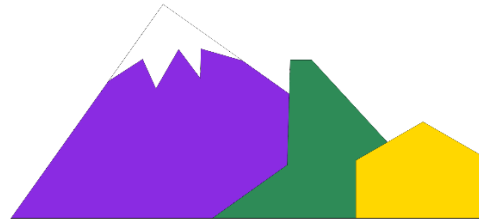




SAMBAND ÍSLENSKRA SVEITARFÉLAGA



International Symposium on Mitigation Measures against Snow Avalanches and other Rapid Gravity Mass Flows



Snow 2019 - Iceland

Co-sponsored by:

Icelandic Avalanche and Landslide Fund, Ofanflóðasjóður

Icelandic Road and Coastal Administration, Vegagerðin

National Power Company of Iceland, Landsvirkjun

University of Iceland, Háskóli Íslands

Icelandic Association of Local Authorities, Samband íslenskra sveitarfélaga

Government Construction Contracting Agency, fsr

Iceland Glaciological Society, JÖRFÍ

International Glaciological Society, IGS

Second Circular

October 2018

The Association of Chartered Engineers in Iceland, vfi will hold an International Symposium on Mitigation Measures against Snow Avalanches and Other Rapid Gravity Mass Flows in Siglufjörður, North Iceland, from April 3rd to April 5th, 2019.



THEME AND BACKGROUND

The symposium seeks to bring together scientists, engineers, architects and representatives of local and central authorities to discuss the state of the art of mitigation measures against snow avalanches and other rapid gravity mass flows. A similar symposium was held in Egilsstaðir, East Iceland in 2008, Snow 2008 - Iceland.

The venue in Siglufjörður was chosen for its scenic location on the Troll peninsula and the ongoing construction of protection measures above the town, due to relatively frequent avalanche cycles threatening the settlement and skiing area. The construction of protection measures started in 1998 and is now at a final stage. Those include three deflecting dams, five catching dams, snow supporting structures and wind baffles. The planning, engineering- and architectural design of the protection measures have been challenging due to the limited area available for the protection dams above town. The geotechnical design of the the supporting structures, founded in relatively loose rock and scree, proved demanding. Additional design aspects calling for consideration have been revealed in recent years. Those include changes in groundwater and snow accumulation on the lee side of the dams, and the durability of the earth reinforcement systems used for steep dam faces.

The skiing area in Siglufjörður was partly relocated from Hólsdalur to Skarðsdalur in 1988, due to repeated avalanche activity destroying the lifts. Recent hazard mapping for the new skiing area revealed unacceptably high risk by the lowest lifts. Permanent protection measures are being considered for the area.

TOPICS

1. RISK MANAGEMENT

- Hazard zoning/risk management in relation to mitigation measures
- Land use planning
- Hazard management in ski areas
- Hazard management for roads, power lines and other infrastructure

2. SOCIETY AND ENVIRONMENT

- Landscape architecture of protection measures
- Legal issues regarding mitigation measures (e.g. rest risk, overload cases, responsibility for maintenance/management and lack thereof)
- Removal/relocation of buildings/infrastructure
- Communication between authorities and inhabitants
- Impact of mitigation measures on the local society (feeling of safety, understanding of rest risk)

3. PLANNING, DESIGN, CONSTRUCTION AND MANAGEMENT OF PROTECTION MEASURES

- Dynamic design principles/criteria for protection measures in the run-out zone such as earthen catching/deflecting dams
- Design and planning of mitigation measures in the release area such as snow supporting structures or snow drift measures
- Management and maintenance of protection measures
- Effects of climate changes on design and planning of mitigation measures
- Hydrological design of protection measures in the run-out zone

4. OBSERVATIONS AND SIMULATIONS OF AVALANCHES

- Field measurements of snow avalanches
- Observations of natural snow avalanches interacting with obstacles
- Laboratory experiments on the interaction of rapid gravity flows and obstacles
- Numerical modelling in the design of protection measures



PROGRAMME

A mixture of oral and poster sessions, interlaced with free time, forms the general framework of the symposium, which is intended to facilitate exchange of scientific information between participants in an informal manner.

Tuesday 2nd of April 2019

17:00 - 18:00 Registration
18:00 - 20:00 Welcome reception

Wednesday 3rd of April 2019

09:00 - 12:00 Morning session - Risk management
– Keynote speaker Michael Bründl
12:00 - 13:00 Lunch
13:00 - 15:00 Afternoon session 1 - Society and environment
– Keynote speaker Arne Instanes
15:00 - 15:20 Coffee break
15:20 - 18:00 Afternoon session 2 - Planning, design, construction and management of protection measures
– Keynote speaker Peter Gauer
20:00 Video-Slides show

Thursday 4th of April 2019

09:00 – 12:00 Morning session - Planning, design, construction and management of protection measures
– Keynote speaker Stefan Margreth
12:00 - 13:00 Lunch
13:00 - 15:00 Afternoon session 1 - Observations and simulations of avalanches
– Keynote speaker Betty Sovilla
15:00 - 15:20 Coffee break
15:20 - 18:00 Afternoon session 2 - Observations and simulations of avalanches
– Keynote speaker Nico Gray
19:30 - 23:00 Gala dinner

Friday 5th of April 2019

09:00 - 17:00 Field excursion

Saturday 6th of April 2019

09:00 - 16:00 Ski mountaineering tour
16:00 - 17:00 Bus to Akureyri airport

ABSTRACT AND PAPER PUBLICATION

Participants intending to present at the symposium are required to submit an abstract or an extended abstract in due time. The extended abstracts will be published in the Symposium Proceedings.

