

Academia Raetica

SWITZERLAND



9th conference

Graubünden forscht

Davos Congress Centre, Hall Aspen

November 8-9, 2024

Mittag der Forschung Science Noon

November 9, 11:45 AM to 2:00 PM

Education and research. **graubünden**

Friday, November 8, 2024

08:00-09:30 Registration & "Znüni"

09:30-10:00 Welcome and opening

Allgöwer, Britta	President Academia Raetica
Favre Accola, Valérie	Vice President of the Cantonal Parliament of Graubünden & Head of Regional Development, Region Prättigau / Davos
Haller Rupf, Barbara	Director Academia Raetica

10:00-10:30 Insights from ETH Studio Davos

Chair: Barbara Haller Rupf

How machine learning improves research in solar physics

Barczynski, Krzysztof	Physikalisch-Meteorologisches Observatorium Davos / World Radiation Center, ETH Zurich
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Machine learning techniques in solar jet detection

Jentgens, Henrik & Moll, Rémy	ETH Zurich ETH Zurich
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ETH Studio Davos: Students aiming high

Bärenfaller, Katja	Swiss Institute of Allergy and Asthma Research (SIAF), University of Zurich
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Scan to read abstracts

10:30-10:45 Break

10:45-11:45 Session 1 (Aspen I) Natural Sciences, Robotics, and Photonics

Chairs: Britta Allgöwer, Academia Raetica & Ruzica Dadic

WSL Institute for Snow and Avalanche Research SLF

Why does a snow scientist bring a saw and black ink on a field trip?

Walet, Melin	WSL Institute for Snow and Avalanche Research SLF
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A century of rewilding

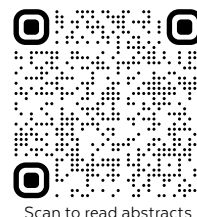
von Büren, Raphael	Swiss National Park
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Quantitative analysis of forest windfall damage using aerial ortho-imagery

Schüssler, Jan	University of Applied Sciences of the Grisons
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Ground-based solar radiation measurements and the study of atmospheric aerosols

Karanikolas, Angelos	Physikalisch-Meteorologisches Observatorium Davos / World Radiation Center
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10:45-12:00 Session 2 (Aspen II) Medicine and Life Sciences

Chairs: Mirjam Schenk, CK-CARE Christine Kühne-Center for Allergy Research and Education &

Willem Van de Veen, Swiss Institute of Allergy and Asthma Research (SIAF)

An allergic twin is different from a healthy one, right?

Schneider, Stephan	Swiss Institute of Allergy and Asthma Research (SIAF), University of Zurich
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Characterising 'sugared' proteins with mass spectrometry

Sun, Xindong	Swiss Institute of Allergy and Asthma Research (SIAF), University of Zurich
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Sprint-Interval-Training under hypoxia in persons with Multiple Sclerosis: A feasibility study

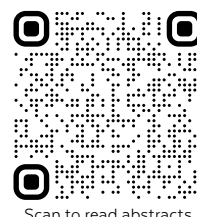
Riegel, Franziska	Kliniken Valens
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Low-level laser therapy in patients with head and neck tumour undergoing radio- or radiochemotherapy

Litscher, Hanna	Kantonsspital Graubünden
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Spatial transcriptomics to study fracture healing in mouse models

Giger, Nico	AO Research Institute Davos
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Scan to read abstracts

11:45-13:00 Lunch

13:00-14:00 Session 3a (Aspen I) Medicine and Life Sciences

Chairs: Katja Bärenfaller, Swiss Institute of Allergy and Asthma Research (SIAF) / University of Zurich &

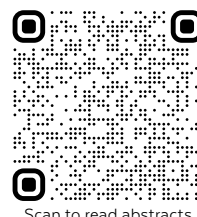
Esther Wehrle, AO Research Institute Davos

Sex bias in intervertebral disc degeneration (IDD) and osteoarthritis (OA) research

Zuncheddu, Daniele	AO Research Institute Davos
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How flexible are neutrophils to opposing signaling in atopic dermatitis?

