Time	Session 1 Room 1	Session 2 Room 2	Poster & Stand - Coffee Break Room	Lunch & Dinner
Sunday 18 & Monday 19/08/2019				
Sun, 18/8 & Mon, 19/8 8-10am	Departure from Manas Airport Driving to Issyk Kul - Arrival at Aurora Centre			
Mon, 19/8 4-9pm	Welcome & Information Desk *Icebreaker Party*			
Tuesday 20/08/2019				
Tue, 20/8 8:30-10:15am	ICGDR Opening Ceremony ICGDR **Keynote lectures 1** (Fawu Wang – Ceremony Leader K. Abdrakhmatov –Session Leader)			
Tue, 20/8 10:15-10:45am			*Coffee Break* Poster & Stand Installation	
Tue, 20/8 10:45am-12:45pm	Geohazards & Risk Poster & Stand Presentations '180s' (HB. Havenith – Session leader)	ICGDR board meeting 10:30-12:30		
Tue, 20/8 12:45-2pm				*Lunch*
Tue, 20/8 2-4pm	**Session 1.1**: Earthquake & Landslide hazards – General (L. Cauchie)	**Session 2.1**: Geotechnical approaches in Geohazard engineering (R. Mamyrova)		
Tue, 20/8 4-5pm			*Coffee Break* & Poster & Stand session	
Tue, 20/8 5-6:30pm	**Session 1.2**: Seismotectonics & Earthquake & Landslide hazards – in Central Asia (A. Strom)	**Session 2.2**: Monitoring and Modelling of Geohazards (A.S. Mreyen & A. Torgoev)		
Tue, 20/8 7:30-10pm				*Dinner*

Wednesday 21/08/2019				
Wed, 21/8 8:30-10:30am	**Plenary session** : Natural Risk assessment and management, including social aspects (S. Henry)			
Wed, 21/8 10:30-11am			*Coffee Break* Poster & Stand session	
Wed, 21/8 11-12:45am	**Session 1.3** : High Mountain & Flood & Mining Hazards (M. Cerny & I. Torgoev)	**Session 2.3** : Remote sensing in Geohazard engineering (R. Schlögel)		
Wed, 21/8 12:30-2pm				*Lunch*
Wed, 21/8 2-4pm	**Session 1.4** : Earthquake risk analysis and Geophysics in Geohazard assessment (P. Rosset)	**Sessions 2.4** : Landslide susceptibility & Natural risk mapping (A. Braun)		
Wed, 21/8 4-5pm			*Coffee Break* Poster & Stand session	
Wed, 21/8 5-6:30pm	Plenary Closing session **Keynote Lectures 2** (F. Wang & K. Abdrakhmatov)			
Wed, 21/8 7-11pm				*Dinner*
Thursday 22/08/2019				
Thu, 22/8 8am	Departure of first participants			
Thu, 22/8 10am-5pm	Field trip to Ananevo rockslide and Chon Aksu Fault Departure of *short-stay* participants			
Thu, 22/8 6-11pm	*Dinner*			
Friday 23/08/2019				
Fri, 23/8 10am-6pm	Field trip to Chon Kemin Rockslide and fault scarp **Check-out for all participants & return to Bishkek** (no common dinner organised)			
Sat, 24/8 10am-4pm	For interested participants : Field trip to Bielogorka twin rock avalanches (near Bishkek) Possible common dinner near Ala Artcha River			

