



VAO Symposium Kaprun

02. – 04. April 2025

Program and time schedule

Mission Statement

The **Virtual Alpine Observatories (VAO)** is a **network of 12 European Alpine Observatories**, including high alpine research facilities. The network **aims to advance interdisciplinary collaboration** embracing **Atmosphere, Cryosphere, Hydrosphere, Biosphere, Earth Surface, Lithosphere and Human-Environment interaction**. This collaboration is the key to a holistic understanding of the Alps and high mountains in a changing climate and environment and features **cross-border coordinated research**. The Alps are a **time machine for climate change** because they are warming twice as fast as European lowlands. Our combined research serves to develop **models and predictions** that help to understand the **Future Alpine Environment**. Our combined action provides the base for **knowledge-based decisions for communal, national and international policy makers**. The **vertical integration of all Alpine spheres** is central to this endeavor, offering a unique approach to **make use of our combined transdisciplinary knowledge**.

VAO Symposium

Every two years, the **VAO Symposium facilitates the exchange** of the latest research findings and future collaborative research pursuits among members and interested individuals. The symposium **emphasizes productive interdisciplinary collaboration** among those working in the Atmosphere, Cryosphere, Hydrosphere, Biosphere, Relief, and Lithosphere fields. For this we focus more on **transdisciplinary workshops** than on individual talks and **aim to develop future research ideas and projects over two days**. The outcomes of the symposium will guide the **network's direction and impact in the coming years**.

The VAO Symposium is planned as a 48-hour event in the beautiful setting of the castle in Kaprun. The conference starts and ends at midday to allow participants to travel on the same day.



Zell am See- Kaprun in Winter © Zell am See-Kaprun Tourismus



Kaprun and the Kitzsteinhorn in Winter © EXPA FEI



Castle Kaprun in Winter © Zell am See-Kaprun Tourismus

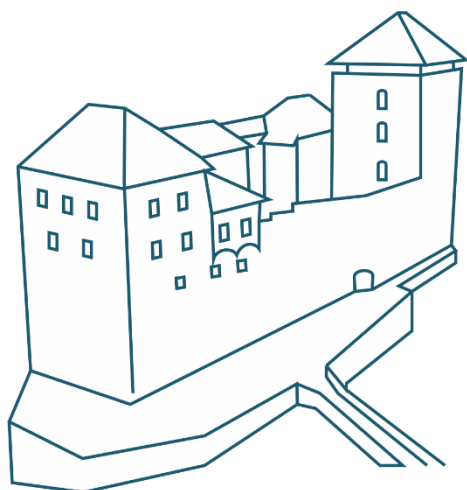


Castle Kaprun in Winter © Zell am See-Kaprun Tourismus/Mairitsch

Program overview

April 2nd, 2025 (Wednesday)

11:15 – 12:00	Knight Hall	Opening Ceremony
12:00 – 13:00	Knight Hall	Podiumsdiskussion Klimawandel & Naturgefahren im Alpenraum (German)
13:00 – 13:45	Foyer	<i>Small Lunch Break with Sandwiches and Drinks</i>
13:45 – 16:30	Knight Hall	Challenges of VAO Mountain Research in a changing climate – Keynote Presentations (part 1)
16:00 – 18:00	Gallery Hall	Poster Sessions & Ice Breaker (Snacks and Drinks)
From 18:00		<i>Individual Dinner in Town</i>



April 3rd, 2025 (Thursday)

VAO Symposium

9:00 – 10:30	Knight Hall	Challenges of VAO Mountain Research in a changing climate – Keynote Presentations (part 2)
10:30 – 11:00	Foyer	<i>Coffee Break</i>
11:00 – 12:30	Knight Hall	Introduction of the VAO Network
12:30 – 14:00		<i>Lunch Break Walk into Town</i>
14:00 – 14:15	Knight Hall	Introduction to the Workshops
14:15 – 15:45		Interdisciplinary Workshops (parallel, see p. 8)
15:45 – 16:15	Foyer	<i>Coffee Break</i>
16:15 – 16:45	Knight Hall	Reports from interdisciplinary workshops
17:00 – 18:30	Knight Hall	Public discussion on the future of the VAO as an integrative international research collaboration
19:30 – 22:00	Die Schneiderei	<i>Conference Dinner</i>

