

# Conference Agenda

MONDAY, JUNE 10

7:30 - 8:30

Grand Ballrooms Lobby

Check-in

8:30 - 8:40

Grand Ballrooms

Welcome: Dr. Paul Johnson, President, Colorado School of Mines

8:40 - 8:50

Grand Ballrooms

Meeting Logistics and Announcements: Paul Santi

8:50 - 10:10

Grand Ballrooms

Processes/Mechanics

Moderator: Jeff Coe

8:50	N Gray	United Kingdom	Erosion-deposition waves in geophysical mass flows and the spontaneous formation of levees and surges
9:20	R Iverson	United States	Valid debris-flow models must avoid hot starts
9:40	A Mangeney	France	Simulation of mechanical processes in debris flows and of their signature on the generated seismic signal

10:10 - 10:30

Grand Ballrooms

Break

10:30 - 11:30

Grand Ballrooms

Processes/Mechanics II

Moderator: Jason Kean

10:30	N Hotta	Japan	How does particle-size segregation affect the fluidity of multi-granular debris flows?
10:50	A Ghasemi*	United States	Erosion by experimental debris flows: particle size effects (*presented by K. Hill)
11:10	K Cui	China	Numerical investigation of particle size segregation in saturated granular flows using CDF-DEM coupling approach

11:30 - 1:00

On your own

Lunch Break

1:00 - 3:00

## Monitoring, Detection, Warning

Moderator: Liz Bowman

1:00	K Allstadt	United States	Overcoming barriers to progress in seismic monitoring and characterization of debris flows and lahars
1:30	B McArdell	Switzerland	Monitoring, detection, and early warning systems for debris flows: experience from Switzerland
2:00	M Murasawa	Japan	Observations on the development and decay processes of debris flows
2:20	V Coviello	Italy	Deciphering sediment dynamics in a debris flow catchment: insights from instrumental monitoring and high-resolution topography
2:40	Y Huang	Taiwan	The vibrational characteristics of debris flow in Taiwan

**3:00 - 3:20**

**Grand Ballrooms**

**Break**

**3:20 - 5:00**

**Grand Ballrooms**

## Monitoring, Detection, Warning II

Moderator: Mark Reid

3:20	M Hürlimann	Spain	Monitoring of rainfall and soil moisture at the Rebaixader catchment (Central Pyrenees)
3:40	K Barnhart	United States	Topographic change detection at Chalk Cliffs, Colorado, USA, using airborne lidar and UAS-based Structure-from-Motion photogrammetry
4:00	X Guo	China	Real-time observation of an active debris flow watershed in the Wenchuan Earthquake area, China
4:20	G Nagl*	Austria	Measurements of velocity profiles in natural debris flows: a view behind the muddy curtain (*presented by R. Kaitna)
4:40	D Laigle	France	Implementation of an integrated management strategy to deal with landslide triggered debris flows: the Valloire case study (Savoie, France)

**6:00 - 8:00**

**Geology Museum**

**Reception**

**T U E S D A Y , J U N E 1 1**

**8:00 - 9:40**

**Grand Ballrooms**

## Experiments/Modeling

Moderator: Marcel Hurlimann

8:00	E Bowman	United Kingdom	Particulate approaches to experimental and numerical modelling of debris flows
8:30	D George	United States	Seamless numerical simulation of a hazard cascade in which a landslide triggers a dam-breach flood and consequent debris flow.
9:00	D Rickenmann	Switzerland	Small scale debris-flow experiments on run-up height
9:20	K Adams*	United States	Reproducibility of debris flow fan physical modeling experiments (*presented by T. Wasklewicz)

**9:40 - 10:00**

## Break

10:00 - 11:20

Grand Ballrooms

### Experiments/Modeling II

Moderator: Mark Reid

10:00	R Baum	United States	Constraining parameter uncertainty in modeling debris-flow initiation during the September 2013 Colorado Front Range storm
10:20	H Tsunetaka	Japan	Experimental examination for influence of debris-flow hydrograph on development processes of debris-flow fan
10:40	C Scheidl*	Austria	Debris flow behavior in super- and subcritical conditions (*presented by B. McArdell)
11:00	M Kobiyama	Brazil	Debris-flow hazard investigation with Kanako-2D in a rural basin, Alto Feliz municipality (Brazil)

