

Division on Nonlinear Processes in Geosciences

NP Division meeting

DM14

François G Schmitt

NP President

20 May 2022

Each EGU Division, which represents a scientific area or discipline, holds its annual Division Meeting during (or here shortly before) the General Assembly.

Division Meetings are open to all General Assembly participants interested in NP topics.

Agenda:

1. Important informations about EGU22
2. NP Awards and medals and composition of the committees
3. News from the Council
4. NP activities at the EGU22; approval of new Division deputy president
5. NP Early career scientists activities (by Tommaso Alberti)
6. Presentation on the Campfire “Scaling and multifractals” (by Auguste Gires)
7. NPG journal report and news (by Daniel Schertzer or Stephane Vannitsem)

Division on Nonlinear Processes in Geosciences

(1) Important informations about EGU22

Important information about EGU 22

- EGU 2022 is in hybrid format
- ~60% of participants will be on-site
- Chairpersons must be on-site
- On-site participants will have live presentations only
- Virtual participants can have live presentations or pre-recording
- All presentations will be short oral (from 5 to 7 minutes except solicited talks)
- All participants can have display material including longer presentations
- Please indicate (if not done already) your presentation information (on-site or virtual) here: <https://meetingorganizer.copernicus.org/egu22/abstractinformation>
- You must **upload your short presentations slides 24 hours** (latest) before your session. See here: <https://meetingorganizer.copernicus.org/EGU22/presentation-upload>

Important information about EGU 22

Conference time blocks

The main time blocks of the General Assembly are:

Time blocks	Presentations
TB1	08:30–10:00
TB2	10:20–11:50
TB3	13:20–14:50
TB4	15:10–16:40
TB5	17:00–18:30
TB6	19:00–20:00 Medal lectures and townhall meetings

Important information about EGU 22

Impacts of the Russian war against Ukraine

Special notice: To show our support for Ukraine and in accordance with current European sanctions, EGU will not accept any payment of EGU22 registration fees from Russian or Belarusian institutions paid on behalf of researchers based at or affiliated with them. Already paid fees will be directly and completely donated to the [UN Crisis Relief Fund for Ukraine](#).

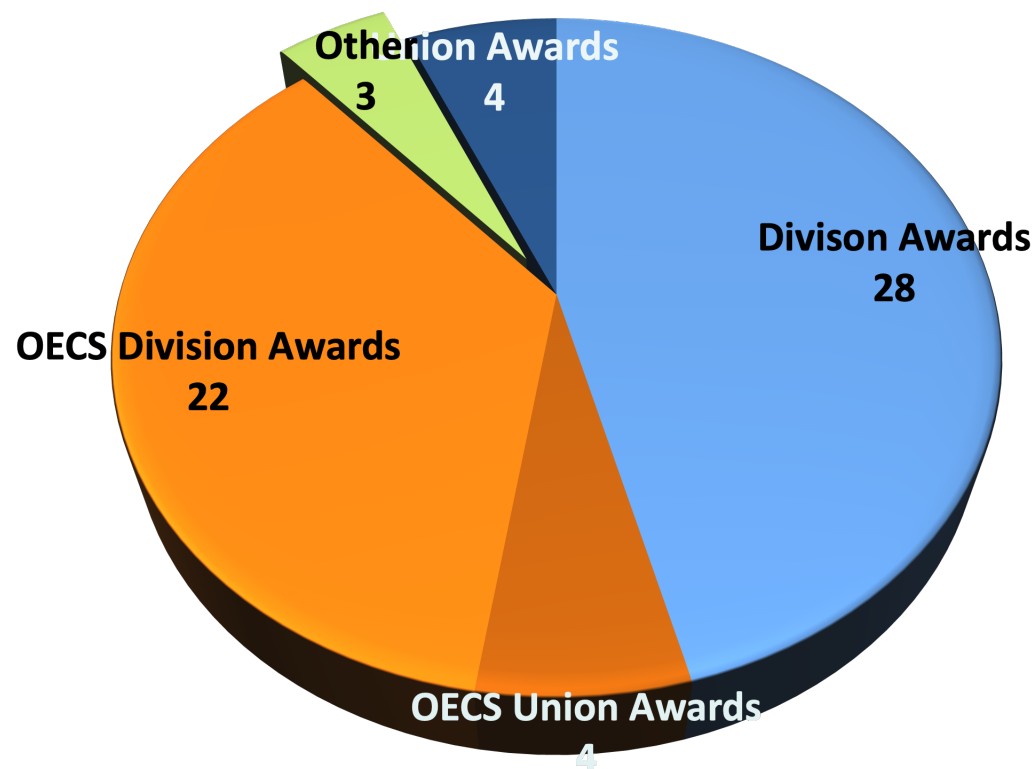
- EGU is not accepting payment of registration by Russian or Belarusian institutions (and bank links are broken)
- Some fees were already paid before the war outbreak
- EGU22 is not banned for Russian citizens
- There may be cancelled talks by Russian or Ukrainian colleagues: conveners may **check directly** with the corresponding author if affiliated in these countries if they will deliver the presentation
- In case of cancelled talks in your session: adjust the agenda and leave more time at the end of the session for questions