LIST OF CONTRIBUTIONS

Session & Leader	Authors-Presenter	Title of contribution
Tuesday 20/08/2019		
Keynotes 1 **K. Abdrakhmatov** (20'+5')	Christoph Grützner	Paleoseismic studies on active faults in Central Asia
	Michal Cerny et al.	Hazardous Mountain Lakes in Kyrgyz Mountains: Current State, Assessment and Monitoring
	Manchao He	An Accurate Prediction Method for Geo-disasters
Posters in 180s **HB. Havenith**	Valentine Piroton et al.	Differential Radar Interferometry and Optical Images Analysis to Study Recent Landslide Evolution in the Mailuu-Suu Valley, Kyrgyzstan
	Philippe Rosset et al.	Seismic Risk Analysis for Schools and Health Facilities in Kadamjay and Aidarken, Batken province, KGZ
	Farkhod Hakimov, H.B. Havenith et al.	Seismic Microzonation of Dushanbe, Tajikistan
	Alice Matossian, HB Havenith, Anika Braun et al.	The Armenian Landslide Database and related Susceptibility Analysis
	Emiie Lemaire et al.	Structural Geology of Massive Rockslide Source Zones
	HB. Havenith et al.	Multi-Geohazard Assessment for Batken region, Kyrgyz Republic
	Anne-Sophie Mreyen et al.	Landslides from the 'inside'
	Stephanie Thielen et al.	Ambient noise measurements supporting landslide and fault surface rupture studies in Central Asia
	Elena S. Balandina, Oleg V. Zerkal	Assessment of the Regional Activity of Rockslides and Rock Avalanches in the Kokomeren River Basin (Tien Shan, Kyrgyzstan)
	Raushan Arnhardt et al.	Consideration of a centralized national landslide geo-database for the Kyrgyz Republic
	Katrin Dohmen, Anika Braun et al.	Landslide susceptibility analysis of the Tien Shan geohazards database with machine learning methods – methodology
	Dirk Balzer	Risk Exposure Assessment for the Districts of Mansehra & Torghar, Province Khyber Pakhtunkhwa, Islamic Republic of Pakistan: Case Study "Landslides"
	Pavel Bláha, Michal Černy	Slope Failures and Geophysics
	F. R. Cinti, Riccardo Civico et al	Earthquake Recurrence and Rupture Patterns: Insights from Paleoseismic Data of Central Apennines (Italy)
	Dambaru Ballab Kattel, Tandong Yao	Contrast signals of climatic warming on the southern slopes of the Himalayas
	Solmaz Mohadjer et al.	Towards a unified geohazards database for Central Asia
	Armas Iuliana et al.	InSAR surface deformation and modeling unravel an active salt diapir in southern Romania

Stand in 180s **HB. Havenith**	Philippe Cerfontaine, R. Schlögel (supported by E. Lemaire)	Geohazard models in Virtual Reality - **Stand**
	Alexander Strom, Kanatbek Abdrakhmatov (supported by E. Lemaire)	The Kokomeren River basin – a field textbook of the Central Asian rockslides and rock avalanches & Rockslides and Rock avalanches in Central Asia - **Poster & Stand**
	Will Reis and Sergey Petrov (supported by L. Cauchie)	Güralp Seismological Equipment - **Stand**

Session 1.1 **L. Cauchie** (12'+3')	Kun Li et al.	Insight into grain size and volume effects on flow behavior and deposit characteristics of rock avalanches
	Qi-wen Lin et al.	Effects of rock mass discontinuities on the deposit characteristics of rockslides: laboratory experiments
	Xiaoli Chen, Chunguo Liu	Prediction of possible mass wasting after the 2014 Ms 6.5 Ludian earthquake, China
	EMERGEO Working Group , Riccardo Civico et al.	Surface Ruptures of the 26 December 2018, Mw 4.9, Mt. Etna Earthquake, Sicily (Italy)
	Chong Xu	Landslides induced by the 1920 Haiyuan, China M8.5 earthquake
	Xiaohua Liang	Study on the activity of the Jinpingshan fault zone in Sichuan, China by using ultra-deep tunnel profile data
	Xiaoshuai Song et al.	Giant Submarine Landslide in the South China Sea: Evidence, Causes, and Implications

Session 2.1 **R. Mamyrova** (12'+3')	Chunyu Song et al.	Remediation of Geological Hazards Caused by Excavation of a Runoff Interception Ditch in Mudstone
	Guo-liang Dai, Zheng-zhen Wang	Application and Development of Foundations of Yangtze River Bridges
	Masaho Yoshida et al.	Experimental Study on Deformation Mitigation Method against Liquefaction for Existing Embankment by Reinforcing Slope
	Yaguo Zhang, Jingpei Li	Spatial distribution characteristics of stress and pore pressure induced by pile installation
	Shengwen Qi, et al.	A new method to predict the occurrence of rock burst
	Zi-jun Feng et al.	Deformation and failure of granite subjected to triaxial stresses and high temperature up to 500℃