Interreg VI-A (ITA-Ö) Stakeholder Meeting "FROST.INI"

14:00 – 15:45	Lord's Chamber	Part I: Expertenvorträge
15:45 – 16:15	Foyer	<i>Coffee Break</i>
16:15 – 18:00	Lord's Chamber	Part II: Workshop: Integration von Stakeholder-Bedürfnissen in das FROST.INI-Projekt

April 4th, 2025 (Friday)

9:00 – 10:15	Knight Hall	News from the VAO Observatories and Stations
10:00 – 11:30	Knight Hall	Future projects and project ideas
11:30 – 12:00	Knight Hall	Closing Ceremony

April 2nd, 2025 (Wednesday)

Opening Ceremony 11:15 – 12:00

11:15 – 11:30	<i>Knight Hall</i>	<i>Prof. Dr. Michael Krautblatter</i>	Welcome from the Coordinator of the Virtual Alpine Observatory
11:30 – 11:45	<i>Knight Hall</i>	<i>Thorsten Glauber (State Minister for Environment and Consumer Protection)</i>	Welcome from the Bavarian Ministry of Environment and Consumer Protection (in German language)
11:45 – 12:00	<i>Knight Hall</i>	<i>Domenik David (Major of Kaprun)</i>	Welcome from Austria (in German language)

Podiumsdiskussion (in German language) 12:00 – 13:00

		<i>Moderation: Dr. Reinhard Zeitler (Bavarian Ministry for Environment and Consumer Protection)</i>	
12:00 – 13:00	<i>Knight Hall</i>	<i>Thorsten Glauber (State Minister for Environment and Consumer Protection)</i> <i>Prof. Dr. Michael Krautblatter (VAO Coordinator)</i> <i>Ernst Schick (Vice President of the DAV – German Alpine Association)</i> <i>Dr. Franziska Koch (BOKU Vienna)</i> <i>Prof. Dr. Dr. Johannes Wallacher (HFPH Munich)</i>	Podiumsdiskussion: Klimawandel & Naturgefahren im Alpenraum – Handlungsbedarf und Strategien (in German language)
13:00 – 13:45	<i>Foyer</i>	<i>Small Lunch Break with Sandwiches and Drinks</i>	

Challenges of VAO Mountain Research in a changing climate – Keynote Presentations (part 1) 13:45 – 16:30

13:45 – 13:55	<i>Knight Hall</i>	<i>Prof. Dr. Michael Krautblatter (VAO Coordinator)</i>	Session Intro
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13:55 – 14:25	<i>Knight Hall</i>	<i>Prof. Dr. Eliza Harris (Universität Bern)</i>	Isotopic measurements of greenhouse gases at mountain sites: Opportunities and challenges
14:25 – 14:55	<i>Knight Hall</i>	<i>Prof. Dr. Ralf Ludwig (LMU München)</i>	Projecting Alpine climate extremes in the 21 st century
14:55 – 15:25	<i>Knight Hall</i>	<i>Prof. Dr. Michael Lehning (SLF Davos/ EPFL Lausanne)</i>	Snow in the European Alps: Observations, changes and opportunities
15:55 – 15:25	<i>Knight Hall</i>	<i>Prof. Dr. Dr. Johannes Wallacher (HFPH Munich)</i>	Ethical and Cultural Dimensions of Adaptation Strategies in a Changing Alpine Environment
15:25 – 16:00	<i>Knight Hall</i>		Closing discussion

Poster Sessions and Ice Breaker with snacks and cold drinks 16:00 – 18:00

Detailed poster program see pages 11-14

Session 1	<i>Gallery Hall</i>	<i>Poster Nr. 1.1 – 1.6</i>	Atmospheric response in a changing climate
Session 2	<i>Gallery Hall</i>	<i>Poster Nr. 2.1 – 2.4</i>	Biospheric response in a changing climate
Session 3	<i>Gallery Hall</i>	<i>Poster Nr. 3.1 – 3.7</i>	Cryospheric response in a changing climate
Session 4	<i>Gallery Hall</i>	<i>Poster Nr. 4.1 – 4.8</i>	Geo- and hydrological risks in a changing climate
Session 5	<i>Gallery Hall</i>	<i>Poster Nr. 5.1 – 5.7</i>	Hydrological response in a changing climate
Session 6	<i>Gallery Hall</i>	<i>Poster Nr. 6.1 – 6.4</i>	Observatories in the VAO