Division on Nonlinear Processes in Geosciences

(2) Awards and medal



EGU features an extensive awards and medals programme on all career stages



Awards

- Four prestigious **Union medals**, recognising excellence in scientific research
- Four Union awards for **Outstanding Early Career Scientists**, **services for the Union**, **science journalism**, and **outreach**
- 28 **division medals**, awarded for significant disciplinary contributions in Earth, planetary and space sciences
- 22 **division awards for Outstanding Early Career Scientists** and **General Assembly awards for students**



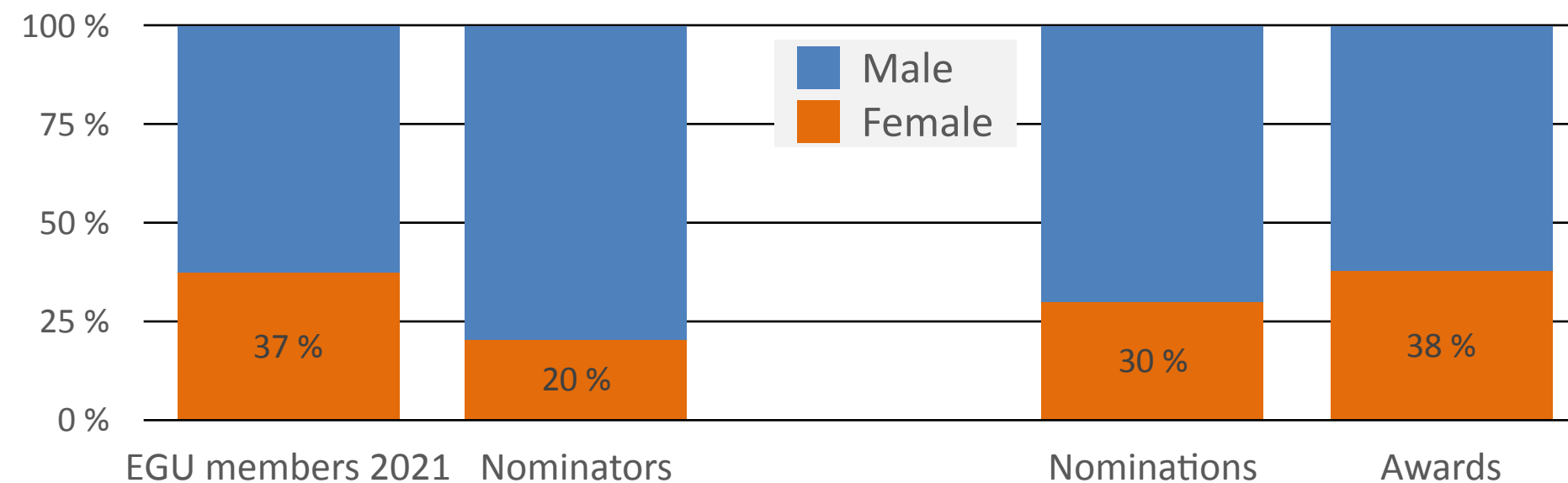
- **Nominations are exclusively by EGU members*** while candidates do not need to be EGU members. (*An exception is one award to promote excellence in journalism allowing nominations from non-members and self nominations)
- Individual award and medal committees are then evaluating the nominations selecting the most deserving candidate based on scientific achievements**. (**plus one medals each for journalism, outreach and service to the union)



EGU awards & medals

- **All** members are strongly encouraged to contribute to the awards program by nominating suitable candidates.
- When nominating please think about people who may have been overlooked in your discipline.