Session 1.2 **A. Strom** (15'+5')	Alexander Strom, Hans-Balder Havenith et al.	Seismotectonic and Geohazard context of the Naryn and Vakhsh Hydropower cascades in Central Asia
	Magali Rizza et al.	Where terminates the active trace of the Talas-Fergana Fault in its southern part? Paleoseismic investigations in the Arpa Basin
	Rustam Niyazov, Bakhtiar Nurtaev et al.	Some features of self-excited landslides during Hindu Kush earthquakes
	Ganjali Shafiev	Overview and brief description of landslide processes in the territories of Khorog town (South-Western Pamir, Tajikistan)
Session 2.2 **A-S. Mreyen & A. Torgoev** (12'+3')	He Jianxian et al.	Seismic response of a rock slope under wide frequency shear loads using a large-scale shaking table
	Ping Li	Aging Effect on Loess Properties and the slope stability
	Tonglu Li	A two-layer numerical model for simulating the frontal plowing effect of flow-like landslides
	Zhitian Qiao	Constitution of Loess Microstructure Model with Monte Carlo Simulation
	Liang Xue et al.	Work Program of Landslide Monitoring in Zhoushan
Wednesday 21/08/2019		
Plenary Session - Risk **S. Henry** (15'+3')	Tohir Sabzaliev.	Development of Spatial Data Infrastructure for Disaster Risk Reduction
	Oleg V. Zerkal	Procedure of geo-hazards mapping and regional quantitative geo-risk assessment (with application to an area in Tajikistan)
	Iuliana Armaș	Psychometric research at the Center for Risk Studies (CRMD), University of Bucharest, Romania
	Cees v. Westen, Kavinda Gunasekara	Multi-Hazard Risk Assessment at National Scale for Tajikistan
	J. Andres, Sabine Henry et al.	Assessing the efficacy of social vulnerability measurements through the impacts of disasters
	Dirk Balzer et al.	An International Best Practice Example of Building Knowledge Capacity in Understanding Disaster Risk
Session 1.3 **M. Cerny & I. Torgoev** (15'+3')	Inom Normatov et al.	Water-related natural disasters in Zeravshan river basin
	Adam Emmer et al.	Distinct mechanisms of landslides in moraines associated with the post-LIA glacier thinning: observations from the Kinzl glacier, Huascarán, Peru
	Dambaru Ballab Kattel et al.	Inventory of Glacial lakes and catastrophic floods on the Northern Slopes of the Kyrgyz Mountain Range
	Vít Vilímek et al.	Geomorphologic impacts of the glacial lake outburst flood from Lake No. 513 (Peru)
	Uwe Walter, Almazbek Torgoev et al.	Remediation of uranium legacy sites in Central Asia