Diedro, Mel	CK-CARE Christine Kühne-Center for Allergy Research and Education
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Strategies for flow cytometric profiling of BCR immunoglobulin heavy chain isotypes: comparing Fc receptor blocking agents

Ardicli, Ozge Swiss Institute of Allergy and Asthma Research (SIAF)

B cells expressing histamine receptor 1 or 2

Yang, Minglin Swiss Institute of Allergy and Asthma Research (SIAF)

13:00-14:00 Session 4 (Aspen II) Education and Humanities

Chairs: Sog Yee Mok, Pädagogische Hochschule Graubünden & Ana Petrus, University of Applied Sciences of the Grisons

Orbita: a new textbook for teaching Italian in the Canton of Grisons

Giudici, Alberto & Pädagogische Hochschule Graubünden
Manetti, Elisa Désirée Pädagogische Hochschule Graubünden, SUPSI DFA/ASP

Border experiences in the microcosm Graubünden

De Piante Vicin, Paola University of Zurich / Institut für Kulturforschung Graubünden

A comprehensive study of requirements engineering in Switzerland

Moravánszky, Anthea University of Applied Sciences of the Grisons

Development of a test instrument for assessing flexible calculation strategies in third grade math

Viertler, Karin Pädagogische Hochschule Graubünden, FHNW, PHSG



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14:00-14:10 Short break

14:10-14:50 Session 3b (Aspen I) Medicine and Life Sciences

Chairs: Katja Bärenfaller, Swiss Institute of Allergy and Asthma Research (SIAF) / University of Zurich & Esther Wehrle, AO Research Institute Davos

The effect of L-phenylalanine on CD4+ T cell activity

Kulkarni, Abhijeet Swiss Institute of Allergy and Asthma Research (SIAF)

The gut microbiome metabolite heals the skin and gut epithelial barrier and shows anti-inflammatory effects

Pat, Yagiz Swiss Institute of Allergy and Asthma Research (SIAF)

Decellularized extracellular matrix-based hydrogel enhances chondrocyte redifferentiation in vitro and ex vivo

Xu, Jiangyao AO Research Institute Davos



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WORLD ECONOMIC FORUM

Vorschau WEF 2025
Ein Blick hinter die Kulissen für die Davoser Bevölkerung und interessierte Gäste

Eine Informationsveranstaltung der Wissensstadt Davos
moderiert von Urs Gredig
mit WEF-Geschäftsleitungsmitglied Alois Zwinggi

Mittwoch, 20. November 2024
um 19.30 Uhr in der Aula SAMD, Guggerbachstrasse 2, 7270 Davos
Der Eintritt ist kostenlos. Wir freuen uns auf Sie!

www.wissensstadt.ch
Wissensstadt Davos, Bergstrasse 1, Postfach, 7270 Davos Platz, info@wissensstadt.ch

14:10-14:50 Session 5 (Aspen II) Unveiling eosinophilic esophagitis: Our journey to understand a rare disease

Chairs: Sibylle Grad, AO Research Institute Davos &

Milena Sokolowska, Swiss Institute of Allergy and Asthma Research (SIAF)

Bel imam, Manal

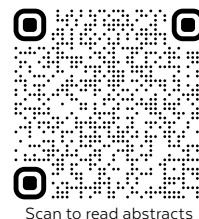
Swiss Institute of Allergy and Asthma Research (SIAF)

Du, Hang

Swiss Institute of Allergy and Asthma Research (SIAF)

Marchi, Nicolò

CK-CARE Christine Kühne-Center for Allergy Research and Education



14:50-15:00 Short break

15:00-15:30 Panel discussion

Responsible research: Ensuring ethical standards in science

Moderation: Barbara Haller Rupf, Academia Raetica

Bschir, Karim

University of St. Gallen (HSG)

Marxer, Curdin

University of Applied Sciences of the Grisons, DAViS

Ruttner-Jansen, Pia

WSL Institute for Snow and Avalanche Research SLF

Zuncheddu, Daniele

AO Research Institute Davos

15:30-15:45 Break

15:45-16:45 Session 6 (Aspen I) Medicine and Life Sciences

Chairs: Sibylle Grad, AO Research Institute Davos &

Willem Van de Veen, Swiss Institute of Allergy and Asthma Research (SIAF)