Members, Nominators, Nominees, and Awardees



EGU22-1087 * | Presentations | [EOS3.1](#) | **Highlight**
[Equality of opportunities in geosciences: The EGU Awards Committee experience](#)

Thomas Blunier
 EGU awards committee chair
 Wed, 25 May, 10:34–10:41
 Room 1.14



EGU awards & medals

How to nominate

Where: <https://www.egu.eu/awards-medals/nominations/>

When: Deadline is **June 15 every year**

What is required:

	Division and Union medals	Outstanding Early Career Scientists Awards
Nomination letter	1 page	½ page
Curriculum Vitae	2 pages	1 page
Selected bibliography	2 pages	½ page
Supporting letters	3-5 (maximum 1 page each)	-

Richardson medal committee

Previous Richardson medal committee (until May 2022)

Shaun Lovejoy (2019, chair)

Ekaterina Didenkulova

Bérangère Dubrulle (2021)

Valerio Lucarini (2020)

Tim Palmer (2018) → Leaves (4 years)

*Many thanks to Tim Palmer for his
involvement in the medal committee*

New Richardson medal committee

Shaun Lovejoy (2019, chair)

Ekaterina Didenkulova

Bérangère Dubrulle (2021)

Valerio Lucarini (2020)

Ulrike Feudel (2022)

*Needs approval of the participants to
the Division Meeting*

→
Enter

Ulrike Feudel (2022)

Division president, vice-president, and science officers

President	François Schmitt
Deputy President	Stéphane Vannitsem
Science Officers	Valerio Lucarini NP1: Mathematics of Planet Earth
	Christian Franzke NP2: Dynamical Systems Approaches to Problems in the Geosciences
	Ioulia Tchiguirinskaia NP3: Scales, Scaling and Nonlinear Variability
	Reik Donner NP4: Time Series and Big Data Methods
	Olivier Talagrand NP5: Predictability
	Yuliya Troitskaya NP6: Turbulence, Transport and Diffusion
	Julien Touboul NP7: Nonlinear Waves
	Henk Dijkstra NP8: Emergent Phenomena in Geosciences

NP Medal and Award committees functioning

1. Read all CVs and letters of support;
2. Discuss informally the different merits of the candidates;
3. Anonymous vote.

Conflict of interest: Any EGU award or medal is selected through a rigorous assessment of the candidates and their merits. The EGU Council, the award and medal committee members, and the Union and division officers are committed to soliciting the nomination of deserving individuals by avoiding conflicts of interest.

Awards and medals committee members should declare at the beginning of the selection procedure if they have any personal and/or professional relationship with any candidate, including:

- Known family relationship as spouse, child, sibling, or parent.
- Business or professional partnership.
- **Past or present association as thesis advisor or thesis student.**
- **Collaboration on a project, a book, article, report, or paper within the last 5 years**, and 10 years if a substantial number of co-publications are involved.
- Co-editing of a journal, compendium, or conference proceedings within the last 48 months.
- Having had **substantial collaboration during their professional career.**
- **Current employment at the same institution.**
- Previous employment at the same institution within the last 12 months.
- Being considered for employment at the institution.
- Being involved in any office, governing board membership, or relevant committee chairpersonship in the same institution.
- Having received an honorarium and/or award from the same institution in the past 24 months.

Awards and medal

NP Division Lewis Fry Richardson Medal



This medal was established by the Nonlinear Processes in Geophysics Division in recognition of the scientific achievements of Lewis Fry Richardson.

It is awarded to scientists for their exceptional contributions to nonlinear geosciences in general.



NP Division Lewis Fry Richardson Medal **2022**

The 2022 Lewis Fry Richardson Medal is awarded to **Ulrike Feudel** for fundamental contributions on tipping points in multistable systems.

Ulrike Feudel is a pioneer in multistable systems, i.e. systems possessing several coexisting stable states for given external (e.g. environmental) conditions. She developed methods to analyze such systems including long chaotic transients caused by large chaotic saddles comprising one or more different space-time patterns. She uncovered that these transients are the dominating dynamics in multistable systems and provided the mathematical basis of how multi-stability appears in nonlinear dynamical systems.