Dinner

from 18:00

Individual Dinner in Town

April 3rd, 2025 (Thursday)

Challenges of VAO Mountain Research in a changing climate – Keynote Presentations (part 2) 09:00 – 11:00

09:00 – 09:10	<i>Knight Hall</i>	<i>Prof. Dr. Michael Krautblatter (VAO Coordinator)</i>	Session Intro
09:10 – 09:30	<i>Knight Hall</i>	<i>Prof. Dr. Giovanni Crosta (UNIMIB Milano)</i>	Alpine georisks in a changing climate
09:30 – 09:50	<i>Knight Hall</i>	<i>Prof. Dr. Manuela Brunner (ETH Zürich)</i>	Alpine rivers and their extreme events in a changing climate
09:50 – 10:10	<i>Knight Hall</i>	<i>Prof. Dr. Michael Krautblatter (TU Munich)</i>	Alpine permafrost in a changing climate
10:10 – 10:30	<i>Knight Hall</i>	<i>Prof. Dr. Ulrich Pöschl (MPIC Mainz)</i>	Air Quality, Climate, and Health in the Anthropocene
10:30 – 11:00	<i>Knight Hall</i>		Closing discussion
11:00 – 11:30	<i>Foyer</i>	<i>Coffee Break</i>	

Introduction of the VAO Network 11:30 – 12:30

11:30 – 12:00	<i>Knight Hall</i>	<i>Živa Novljan Sebastian Magin</i>	Alpine Convention DAV – German Alpine Association
12:00 – 12:30	<i>Knight Hall</i>	<i>Prof. Dr. Michael Rast</i>	ISSI – Possibilities for scientific exchange and small-scale projects
12:30 – 14:00		<i>Lunch Break Walk into Town</i>	

Interdisciplinary Workshops (parallel sessions) 14:00 – 15:45

14:00 – 14:15	<i>Knight Hall</i>	<i>Prof. Dr. Michael Krautblatter</i>	Introduction to the Workshops
14:15 – 15:45	<i>Room 1</i>	<i>Moderators:</i> <i>Dr. Franziska Koch (BOKU Vienna)</i> <i>Prof. Dr. Manuela Brunner (ETH Zürich)</i>	Atmosphere - Geosphere - Cryosphere– Hydrosphere coupling in a changing climate
14:15 – 15:45	<i>Room 2</i>	<i>Moderators:</i> <i>Dr. Mateja Jemec-Auflič (Geological Survey of Slovenia)</i> <i>Dr. Marc Zebisch (EURAC Research)</i> <i>Theresa Frimberger (TUM)</i>	Geosphere– Biosphere – Human coupling and Hazards in a changing climate
15:45 – 16:15	<i>Foyer</i>	<i>Coffee Break</i>	

Reports from Interdisciplinary Workshops 16:15 – 16:45

16:15 – 16:30	<i>Knight Hall</i>	<i>Dr. Franziska Koch (BOKU Vienna)</i> <i>Prof. Dr. Manuela Brunner (ETH Zürich)</i>	Atmosphere - Geosphere - Cryosphere– Hydrosphere coupling in a changing climate
16:30 – 16:45	<i>Knight Hall</i>	<i>Dr. Mateja Jemec-Auflič (Geological Survey of Slovenia)</i> <i>Dr. Marc Zebisch (EURAC Research)</i> <i>Theresa Frimberger (TUM)</i>	Geosphere– Biosphere – Human coupling and Hazards in a changing climate
15 min		<i>Technical break</i>	

Public Discussion 17:00 – 18:30

17:00 – 18:30	<i>Knight Hall</i>	<i>Moderation: Prof. Dr. Michael Krautblatter (VAO)</i> <i>Speaker:</i> <i>Živa Novljan (Alpine Convention)</i> <i>Dr. Tobias Hipp (DAV – German Alpine Club)</i> <i>Dr. Markus Keuschnig (O-A-Lab Kitzsteinhorn)</i> <i>Dr. Marc Zebisch (EURAC Research)</i>	Public discussion on the future of the VAO as an integrative international research collaboration
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Conference Dinner 19:30 – 22:00

