ENGAGE
Geomorphologische Systeme & Risikoforschung

universität wien

Selection of possible topics for theses (Bachelor, Master, Diploma, Teaching)

Status as of: 20.11.2018

Note:
These are only suggestions and should give only an idea of a thematic orientation. Details are always to be clarified in the conversation. And, of course, topics can be chosen and maintained that are not listed here.

Theme	Type	Methods	Project	Contact Person
Landslides: analysis, monitoring and modelling				
Analysis of landslide activity in selected areas of Lower Austria	Data collection and evaluation	GIS, statistical analysis, modeling	NoeSLIDE	Prof. Glade, MSc. Stumvoll
Creation of landslide inventories in selected areas in Lower Austria (based on high-resolution DGMs)	mapping	GIS (if necessary, field work)	NoeSLIDE	Prof. Glade, MSc. Stumvoll
Analysis of human intervention on the triggering of landslides in selected areas in Lower Austria	Emp. Fieldwork / modeling	Fieldwork and / or GIS	NoeSLIDE	Prof. Glade,MSc. Stumvoll
Monitoring landslides (laser scanning, GPS, octocopter ...)	Data collection and evaluation	Fieldwork and data analysis	NoeSLIDE	Prof. Glade, MSc. Stumvoll
Analysis of the influence of topography and land use on the probability of occurrence and connectivity of debris flow events in the Alpine region	Data collection and evaluation	GIS, statistical analysis	EE-Con	Dr. Pöppl
Best practice: Monitoring geom. Systems (e.g. landslides, fluvial systems)	Literature review	Literature review	-	Prof. Glade, Dr. Pöppl, Dr. Kraushaar
Analysis of soil mechanical properties in the Lower Austria Flyschzone in the context of landslides	Fieldwork, lab analysis	Fieldwork, soil phyisical analysis	-	Prof Glade, Dr. Kraushaar
Chemical fingerprint of the sliding zone in landslides	Fieldwork, lab analysis	Fieldwork, chemical analysis	NoeSLide	Dr. Kraushaar
Landslide databases in Austria for monitoring / early warning systems	Literature work, emp. data analysis	GIS, statistical analysis	-	Prof Glade, MSc. Stumvoll
Modeling and analysis of landslides in selected areas (eg Klingfurth)	Data analysis, modeling	GIS, statistical analysis	With collaboration of GBA	Prof. Glade

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Early warning systems of landslides	Literary work and / or data	Literature evaluation and / or data evaluation	NoesSLIDE	Prof. Glade, MSc Stumvoll
Extreme events in the Alps	Literature review	Literature review	ExtremA	Prof. Glade, PD Dr. Mergili
Vulnerability: Indicators, space-time developments, uncertainties				
Spatiotemporal development of the vulnerability of a municipality (eg Austria)	Data collection and evaluation	GIS, Geostatistics	-	Prof. Glade
Vulnerability of infrastructure (economic losses, ...) e.g. Lower Austria	Data collection and evaluation	Fieldwork and / or GIS, data analysis	-	Prof. Glade
Analysis of uncertainties in vulnerability analyzes	Literature review	Literature review	-	Prof. Glade
Natural disasters and risks: analysis and evaluation				
Multi-temporal changes in spatial distribution of hydro-meteorological hazards	Data collection and evaluation	Fieldwork and / or GIS, data analysis, time series analysis	-	Prof. Glade
Risk mapping and risk assessment in Austria and / or Eastern Europe	Literature review	Literature review	-	Prof. Glade, PD Dr. Mergili
Quantitative analysis of natural hazards (e.g., economic impacts in selected regions, historical evolution) e.g. Lower Austria, Romania, Italy	data analysis	GIS or time series analysis	-	Prof. Glade
Fluvial Systems: Human Influence, Flood, Role of Vegetation, Fingerprinting				
Human influence on fluvial systems (various topics possible), especially geomorphological consequences, human environmental interactions, landscape change, limnic habitats	Numerical modeling, mapping, empirical field work, literature work	GIS, field and laboratory methods, literature reviews	NP Thayatal	Dr. Pöppl, Prof. Glade,
River engineering in Austria (various topics possible), e.g. histor. Development, change of rivers etc.	Literature work, mapping work	Literature review, GIS	NP Thayatal	Dr. Pöppl, Prof. Glade
Flood in Austria (different topics possible), e.g. historical development, consequences for the human system, etc .; also spatial-temporal modeling possible for selected	Literature work, mapping work, numerical modeling	Literature review, GIS, numerical modeling	NP Thayatal	Dr. Pöppl, Prof. Glade