She went on to apply these ideas to important geophysical problems that include extreme events, plankton and tidal dynamics, tipping points for the thermohaline ocean circulation, noise-induced tipping points in deep ocean convection and marine ecosystems. Both the breadth of her work – spanning geoscience and ecology – as well as its depth – from fundamentals to applications have been qualified as “staggering”.

Ulrike Feudel has been involved in the Nonlinear Processes division for several decades and has been an editor of the NP journal since 2004. She has authored over 160 peer reviewed papers and in 2009 published a book “Strange Nonperiodic attractor.” She has organized numerous workshops and has supervised two dozen MSc and PhD theses.



Ulrike Feudel

NP Division Early Career Scientist Outstanding Award

An Early Career Scientist (ECS) is a student, a PhD candidate, or a practising scientist who received their highest certificate (e.g. BSc, MSc or PhD) **within the past seven years**. The seven-year period can be extended to allow for periods when the scientist was not working in science because of, but not limited to, caring and/or parental responsibilities, disability, personal illness, community obligations or national service.

For the purpose of the awards the nominee should satisfy one of the **above criteria by 1 January of the year** when the award is presented.

<https://www.egu.eu/awards-medals/ecs-definition/>

NP Division Early Career Scientist Outstanding Award

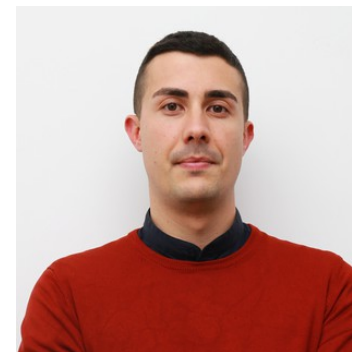
The NP Division Outstanding Early Career Scientist Awards recognises scientific achievement made by an Early Career Scientist in the fields covered by the NP division.

Candidates for each division's Outstanding Early Career Scientist Award are first chosen by the relevant division president, who forwards the most outstanding candidate to the Chair of EGU's Awards Committee.

Four candidates are then selected by Council to receive the Union-level Arne Richter Awards for Outstanding Early Career Scientists. The remaining candidates are awarded by the relevant division.

NP Division Early Career Scientist Outstanding Award **2022**

The 2022 Division Outstanding Early Career Scientist Award is awarded to **Tommaso Alberti** for outstanding research in the fields of data analysis and modeling, via dynamical system approaches, to understand complexity in geoscience, space plasma, and the planetary environment.



Tommaso Alberti

<https://www.egu.eu/awards-medals/division-outstanding-ecs-award/2022/tommaso-alberti/>

Tuesday 24 May, 19:40 (CEST)
Session MAL20, room 0.94/95

[\[Programme\]](#)

MAL20

Lewis Fry Richardson Medal Lecture by Ulrike Feudel & NP Division Outstanding ECS Award by Tommaso Alberti

Convener: François G. Schmitt [Q](#)

[▶ Presentations](#) ★ | Tue, 24 May, 19:00–20:00 (CEST) Room 0.94/95

[Presentations: Tue, 24 May | Room 0.94/95](#)

Chairperson: François G. Schmitt

19:00–19:05

[Introduction by F. Schmitt](#)

19:05–19:30 | EGU22-10567 ★ | Lewis Fry Richardson Medal Lecture | On-site presentation

[Tipping phenomena and resilience of complex systems: Theory and applications to the earth system](#) ▶

Ulrike Feudel

19:30–19:40

[Questions and answers](#)

19:40–19:43

[Introduction by F. Schmitt](#)

19:43–19:55 | EGU22-1090 ★ | **ECS** | NP Division Outstanding ECS Award Lecture | On-site presentation

[The geometry of scales: chameleon attractors](#) ▶

Tommaso Alberti

19:55–20:00

[Questions and answer](#)