19:30 – 22:00	<i>Conference Dinner</i>	(Registration necessary prior to the symposium)
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Interreg VI-A (ITA-Ö) Stakeholder Meeting “FROST.INI” 14:00 – 18:00 (parallel)

14:00 – 15:45	<i>Lord's Chamber</i>	<i>Prof. Dr. Jan-Christoph Otto (Universität Salzburg)</i> <i>HR Mag. Gerald Valentin (Landesgeol. Salzburg)</i> <i>Dr. Volkmar Mair (Provinz Bozen Südtirol)</i> <i>Prof. Dr. Michael Krautblatter (TU München)</i> <i>Maïke Offer (GEORESEARCH)</i>	Permafrost-Verbreitung und -Modellierung in den Hohen Tauern Permafrost-relevante Naturrisiken im Bundesland Salzburg Permafrost in Südtirol: Risiken und Herausforderungen Innovative Konzepte zur mechanischen Modellierung von Permafrost-Felswänden Permafrost-Monitoring und Frühwarnung für hochalpine Infrastrukturen
15:45 – 16:15	<i>Foyer</i>	<i>Coffee Break</i>	
16:15 – 18:00	<i>Lord's Chamber</i>	<i>Project Partners & Stakeholders</i>	Integration von Stakeholder-Bedürfnissen und -Interessen in das FROST.INI-Projekt

April 4th, 2025 (Friday)

News from the VAO Observatories & Overview of Observations and available data 9:00 – 10:00

09:00 – 09:05	<i>Knight Hall</i>	<i>Prof. Dr. Michael Krautblatter</i>	Introduction of the VAO Observatories & Overview of Observatories and available Data
09:05 – 09:10		<i>Dr. Till Rehm</i>	Germany: Umweltforschungsstation Schneefernerhaus (UFS)
09:10 – 09:15		<i>Prof. Dr. Eliza Harris</i>	Switzerland: Hochalpine Forschungsstationen Jungfrauoch / Gornergrat (HFSJG)
09:15 – 09:20		<i>Prof. Dr. Jan Beutel</i>	Switzerland/Italy: Matterhorn Cryosphere Observatory CH/ITA
09:20 – 09:25		<i>Dr. Mateja Jemec-Auflič</i>	Slovenia: Geological Survey of Slovenia
09:25 – 09:30		<i>Dr. Florentin Hofmeister</i>	Austria: Glacier Observatory Vernagtferner
09:30 – 09:35		<i>Dr. Markus Keuschnig</i>	Austria: Open-Air-Lab Kitzsteinhorn
09:35 – 09:40		<i>Ján Krempaský</i>	Slovakia: Skalnaté Pleso Observatory and the Earth Science Institute
09:40 – 09:45		<i>Dr. Elke Ludewig</i>	Austria: Observatorium Sonnblick
09:45 – 09:50		<i>Prof. Dr. Dimitar Tonev</i>	Bulgaria: BEO Musala
09:50 – 09:55		<i>Dr. Marc Zebisch</i>	Italy: Eurac Research
10:00 – 10:30	<i>Foyer</i>	<i>Coffee Break</i>	<i>Parallel: short VAO Board Meeting (only for Board Members) in the Knight Hall</i>

Wrap up & closing ceremony 10:30 – 11:30

10:30 – 11:00	<i>Knight Hall</i>	Current benchmark projects and future activities of the VAO
11:00 – 11:30	<i>Knight Hall</i>	Closing ceremony

Poster Program (Gallery Hall)