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watercourses				
The role of vegetation in fluvial geomorphology	Literature work, mapping work	Literature evaluations, mapping work	NP Thayatal	Dr. Pöppl, Prof. Glade
Sediment Fingerprinting: Chemically tracing sediments through the landscape	Fieldwork, lab analysis and statistical modelling	Fieldwork, lab analysis and statistical modelling	PHYTO PRINT	Dr. Kraushaar
Soil and soil erosion: case studies in different ecosystems and method specifications				
Soil erosion (different topics possible)	Literature, mapping, fieldwork, lab analysis (depending)	Literature, mapping, fieldwork, lab analysis (depending)	BAW	Prof. Glade, Dr. Pöppl, Dr. Kraushaar
Biogeomorphology: Sukzession and erosion measurements in the glacier forefield	Field- and lab work	Field- and labwork, statistical analysis	PHUSICOS	Dr. Kraushaar
Soil erosion and landscape change in the Petzenkirchen area	Data collection and evaluation	Fieldwork and data analysis, numerical modeling	BAW	Dr. Pöppl
Soil erosion in the Thayatal National Park (including mitigation measures)	Data collection and evaluation	Fieldwork and data analysis, numerical modeling	NP Thayatal	Dr. Pöppl
Soil development in the pro glacial: All podzols?	Field- and lab work	Field- and labwork, statistical analysis	PHUSICOS	Dr. Kraushaar
Urban Gardening: City soils under use – challenges and hazards	Field- and lab work	Field- and labwork, statistical analysis	-	Dr. Kraushaar
Drone versus Laserscan – How micro scale soil erosion can be measured better	Field- and lab work	Field- and labwork, modelling, statistical analysis	PHUSICOS	Dr. Kraushaar

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Infiltration methods – comparison of methods on different vegetation cover in a high mountain environment	Field- and lab work	Field- and labwork, statistical analysis	PHUSICOS	Dr. Kraushaar
Remote sensing of vegetation succession in the pro glacial in relation to soil erosion	Field- and lab work	Field- and GISwork, modelling	PHUSICOS	Dr. Kraushaar
Roman cisterns in the Mediterranean – Using them as sediment archives	Field- and labwork,	Field- and labwork,	Pot. Project with Uni. Gießen: Prof. Fuchs	Dr. Kraushaar
Water analysis in regard to Geomorphology				
Permafrost degradation monitoring through water analysis	Field- and lab work	Field- and labwork, statistical analysis	GeoHype, AlpSenseBench	Dr. Kraushaar
Geomorphology in general: theory, didactics, narratives, processes, thresholds				
The Geomorphological Theory - Quo Vadis?	literature review	Literature review	-	Prof. Glade, Dr. Pöppl
Changes of geomorphologic processes in space and time	Depending on your interest	Depending on your interest	By arrangement	Alle
Specialist Didactic Approaches (Geomorphology, Geoecology, Geo Risks, Environmental Education)	Literature work, empirical work	Depending on your interest	-	Dr. Pöppl
Critical thresholds in geom. systems	literature review	Literature review	-	Prof. Glade
Critical Physical Geography: Historical narratives in Physical Geography and implications for recent research approaches	Literature work	Literature analysis	-	Dr. Kraushaar
Critical Physical Geography: Potential of increased collaberations between human- and critical physical geography	Literature work	Literature analysis	-	Dr. Kraushaar