A mechanical stimulated 3D in vitro model for treating osteoarthritis

Meng, Huan

AO Research Institute Davos

High-throughput proteomics in lymphoma - Mechanistic insights and clinical applications

Chatterjee, Lopamudra

Swiss Institute of Allergy and Asthma Research (SIAF)

Metabolic regulation of epithelial RIG-I signaling in viral exacerbations of asthma

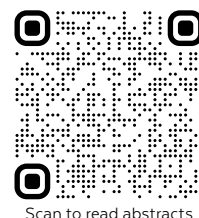
Radzikowska, Urszula

Swiss Institute of Allergy and Asthma Research (SIAF)

Developing a new platform for drug delivery

Simboro, Hadja

CK-CARE Christine Kühne-Center for Allergy Research and Education



15:45-17:00 Session 7 (Aspen II)

Natural Sciences, Robotics, and Photonics

Chairs: Hannes Merbold, University of Applied Sciences of the Grisons &

Matthias Müller, Pädagogische Hochschule Graubünden

Monocular visual odometry

Seeli, Mirco

University of Applied Sciences of the Grisons

Davos - Digital analysis of townscapes in GIS

Hänni, Oliver

University of Applied Sciences of the Grisons

Avalanche safety for roads: Probability maps of avalanche run-out distance

Glaus, Julia

WSL Institute for Snow and Avalanche Research SLF

Avalanche safety for roads: Mapping and monitoring snow depth distribution in an avalanche release area

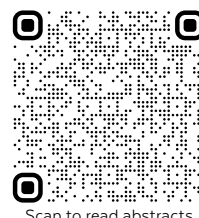
Ruttner-Jansen, Pia

WSL Institute for Snow and Avalanche Research SLF

Solid Geometry Modelling: 3D printing helps to find more than one solution

Weißing, Benjamin

Free University of Bozen-Bolzano



17:15-19:15 Aperitif, guided tour of the ice stadium Davos, ice stock sport*

19:30 Conference dinner at Restaurant 1921 at ice stadium Davos*

* not public

Saturday, November 9, 2024

09:00-10:00 Registration & "Znüni"

10:00-10:15 Opening

10:15-11:45 Session 8 (Aspen I) Vielfältige Forschung - Vorträge auf Deutsch

Chairs: Oscar Eckhardt, Institut für Kulturforschung Graubünden &

Peter Bebi, WSL Institute for Snow and Avalanche Research SLF

Bergwälder als Bedeutungsträger in der Bündner Literatur des 20. Jahrhunderts

Schmid, Michael D. University of Zurich, Institut für Kulturforschung Graubünden

Buchdrucker in Gebirgswäldern im Kanton Graubünden: Herausforderungen und Chancen

Banzer, Theresa WSL Institute for Snow and Avalanche Research SLF

Bergwald im Wandel: Analyse der räumlichen Verschiebung der Waldverjüngung über die Zeit

Schmid, Manuel Bern University of Applied Sciences, School of Agricultural, Forest and Food Sciences HAFL

Bestimmte Immunzellen unterscheiden Patienten mit infizierten Knochenbrüchen von geheilten Kontrollpersonen

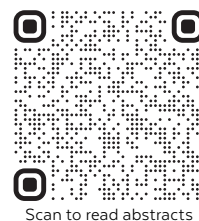
Fehrenbach, Pia AO Research Institute Davos

Vergleich maschineller Lernalgorithmen zur Verhaltensklassifizierung von Rothirschen mit Beschleunigungsdaten

Bar-Gera, Benjamin Zurich University of Applied Sciences

Das (r) der oberen Surselva: ein unliebsamer regionaler und sozialer Marker im Schweizerdeutschen?

Büchler, Andrin Pädagogische Hochschule Graubünden



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10:15-11:45 Session 9 (Aspen II) Diverse research - Talks in English

Chairs: Lucas Lombriser, University of Geneva &

Helena Jambor, University of Applied Sciences of the Grisons, DAViS

Driving forces of land cover change in the Kauner valley and Martell valley since the 1950s

Sartori, Mattia EURAC Research

Evaluating the efficacy of pretrained large language models for automated ICD-10 diagnosis coding

Marxer, Curdin University of Applied Sciences of the Grisons, DAViS

What links volcanic and solar eruptions?