11:20 - 12:45

On your own

## Lunch Break

12:45 - 2:05

Grand Ballrooms

### Role of Disturbance (Fire/Climate Change/Earthquake/Logging)

Moderator: Dieter Rickenmann

12:45	F Imaizumi	Japan	Effects of terrain on temporal changes in susceptibility of debris flows and associated hydrogeomorphic processes after forest harvesting
1:15	L McGuire	United States	Looking through the window of disturbance at post-wildfire debris flow hazards
1:45	P Santi	United States	Rainfall intensity limitation and sediment supply independence of post-wildfire debris flows in the western U.S.

2:05 - 2:20

Grand Ballrooms

## Break

2:20 - 3:20

Grand Ballrooms

### Role of Disturbance (Fire/Climate Change/Earthquake/Logging) II

Moderator: Yoshifumi Satofuka

2:20	F Liu	United States	The debris flows and mitigation systems after the 2008 Wenchuan earthquake
2:40	J Keaton	United States	Overview of geotechnical effects of the January 9, 2018, debris-flow and flash-flood disaster in Montecito, California
3:00	P Nyman	Australia	A novel approach for determining risk of water supply disruptions due to post-wildfire debris flows

Posters for Tuesday, June 11 3:20 - 6:30

## Experiments/Modeling

M Arai	Japan	Influence of momentum correction factor and friction factor on flow models of debris-flow related to flow surface deformation
E Bessette-Kirton	United States	An evaluation of debris-flow runout model accuracy and complexity in Montecito, California: Towards a framework for regional inundation-hazard forecasting
J Du	China	Discrete-element investigation of granular debris-flow runup against slit structures
M Fujita	Japan	A method for predicting debris-flow occurrence based on a rainfall and sediment runoff model
Y Hasegawa	Japan	Woody debris blocking conditions at bridges in mountainous streams
J Hina	Japan	Flume experiments and numerical simulation focused on fine sediments in stony debris flow
L Huang	Taiwan	On the regression of velocity distribution of debris flows using machine learning techniques
T Itoh	Japan	Experimental evaluation for peak and temporal changes in debris-flow initiation processes
C Jan*	Taiwan	Correlation between the slump parameters and rheological parameters of debris-flow (*presented by L. Dey)
H Kisa	Japan	Concentration distribution in debris flow consisting of particles with two different sizes
K Lee	South Korea	Numerical analysis on the behavior of the debris flow and impact force on check dam
A Leonardi	Italy	Impact load estimation on retention structures with the discrete element method
S Li	China	Debris-flow deposition: effects of fluid viscosity and grain size
X Li	United States	Regional-scale modelling of liquefaction-induced shallow landslides in unsaturated slopes
N Matsumoto*	Japan	Flume experiment on the influence of particle size distribution on sediment capturing efficiency of open-type steel Sabo dams (*presented by T. Uchida)
K Nakatani	Japan	Debris-flow behavior containing fine sediment considering phase shift
B Nguyen*	South Korea	Effect of rheological properties on debris-flow intensity and deposition in large scale flume experiment (*presented by Y. Kim)
Y Nishiguchi*	Japan	Long travel distance of landslide-induced debris flow (*presented by T. Uchida)
G Pinzón	Colombia	Submerged planar granular column collapse: fluid fluxes at the collapsing granular front
Y Sakai	Japan	Numerical simulation of debris flows focusing on the behavior of fine sediment
C Santos Corrêa	Brazil	Possibilities and limitations for the back analysis of an event in mountain areas on the coast of São Paulo State, Brazil using RAMMS numerical simulation
L Sarno	Italy	Optical measurements of velocity and of solid volume fraction in fast dry granular flows in a rectangular chute
T Uchida	Japan	Numerical simulation for evaluating the phase-shift of fine sediment in stony debris flows
Y Yamazaki	Japan	Run out processes of sediment and woody debris resulting from landslides and debris flow
A Youberg	United States	Comparison of an empirical and a process-based model for simulating debris-flow inundation following the 2010 Schultz Fire in Coconino County, Arizona, USA