Division on Nonlinear Processes in Geosciences

(3) News from the council

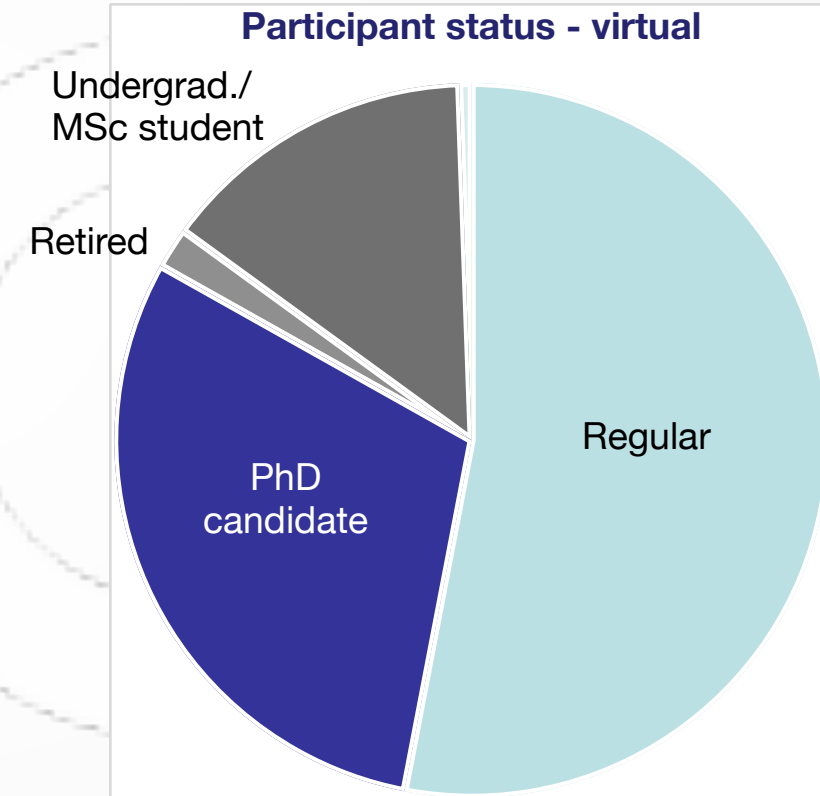
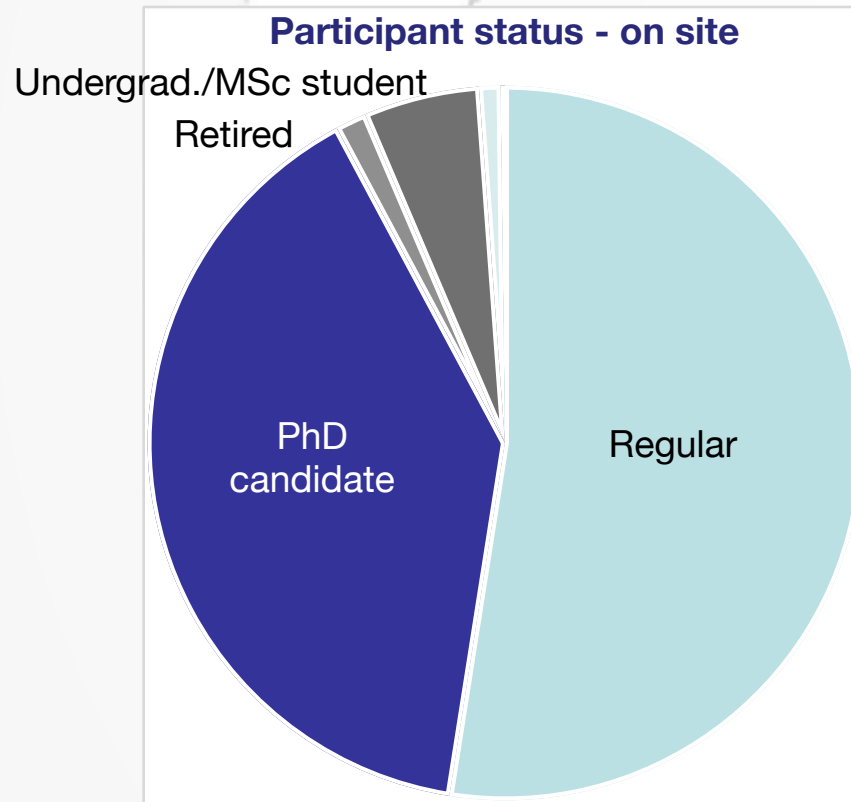
Slides prepared by Peter van der Beek, chair of the Programme committee