Session	ID	Poster Title	Presenting Author
Atmospheric response in a changing climate – Session 1			
1	1.1	The X-RISK-CC webGIS of alpine-wide climate extremes	Dr. Piero Campalani (EURAC Research)
1	1.2	Determination of emerging pollutants at Zugspitze and Schauinsland: Overview on current projects by the UBA Germany	Dr. Julian Rüdiger (German Environment Agency – UBA)
1	1.3	Identification and Monitoring of Saharan Dust	Dr. Harald Flentje (German Meteorological Service – DWD)
1	1.4	Atmospheric cycles at high-altitude stations	Dr. Martin Steinbacher (Empa)
1	1.5	Aerosol Remote Sensing with Lidar at Zugspitze	Dr. Hannes Vogelmann (KIT/IFS)
1	1.6	Bioaerosol monitoring and research at the Sonnblick Observatory	Dr. Julia Burkart (GeoSphere Austria)
Biospheric response in a changing climate – Session 2			
2	2.1	From Deposition to effects: The Alpine Ecosystems are prone to impacts of Persistent, Bioaccumulative and Toxic Substances	Dr. Korbinian Freier (Bavarian Environment Agency)
2	2.2	Climate Change - Persistent Chemicals - Alps	Dr. Korbinian Freier (Bavarian Environment Agency)
2	2.3	Structural shifts in plant functional diversity during biogeomorphic succession: Moving beyond taxonomic investigations in an alpine glacier foreland	Dr. Stefan Haselberger (University of Vienna)
2	2.4	Wildfire plumes reaching Jungfraujoch in 2023	Dr. Leïla Simon (Paul Scherrer Institut - PSI)

Session	ID	Poster Title	Presenting Author
Cryospheric response in a changing climate – Session 3			
3	3.1	Reducing propagation of uncertainty for photogrammetry derived snow height measurements in high alpine terrain	Prof. Dr. Karl-Friedrich Wetzel (University of Augsburg)
3	3.2	Permafrost research at the Zugspitze	Dr. Korbinian Freier (Bavarian Environment Agency)
3	3.3	Coupled Thermal, Hydrological, and Mechanical Responses in Permafrost Rockwalls in a Changing Climate	Maïke Offer (Technical University of Munich)
3	3.5	Progress in Modeling Large-Scale Failure of Rock-Ice Joints	Simon Mühlbauer (Technical University of Munich)
3	3.6	A forecasting framework for mountain glacier evolution	Dr. Johannes Fürst (FAU Erlangen-Nürnberg)
3	3.7	UAV-based monitoring of the mountain cryosphere: Recent advances and future prospects	Dr. Alexander Raphael Groos (FAU Erlangen-Nürnberg)
Geo- and hydrological risks in a changing climate – Session 4			
4	4.1	Zugspitze Geology and the Eibsee Rockslide	Dr. Korbinian Freier (Bavarian Environment Agency)
4	4.2	Erosive power of debris flows: predictive modelling by a simple empirical approach	Verena Stammberger (Technical University of Munich)
4	4.3	Increased debris flow activity as a composed signal of 54 contributing catchments at Plansee, AT	Carolin Kiefer (Technical University of Munich)
4	4.4	Challenges of scoring landslide susceptibility models	Dr. Alexandre Dunant (EURAC Research)

Session	ID	Poster Title	Presenting Author
4	4.5	Deciphering controls of periglacial and cryogenic debris flows at Chimborazo volcano, Ecuador	Theresa Frimberger (Technical University of Munich)
4	4.6	Combining Climate, Hazard and Impact Analyses to Explore Future Local Risk Scenarios in the Alpine Region: Insights from the X-RISK-CC Project	Dr. Alice Crespi (EURAC Research)
4	4.7	Insights into Rock Temperature Variations: A Monitoring Study in Slovenia	Assoc. Prof. Dr. Mateja Jemec-Auflič (Geological Survey of Slovenia)
4	4.8	Rockfall hazard mitigation in touristically developed alpine gorges: a benchmark study in the Höllental Gorge, Bavaria.	Benjamin Jacobs (Technical University of Munich)

Hydrological response in a changing climate – Session 5

5	5.1	50 years of hydrometeorological observations at the Glacier Observatory Vernagtferner	Dr. Florentin Hofmeister (Bavarian Academy of Sciences and Humanities – BAdW)
5	5.2	25 Years of Lake Evolution and Sediment Dynamics in a Proglacial Environment: The Case of Sulzsee, Obersulzbach Valley, Austrian Alps	Dr. Jan-Christoph Otto (University of Salzburg)
5	5.3	Superconducting gravimetry at Mt. Zugspitze applied in the field of snow-hydrology	Dr. Franziska Koch (BOKU University Vienna)
5	5.4	Swiss Cheese meets Bucket-Model" - Conceptual hydrological modelling of the karstic Zugspitz-Region	Univ. Prof. Dr. Karsten Schulz (BOKU University Vienna)
5	5.5	Learning from the Past - River Analysis for a Changing Future	Max Rau (Technical University of Munich)
5	5.6	Impact of Climate Change on Groundwater Level	Ján Krempaský , Dr. Svetlana Varšová , Dr. Veronika Lukasová (Slovak Academy of Sciences)
5	5.7	Modeling of Geothermal Reservoirs in Munich/Bavaria	Viktoria Pauw (Leibniz Rechenzentrum)