Jörimann, Andrin Physikalisch-Meteorologisches Observatorium Davos / World Radiation Center

How common food emulsifiers are breaking down your gut's defense

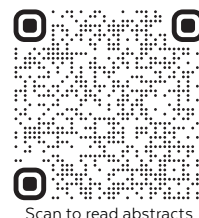
Yazici, Duygu Swiss Institute of Allergy and Asthma Research (SIAF)

Is your sports routine protecting your health or pushing your immune system to its limit?

Barletta, Elena Swiss Institute of Allergy and Asthma Research (SIAF)

Effects of exercise-based cardiac rehabilitation on body composition of cardiovascular patients

Petrasch, Gloria Hochgebirgsklinik Davos



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We thank our sponsors:



MITTAG DER FORSCHUNG / SCIENCE NOON

11:45-12:00 Eröffnung «Mittag der Forschung» / Opening "Science Noon"

Wilhelm, Philipp

Mayor of the Municipality of Davos

12:00-14:00 Ausstellung der Forschungsinstitute, Hochschulen und Kliniken

Exhibition of research institutes, universities and clinics

AO Research Institute, CK-CARE AG, CSEM Landquart, Fachhochschule Graubünden, Hochgebirgsklinik Davos AG, Institut für Kulturforschung Graubünden, Pädagogische Hochschule Graubünden, Physikalisch-Meteorologisches Observatorium Davos / Weltstrahlungszentrum, Psychiatrische Dienste Graubünden, Schweizerisches Institut für Allergie- und Asthmaforschung, Spital Davos / Davos Sports & Health, SUPSI Landquart Rehabilitation and Exercise Science Laboratory (RES Lab), Theologische Hochschule Chur, UNESCO Welterbe Tektonikarena Sardona

14:00-15:30 Session 10 (Aspen I) Vielfältige Forschung - Vorträge auf Deutsch

Chairs: Barbara Haller Rupf, Academia Raetica & David Niederseer, Hochgebirgsklinik Davos

«Unheimliche Eistrümmer» - Oder: Wie liest man eine historische Beschreibung des Morteratschglotzers in Zeiten der Klimaerwärmung?

Bantli, Jann Duri Institut Kulturen der Alpen (Universität Luzern), Institut für Kulturforschung Graubünden

Die Strahlungsbilanz über Schnee im Gebirge

Mödl, Anja École Polytechnique Fédérale de Lausanne, WSL Institute for Snow and Avalanche Research SLF

Der Klimawandel lässt alpine Wiesen früher spriessen

Zehnder, Michael WSL Institute for Snow and Avalanche Research SLF

Der Einfluss von Föhn auf kardiovaskuläre Parameter

Hanselmann, Selina Private University in the Principality of Liechtenstein

Proteomik minimalinvasiver Hautproben - Neue Wege in der personalisierten Dermatologie

Gessner, Philipp Swiss Institute of Allergy and Asthma Research (SIAF)

Auswirkungen von Achtsamkeitsübungen auf die mentale Gesundheit, Lebensqualität und Risikofaktoren bei kardiovaskulären Patienten

Brito da Silva, Hadassa Hochgebirgsklinik Davos



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14:00-15:30 Session 11 (Aspen II) Diverse research - Talks in English

Chairs: Britta Allgöwer, Academia Raetica & David Schmid, CSEM

Assessing snow water equivalent reconstruction using satellite data and hydrological models in alpine regions

Bozzoli, Michele EURAC Research, University of Trento

Spatiotemporal variability of turbulent fluxes in snow-covered mountain terrain

Engbers, Rainette WSL Institute for Snow and Avalanche Research SLF

Exploring the relationship between mechanical forces and biological outcome in a cartilage model

Mecchi, Laura AO Research Institute Davos

Innovative bone materials promote bone formation and simultaneously reduce the inflammatory response

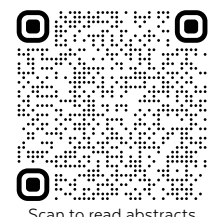
Ardicli, Sena Swiss Institute of Allergy and Asthma Research (SIAF)