Participants are encouraged to submit manuscripts based on their presentations at the symposium to the journal Cold Regions Science and Technology (www.journals.elsevier.com/cold-regions-science-and-technology). Submissions to the journal will not be contingent on presentation at the symposium, and material presented at the symposium is not necessarily affirmed as being suitable for consideration for the journal.

Abstract guidelines

Participants intending to make a presentation at the symposium are required to submit an abstract or an extended abstract in due time, and there will be both oral and poster presentations. A programme and collection of submitted abstracts will be provided for all participants in the symposium proceedings. Abstracts with maximum length of 200 words should be **submitted before October 31, 2018**. Those who wish, may submit an extended abstract with maximum length four to six A4 pages **before January 31, 2019**.

The symposium proceedings will contain the 200-word abstracts for those who choose not to submit an extended abstract.

Abstract templates are available through the symposium website. Abstract submission and instructions are through the symposium website.



SYMPOSIUM ORGANIZATION

VFI (The Association of Chartered Engineers in Iceland)

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(University of Iceland), Fjóla Guðrún Sigtryggisdóttir (Norwegian University

of Science and Technology, NTNU).

VENUE

The symposium will be held in Siglufjörður, North Iceland. Siglufjörður is at the northern tip of the Troll Peninsula (Tröllaskagi), surrounded on three sides by the N-Atlantic Ocean. The location is ideal for a symposium about avalanche mitigation measures. Siglufjörður and the surrounding rural area has a long history of avalanches and avalanche catastrophes and an extensive programme for the construction of avalanche protection measures for the town has been ongoing for more than two decades. The symposium will take place at the newly built Sigló Hótel, built into the fisherman's marina in Siglufjörður. Local attractions include the Herring Era Museum (www.sild.is), Heli skiing and the local skiing area in Skarðsdalur.

SYMPOSIUM EXCURSIONS

There will be a symposium field excursion on April 5th to specifically selected sites in the Troll peninsula near Siglufjörður.

SKI MOUNTAINEERING TOUR

A ski mountaineering tour will be arranged on April 6th if weather and snow condition are acceptable. The tour will take place on the Troll peninsula, the exact location will depend on weather. Transportation will be organized from the Sigló Hótel and skiing equipment will be available for participants. Further details will be made available on the conference website.

TRAVEL

International flight arrivals are at the Keflavík International Airport.

Connecting flights to Akureyri Airport with Air Iceland Connect from Reykjavík City Airport, with bus connection with the Keflavík Airport, operate four times a day, see <https://www.airicelandconnect.com>. There is a bus connection between Akureyri and Siglufjörður three times a day, see <https://www.straeto.is>. There will be special connecting buses to Siglufjörður for symposium guests synchronized with the domestic flights landing at Akureyri at 16:55 and 19:40 on Tuesday 1 April 2019. Further information is given on the symposium website.

ACCOMMODATION

Sigló Hótel. Cost per night 21 100 ISK (single room), 23.500 ISK (double room).

For other options. See conference website.

FURTHER INFORMATION

If you wish to attend the symposium, please register your interest online at <http://www.snow2019.is>.



All information regarding this symposium will be updated on the conference website <http://www.snow2019.is>.

IMPORTANT DATES

International Symposium on Mitigation Measures against Snow Avalanches and other Rapid Gravity Mass Flows

- Abstract submission deadline: 31st October 2018
- Notification of abstract acceptance: 15th November 2018
- Early registration deadline: 15th December 2018
- Extended abstract submission deadline: 31st January 2019
- Venue hotel booking deadline: 15th February 2019
- Deadline for full refund: 1st March 2019
- Late registration deadline: 15th March 2019
- Deadline for partial refund: 15th March 2019
- Welcome and icebreaker: 2nd April 2019
- Symposium starts: 3rd April 2019
- Symposium tour: 5th April 2019
- Ski mountaineering tour: 6th April 2019

Some examples of Protection Measures in Iceland



Figure 1. Catching- and deflecting dam in Seyðisfjörður, East Iceland.



Figure 2. Catching- and deflecting dam below Tröllagil gully in Neskaupstaður, East Iceland.



Figure 3. A catching dam and mounds above town of Bolungarvík, Northwest Iceland.



Figure 4. A deflecting dam in Bildudalur, West Iceland.



Figure 6. Catching- and deflecting dams in Siglufjörður.



Figure 5. A deflecting dam and mounds in Seljaland area in Ísafjörður, Northwest Iceland.



Figure 5. Supporting structures in Hafnarhryna above Siglufjörður.

The venue



Figure 7. Sigló Hótel in Siglufjörður.



Figure 8. Siglufjörður.