## Monitoring, Detection, Warning

S Beason	United States	Forecasting and seismic detection of debris flows in pro-glacial rivers at Mount Rainier National Park, Washington, USA
S Eu	South Korea	Examining the impact force of debris flow in a check dam from small-flume experiments
J Huebl*	Austria	Monitoring and modeling of debris-flow surges at the Lattenbach creek, Austria (*presented by R. Kaitna)
T Itoh	Japan	Debris flow monitoring using load cells and pressure sensors on Sakurajima Island
A Michel	United States	Taking the pulse of debris-flows: Extracting debris-flow dynamics from good vibrations in southern California and central Colorado
T Nagayama	Japan	Monitoring of sediment runoff and observation basin for sediment movements focused on active sediment control in Jo-Gan-Ji River
R Palau	Spain	Debris-flow early warning system at regional scale using weather radar and susceptibility mapping
F Rengers	United States	Real-time monitoring of debris-flow velocity and mass deformation from field experiments with high sample rate lidar and video
J Smith	United States	Exploring controls on debris-flow surge velocity and peak discharge at Chalk Cliffs, Colorado, USA
Y Takahashi	Japan	Dynamic characteristics of extreme superelevation of debris flows observed by laser profile scanners in Sakura-jima volcano, Japan
H Tian	China	Monitoring and early warning of debris-flow in an earthquake impacted area, Baishahe catchment, southwest China
M Wenner	Switzerland	Deciphering debris-flow seismograms at Illgraben, Switzerland

## Processes/Mechanics

T Kudo	Japan	The role of topography on the volume of material eroded by debris flows
D Liu	China	Numerical investigation of deposition mechanism of submarine debris flow
K Miyamoto	Japan	Compressibility of solid phase of debris flow and erosion rate
R Moss	United States	Commonalities between debris flows and flow failures
N Usuki	Japan	Soil characteristics of long-traveling landslides and a hybrid model to predict travel distance
S Yang	China	The research on the movable solid materials under seepage flow effect in debris flow source area

W E D N E S D A Y , J U N E 1 2

8:00 - 9:40

Grand Ballrooms

### Case Studies/Hazard Assessment

Moderator: Liz Bowman

8:00	S Lukashov*	United States	Post-fire debris flows of 9 January 2018, Thomas Fire, southern California: Initiation areas, precipitation and impacts (*presented by J. Lancaster)
8:30	A Densmore	United Kingdom	Making sense of avulsions on debris-flow fans
9:00	J Farrell*	New Zealand	Debris flow risk management in practice: a New Zealand case study (*presented by T. Davies)
9:20	D Bonneau	Canada	Characterizing debris transfer patterns in the White Canyon, British Columbia with terrestrial laser scanning

9:40 - 10:00

## Break

10:00 - 11:20

Grand Ballrooms

### Case Studies/Hazard Assessment II

Moderator: Marcel Hurlimann

10:00	R Kaitna	Austria	Hydro-meteorological trigger conditions of debris flows in Austria
10:20	S Zubrycky	Canada	Preliminary calibration of a numerical runout model for debris flows in Southwestern British Columbia
10:40	C Graf	Switzerland	An overview of a decade of applied debris-flow runout modeling in Switzerland: challenges and recommendations
11:00	S Rathburn	United States	Historical debris-flow occurrence in Rocky Mountain National Park, Colorado, USA

11:20 - 12:45

On your own

## Lunch Break

12:45 - 2:05

Grand Ballrooms

### Case Studies/Hazard Assessment III

Moderator: Dieter Rickenmann

12:45	M Chard	United States	Pound of preparedness is worth a pound of debris
1:15	M Jakob	Canada	Debris-flow hazard assessments -- a practitioner's view
1:45	T Tsao	Taiwan	Debris flow building damage level and vulnerability curve – A case study of a 2015 Typhoon event in northern Taiwan