Analysis of eligibility of the S1 corridor for the trans-sacral screw placement in geriatric patients

Polt, Maksym Kantonsspital Graubünden

A CRISPR-based assay for the detection of monoclonal antibodies

Del Giovane, Stefano CSEM



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15:30-15:45 Break

15:45-16:30 Keynote

From Graubünden to NASA: Searching for life in the outer solar system

Kehl, Florian

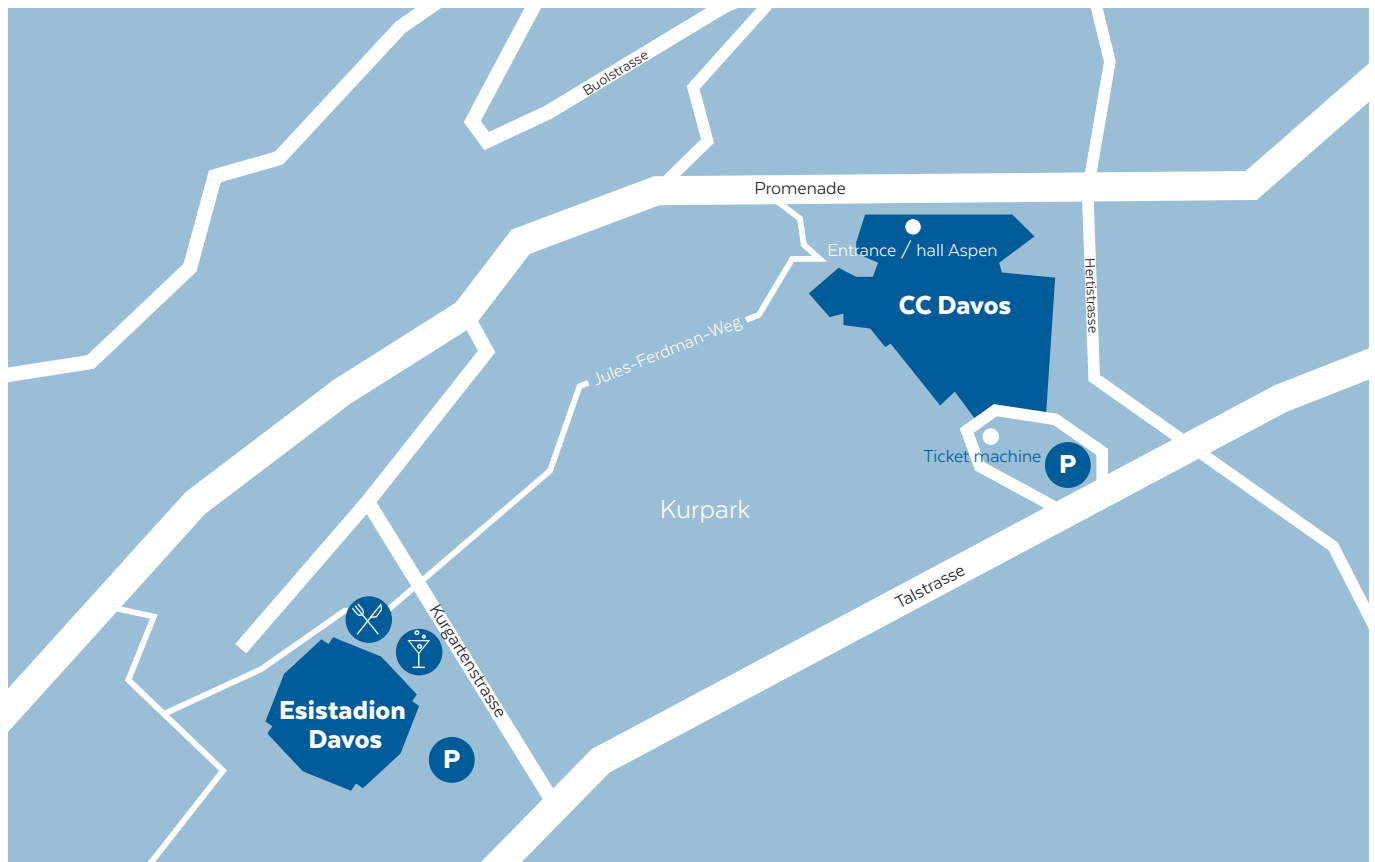
University of Zurich, ETH Zurich

16:30-17:00 Recognition of recent PhD graduates and conference awards for the best scientific presentations