Session 2.3 **R. Schlögel** (12'+3')	Thomas Lege et al.	Detection and Monitoring of Subsidence and further Ground Motion processes via the PSI-based German Ground Motion Service
	Alexandru Onaca et al.	Quantifying recent landscape changes using multi-temporal satellite images in permafrost areas from Western Siberia
	Robert Behling et al.	Monitoring landslides in Southern Kyrgyzstan using satellite time series data, UAV, and field observations
	Romy Schlögel et al.	Satellite and *in situ* observations of changing climate-related hazards in the Fergana valley, Kyrgyzstan
	Frodella W. et al.	The use of InSAR techniques for supporting landslide emergency management in urban areas: the example of San Fratello (Southern Italy)
Session 1.4 **P. Rosset** (15'+5')	Masakatsu Miyajima et al.	Geo-disasters in the 2018 Sulawesi Earthquake in Indonesia
	Philippe Rosset et al.	Seismic Risk Analysis of Residential Buildings in Kadamjay and Aidarken, Batken province, KGZ
	Yuko Serikawa, Masakatsu Miyajima	Inclination of the houses induced by liquefaction -The 2018 Hokkaido Iburi-tobu Earthquake-
	Cauchie Léna et al.	Seismic ambient noise analysis for landslide characterization: application to Carpathian landslides
Session 2.4 **Anika Braun** (12'+3')	Adam Emmer et al.	Geographies and Scientometrics of Research on Natural Hazards
	Katrin Dohmen, Anika Braun et al.	Landslide susceptibility analysis of the Tien Shan geohazards database with machine learning methods – results
	Dirk Balzer et al.	Landslide Hazard and Risk Assessment/Management (LHARA) in Lanzhou, Province Gansu, P.R. of China: Project Introduction
	Jafar Niyazov et al.	Natural Disaster Risk Assessment for target areas in southwestern Tajikistan
	Ugur Ozturk et al.	Towards a Dynamic Landslide Susceptibility and Risk Model
	Isakbek Torgoev et al.	Risk analysis for Koy-Tash landslide in Mailuu-Suu, Kyrgyzstan
	Xiaoyi Shao	Landslide susceptibility mapping for the affected area of the 2018 Tomakomai, Japan Mw 6.6 earthquake by virtue of two machine learning models
Keynotes 2 **K. Abdrakhmatov** (20'+5')	Solmaz Mohadjer et al.	From research to action: Linking geohazards science and preparedness in schools in Central Asia
	Armas Iuliana et al.	Landslide susceptibility mapping using the infinite slope model and InSAR
	Fawu Wang et al.	Different liquefaction mechanisms in rapid and long runout landslides triggered by earthquakes

Quantifying recent landscape changes using multi-temporal satellite images in permafrost areas from Western Siberia

Alexandru Onaca[1,*], Florina Ardelean[1], Marinela Chețan[1],
Andrei Dornik[1], Alexandru Hegyi[1], Petru Urdea[1]

[1] Department of Geography, West University of Timișoara, Romania
[*] Corresponding author. Tel: +40-755692121; E-mail: alexandru.onaca@e-uvt.ro

Abstract

The Arctic is warming much faster than the global average and most of the areas in the Arctic experienced rapid changes due to permafrost degradation, these areas being particularly sensible to climate change (Karjalainen et. al, 2019). Permafrost is considered one of the reliable terrestrial indicators of climate change and has been identified as an Essential Climate Variable by the global observing community. Permafrost degradation generates irreversible ecological changes, posing serious impacts on infrastructure and sustainability of local communities, too (Hjort et al, 2018).

The advantages of using remote sensing data to reveal landscape changes in permafrost areas has been widely acknowledged. The aim of this study is to reveal the landscape changes based on satellite images in several test sites distributed in different types of permafrost zones (continuous, discontinuous, isolated and sporadic) located in Western Siberia.

We used both optic satellite images from Landsat archive in the last 20 years to assess the spatio-temporal changes in vegetation indices, lakes extent changes and distribution of wild fire scars, and also Sentinel-1 radar images to quantify yearly displacement rates of the active layer in the analyzed sites in the last 4 years. The first results show that the main landscape change in the last 20 years is related to a significant decrease in lake extent, due to lake shrinking. An increase in the NDVI values has been observed for the analyzed interval, which correspond to a slight greening as reported by other studies in southern tundra. High density of wildfire scars has been identified in the site located in the taiga of Urengoy region in several years (i.e. in 2006). The yearly surface subsidence rates show similar values to other reported sites from Western Siberia, small displacement rates being related to seasonal variations of the active layer, whereas higher values correspond with identified thaw slumps.

References

Hjort, J., Karjalainen, O., Aalto, J., Westermann, S., Romanovsky, V.E., Nelson, F.E., Etzelmüller, B., Luoto, M., 2018. Degrading permafrost puts Arctic infrastructure at risk by mid-century. Nat. Commun., 9(1), 5147.

Karjalainen, O., Aalto, J., Luoto, M., Westermann, S., Romanovsky, V.E., Nelson, F.E., Etzelmüller, B., Hjort, J., 2019. Circumpolar permafrost maps and

geohazard indices for near-future infrastructure risk assessments. Scientific Data, 6, 190037.