2:05 - 2:20

Grand Ballrooms

## Break

2:20 - 3:20

Grand Ballrooms

### Case Studies/Hazard Assessment IV

Moderator: Yoshifumi Satofuka

2:20	B Carvalho Vieira*	Brazil	Debris flow in southeast Brazil: susceptibility assessment for watersheds and vulnerability assessment of buildings (*presented by V. Dias)
2:40	P Duhart	Chile	The Santa Lucía landslide disaster, Chaitén-Chile: origin and effects
3:00	M Reid	United States	Debris-flow initiation promoted by extension of a slow-moving landslide

Posters for Wednesday, June 12 3:20 - 6:30

### Case Studies/Hazard Assessment

	J Bauer	United States	Debris flows in the North Pacolet River valley, Polk County, North Carolina, USA - case studies and emergency response
	M Bernard	Italy	Characteristics of debris flows just downstream the initiation area on Punta Nera cliffs, Venetian Dolomites

M Boreggio*	Italy	Simulation of the debris flow occurred the 15 August 2010 on Rio Val Molinara Creek (northeast Italian Alps) (*presented by C. Gregoretti)
N Calhoun	United States	Post-fire rockfall and debris-flow hazard zonation in the Eagle Creek fire burn area, Columbia River Gorge, Oregon: A tool for emergency managers and first responders
F Camiré	Canada	Hydrogeomorphology and steep creek hazard mitigation lexicon: French, English and German
K Cato	United States	Complexity of a debris-flow system at Forest Falls, California
J Coe	United States	A 4000-year history of debris flows in north-central Washington State, USA: preliminary results from trenching and surficial geologic mapping at the Pope Creek fan
J Curran	United States	Modeling frequent debris flows to design mitigation alternatives
R Das	United States	Application of knowledge-driven method for debris-slide susceptibility mapping in regional scale
V Dias	Brazil	The morphology of debris flow deposits from a 1967 event in Caraguatatuba, Serra do Mar, Brazil
G Felling*	United States	Post-fire debris-flow hazard analysis for interstate 80, Truckee River Canyon, near the California-Nevada state line, USA (*presented by S. McCoy)
J Gartner	United States	Debris-flow risk assessment and mitigation design for pipelines in British Columbia, Canada
J Hirschberg	Switzerland	Analysis of rainfall and runoff for debris flows at the Illgraben catchment, Switzerland
Y Hsu*	Taiwan	Debris flow assessment from rainfall infiltration induced landslide (*presented by K. Liu)
A Ikeda	Japan	Study of prediction methods of debris-flow peak discharge
E Jayasekara	Sri Lanka	Evaluation of shallow landslide-triggering scenarios through a physically based approach: A case study from Bulathsinhala area, Sri Lanka
J Keaton	United States	Weather-radar inferred intensity and duration of rainfall that triggered the January 9, 2018, Montecito, California, disaster
J Keaton	United States	Review of contemporary terminology for damaging surficial processes – stream flow, hyperconcentrated sediment flow, debris flow, mud flow, mud flood, mudslide
Y Kim	South Korea	Evaluation of slope stability of Taebaeksan Mountain National Park using detailed soil map
D Lee	South Korea	Estimation of debris-flow volumes by an artificial neural network model
K McCoy	United States	Debris-flow susceptibility mapping in Colorado using Flow-R: calibration techniques and selected examples
T Ohta	Japan	Landslides and debris flows in volcanic rocks triggered by the 2017 Northern Kyushu heavy rain
J Picanço	Brazil	Debris-flow occurrence in granite landscape in south-southeast Brazil
A Pradhan*	South Korea	Hillslope evaluation in the vicinity of the Wolsong nuclear power plant after 12th September 2016 Gyeongju earthquake, South Korea (*presented by Y. Kim)
M Scheickl	Canada	Regional level debris-flow hazard assessment for alpine infrastructure facilities using the 3D numerical high-performance simulation tool FIMT
D Smilovsky	United States	Using satellite radar interferometry to delineate burn area and detect sediment accumulation, 2018 Montecito disaster, California
A Strouth	United States	Quantitative risk management process for debris flows and debris floods: lessons learned in Western Canada