17:00 Aperitif

Information around the conference

“Graubünden forscht” takes place at the Congress Centre Davos, hall Aspen, Promenade 90, Davos Platz. Use the main entrance at Promenade. Public parking is accessed from Talstrasse. Buy discounted parking tickets (1 day: CHF 8.00, 2-3 days: CHF 10.00) by using the ParkingPay app. Select “Davos Platz”, zone “13 Kongress”, and “Bewilligung”.



Visitor Registration: gr-forscht.ch/anmeldung-besucher

Welcome Desk

Friday, November 8, 08:00-17:00

Saturday, November 9, 2024, 09:00-17:00

Aperitif, Friday, November 8, 17:15

(not public) at Eisstadion Davos (Ice Stadium Davos)

Conference Dinner, Friday, November 8, 19:30

(not public) at Restaurant 1921 (Eisstadion Davos), Kurgartenstrasse 6, 7270 Davos. Public parking in front.

Conference Coordinator

Daniela Heinen

daniela.heinen@academiaractica.ch

phone +41 81 410 60 84

Conference Website

www.gr-forscht.ch

Hospital

Spital Davos, Promenade 4, Davos Platz

phone +41 81 414 88 88

Pharmacy

Amavita Apotheke Flüela

Bahnhofstrasse 1, Davos Dorf, phone +41 58 878 11 20

Opening hours: 08:00-18:30 (Saturday: 08:00-18:00)

Amavita Apotheke Kongress

Promenade 50, Davos Platz, phone +41 58 878 10 50

Opening Hours: 08:00-12:30, 13:30-18:30

(Saturday 08:00-17:00)

Public Transport

Busses 301, 303, and 304 stop at “Kongresszentrum Davos”.

For timetables, see www.sbb.ch.

Taxi

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Gotschna Taxi, phone +41 81 420 20 20

Luigi Taxi, phone +41 79 218 30 70

Wissenschaftsquiz am Samstag, 9. November

Nutze die Gelegenheit, dein Wissen zu testen! Unter den Teilnehmerinnen und Teilnehmern, welche die meisten Fragen zu den Vorträgen in den Sessions 8 bis 11 korrekt beantworten, verlosen wir attraktive Preise. Wähle aus drei möglichen Antworten die richtige aus. Der Hauptpreis ist eine **SAISONKARTE FÜR DEN WINTER 2024/25 FÜR ZWEI PERSONEN IM SKIGEBIET SLOWMOUNTAIN SCHATZALP-STRELA IM WERT VON CHF 660.00.**

Zur Teilnahme scanne bitte den QR-Code oder besuche diesen Link: <https://app.sli.do/event/p3HhpdU45qEWvvm4BGMKob>. Um die Fragen zu beantworten, wähle die entsprechende Session (8 bis 11) aus. Das Onlinequiz ist nur während der Sessions geöffnet. Eine Vorschau auf die Fragen findest du unter dem jeweiligen Abstract: <https://gr-forscht.ch/abstracts>. Die Gewinnerinnen und Gewinner werden bis zum 25. November per E-Mail benachrichtigt.

Science Quiz on Saturday, November 9

Take the opportunity to test your knowledge! Among the participants who answer the most questions correctly from the talks in sessions 8 to 11, we will be giving away attractive prizes. Choose the correct answer from the three options provided. The grand prize is a **SEASON PASS FOR WINTER 2024/25 FOR TWO PEOPLE AT THE SLOWMOUNTAIN SCHATZALP-STRELA SKI AREA, VALUED AT CHF 660.00.**

To participate, please scan the QR code or visit this link: <https://app.sli.do/event/p3HhpdU45qEWvvm4BGMKob>.

To answer the questions, select the respective session (8 to 11). The online quiz is only open during the sessions. You can find a preview of the questions under each respective abstract: <https://gr-forscht.ch/en/abstracts>.

Winners will be notified via email by November 25.



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