Session	ID	Poster Title	Presenting Author
Observatories in the VAO – Session 6			
6	6.1	The Environmental Research Station Schneefernerhaus	Dr. Till Rehm (UFS)
6	6.2	The Sonnblick Observatory	Dr. Elke Ludewig (Geosphere Austria)
6	6.3	Research of the Space Weather at the Lomnický štít observatory	Dr. Jan Kubancak , Roland Langer (Institute of Experimental Physics SAS)
6	6.4	Cosmic ray measurements at Jungfraujoch	Dr. Lukas Bäni (University of Bern)

Poster boards

Poster boards are in portrait format. Authors can make use of the full dimensions of DIN A0 (841 x 1189 mm). Poster board number correspond to the poster number in the program.

VAO Symposium 2025, Kaprun/ Salzburg in short

Aim:

Transdisciplinary exchange, develop future research ideas and projects, outcome will guide the network's direction and impact in the coming years.

Date:

02.-04. April 2025

Venue:

Burg Kaprun, Schloßstraße 55, 5710 Kaprun, Austria
(<https://www.burg-kaprun.at/>)

Organizing Committee:

Prof. Michael Krautblatter (TUM)
Dr. Markus Keuschnig (GEORESEARCH)
Verena Stammberger (TUM)
Birgit Einhellinger (STMUV)
Dr. Sabine Kraushaar (TUM)

Deadline Registration:

15. February 2025 (extended to 25. February 2025)

Contact:

In case of any questions after reading through the information please contact info@vao.bayern.de

General Information

Information

Public transport to Kaprun

Train connections from Munich to Zell am See are given below. The public bus from Zell am See runs every 10 to 20 minutes depending on the time to the conference venue in Kaprun (Kaprun Maiskogelbahn or Kaprun Ortsmitte; 15-minute ride). From the bus station it is a 15 min walk to the Venue of the Symposium.

Arrival 2nd April 2025 for Symposium Start at 1 PM

Train: Munich Hbf – Wörgl – Zell am See 07:32-10:14

Bus 660: Zell am See – Kaprun Maiskogelbahn 10:23-10:41

Return 4th April 2025 after Symposium End at 1 PM

Bus 660: Kaprun Maiskogelbahn – Zell am See 12:52 – 13:09, 13:22 – 13:39, 13:52 – 14:09, etc.

Train: Zell am See – Wörgl – Munich Hbf 13:44-16:27, 15:45-18:28, 17:44-20:26, 18:46 – 22:13, 19:46-22:36

Accommodation (not included in conference fee)

Numerous accommodations (hotels, bed & breakfasts etc.) are available in Kaprun. We recommend you to check online booking platforms to find accommodations according to your preferences.

Below you find some suggestions for accommodations:

- Familienhotel Antonius: www.hotel-antonius.at
- Hotel Sonnblick: www.hotel-sonnblick.at
- Hotel DAS Alpenhaus Kaprun: www.alpenhaus-kaprun.at
- Vötter's Hotel: www.sport-kristall.at
- Gästehaus Steger: Pension Gästehaus Steger in Zell am See – Kaprun: urlaub-kaprun.com
- Pension Austria: www.pension-austria.at
- JUFA Hotel Kaprun: zellamsee-kaprun.com
- Hotel Tauern SPA Zell am See-Kaprun: www.tauernspakaprun.com

Early April is still ski season, we therefore **recommend to book as early as possible.**

Many further hotels are available in Kaprun. Please refer to the tourism association Kaprun (welcome@zellamsee-kaprun.com or +43 6547 8080) or visit an online booking platform to book a hotel according to your preference.

Map of Kaprun