M Sturzenegger	Canada	Semi-automated regional scale debris-flow and debris-flood susceptibility mapping based on digital elevation model metrics and Flow-R software
K Suzuki	Japan	Study on methods for assessing sediment disaster inundation zone in regions with insufficient data: Case study of the Aranayake disaster in Sri Lanka
T Suzuki	Japan	Application of an MPS-based model to the process of debris-flow deposition on alluvial fans
Y Tsai	Taiwan	Numerical modeling of debris flows and landslides triggered by extreme rainfall event
K Yoshino	Japan	Estimating mechanical slope stability to predict the regions and ranges of deep-seated catastrophic landslides
Q Zou	China	Multi-scale hazard assessment of debris flows in eastern Qinghai-Tibet Plateau area

### Engineering/Mitigation

N Harada	Japan	Steel stakes to capture debris-wood on an impermeable type sabo dam
H Hu	China	Flume investigation of the interaction mechanisms between debris flow and slit dams
K Hu	China	Empirical model for assessing dynamic susceptibility of post-earthquake debris flows
W Kane	United States	Flexible debris-flow nets for post wildfire debris mitigation in the western United States
C Morstabilini	Italy	Laboratory tests of an innovative check dam
C Morstabilini	Italy	Application of an innovative, low-maintenance weir to protect against debris flows and floods in Ottone, Italy device.
M Pirulli	Italy	Numerical study of debris flows in presence of obstacles and retaining structures: A case study in the Italian Alps
G Piton	France	Design of a debris retention basin enabling sediment continuity for small events: the Combe de Lancey case study (France)
H Watabe	Japan	Estimation of temporal changes of debris flows and hydraulic model tests of channel works with multi-drop structures

### Role of Disturbance

E Friedman	United States	Relationship between rainfall intensity and debris-flow initiation in a southern Colorado burned area
B Mirus	United States	Conceptual framework for assessing disturbance impacts on debris-flow initiation thresholds across hydroclimatic settings
C Peng*	China	The impact of global warming on the formation of debris flows in an alpine region of southeastern Tibet (*presented by L. Dingzhu)

## T H U R S D A Y , J U N E 1 3

8:00 - 9:40

Grand Ballrooms

### Engineering/Mitigation

Moderator: Jeff Coe

8:00	J Huebl	Austria	From practical experience to national guidelines for debris flow mitigation measures in Austria
8:30	K Ho	Hong Kong	Debris flow mitigation – research and practice in Hong Kong
9:00	N Feiger	Switzerland	Scour and erosion experience with flexible debris flow nets



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9:20	H Chen	China	Predicting debris-flow scour depth downstream from a check dam
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**9:40 - 10:00**

**Grand Ballrooms**

**Break**

**10:00 - 11:20**

**Grand Ballrooms**

**Engineering/Mitigation II**

**Moderator: Jason Kean**

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10:00	S Poudyal	Hong Kong	Review of the mechanisms of debris-flow impact against barriers
10:20	J Chen	China	Debris-flow mitigation measures and an application case in a small-scale watershed in China
10:40	S Choi	South Korea	Roles of barrier location for effective debris flow mitigation: assessment using DAN3D
11:00	N Sanvitale	United Kingdom	Small scale impact on rigid barrier using transparent debris- flow models

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**11:20 - 11:40**

**Grand Ballrooms**

**Conference Wrap Up**

**11:40 - 12:00**

**Grand Ballrooms**

**Presentations and voting for location for DFHM8 in 2023**

**1:45 - 2:00**

**Depart Ben Parker Student Center**

**Debris Flows in Chalk Creek Valley Field Trip Departure**