies of natural hazard sciences and disaster recovery.

スタック車両の原因となる圧雪路面の轍掘れ発生条件の解明



共同研究先 福井大学

【成果概要】圧雪轍掘れの発生メカニズムの解明を目的として低温室内で圧雪への貫入試験を行い、タイヤ接地圧が貫入深さに及ぼす影響を明らかにした。

1) "Penetration tests for rutting phenomena into a wet compacted-snow on road due to a passing vehicle" University of Fukui

To elucidate the mechanism of rutting phenomena into a wet compacted-snow on road due to a passing vehicle, penetration tests into snow were conducted in a cold room. The test results revealed the effect of ground contact pressure of tire on the penetration depth quantitatively.

地震後の降雨・融雪による崩壊斜面の浸食過程と土砂動態



共同研究先 北海道立総合研究機構

【成果概要】2018年北海道胆振東部地震発生後の1年間における崩壊斜面の土砂動態、および融雪・降雨条件との関係を、地震直後の航空レーザー測量、UAV-SfM測量、地質調査および気象データにより把握した。

2) "Erosion process and material movement of collapsed slopes by rain and melting snow after the 2018 earthquake" Hokkaido Research Organization

This study revealed the slope material change of collapsed slopes during one year after The 2018 Hokkaido Eastern Iburi Earthquake and the relations with melting snow and rain condition by airborne laser survey, UAV-SfM survey, geological survey, and meteorological data.

蔵王火山における火山泥流発生履歴解明と数値計算による流下範囲予測



共同研究先 山形大学

【成果概要】現在も活動的な蔵王火山における過去約1万年間の火山泥流発生の履歴解明のため、下流域の地質調査を行い、泥流堆積物の抽出と年代測定を行った。また今後の噴火によって起こりうる火山泥流の流下影響範囲を予測するため数値シミュレーションを実施した。

3) "Lahars at Zao volcano: its history, flow modelling, and hazard assessment" Yamagata University

This collaborative research aims to assess risks and inundation areas by future lahars at active Zao volcano, approaching from geological and chronological study of lahar deposits and from numerical modelling of lahar flows with several scenarios.

廃棄物を中心とした低コスト資材による火山地帯の酸性渓流水の中和処理



共同研究先 埼玉大学

【成果概要】火山からの酸性渓流水の中和処理に低コスト資材を用いる実験を行った結果、鉄鋼スラグやリサイクルコンクリートは中和のみならず、ヒ素や鉛の除去にも効果を示した。

4) "Neutralization of acidic river waters from volcanic areas using low-cost materials such as demolition waste and industrial by-products" Saitama University

As a result of experiments using low-cost materials for neutralizing acidic river water from volcanic areas, steel slag and recycled concrete were extremely effective not only in neutralizing but also in removing arsenic and lead.

小型LiDARによる吹きだまり形状計測のための基礎的実験



共同研究先 東京工業大学

【成果概要】吹雪で形成される吹きだまり形状の発達過程を解明するため、雪原に模擬フェンスを設置した野外実験を行った。その結果、LiDARにより計測した吹きだまり形状はUAV空撮で算出した数値表層モデルと一致しているだけでなく、吹雪時の悪天候においても計測可能である有用性を示した。

5) "Basic experiment to measure snowdrift shape with small-size LiDAR" Tokyo Institute of Technology

This collaborative research investigated the development process of the snowdrift produced by blowing snow and conducted the field experiment using a makeshift fence at the snowfield. The snowdrift shape measured with LiDAR was consistent with the digital surface model estimated by UAV photography. In addition, the LiDAR measurement showed usability in bad weather conditions such as blowing snow.



災害・復興科学研究所

Research Institute for Natural Hazards & Disaster Recovery

新潟大学 災害・復興科学研究所 〒950-2181 新潟市西区五十嵐2の町8050
TEL.025-262-7051 FAX.025-262-7050
nhdr_office@gs.niigata-u.ac.jp www.nhdr.niigata-u.ac.jp/
Ikarashi 8050, Nishi-ku, Niigata City Tel +81-25-262-7051 Fax +81-25-262-7050

研究所ロゴタイプ

カーブして中心が浮いた線は不安定な大地を、赤い丸は復興に向かう人間を示しています。紫と朱の色使いや、家紋のようにも見える特長な形は、日本的な印象を与えとともに、世界一の研究所を目指す意味も込めています。

Meaning of the Logo of Our Institute

Shape of the arc of the logo indicates unstableness of ground, red circle indicates people who are continually walking towards recovery from disasters. The shape and the colors of the logo would give some Japanese impressions, and also our institute is aiming for the best institute in the world.