EGU22: Sessions and abstracts, Schedule

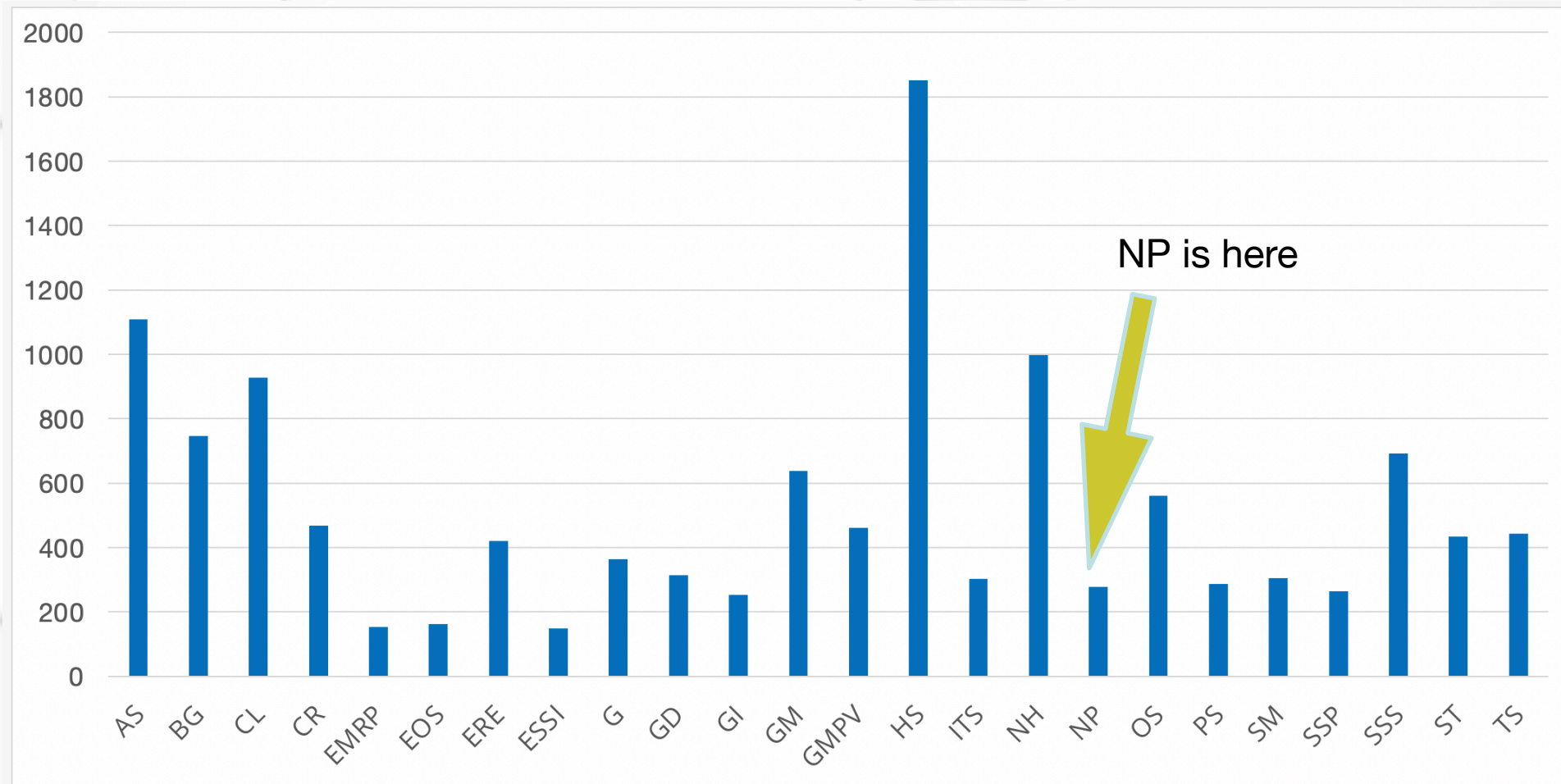
- 12,615 abstracts in programme | -9% relative to 2021
- 777 active sessions | 614 short-oral sessions | 54 Short Courses | 35 Medal and Award Lectures
- 65 Networking and Community Events (excluding pop-ups), Townhall Meetings, Side Events, Splinter Meetings
- EGU Plenary 23 May 12:00 CEST (Room E1) | Medal & Award celebration 25 May 17:30 CEST (Room E1)

EGU22: Registration numbers and breakdown

- 7280 on-site registrations
- On-site participants: 88 countries
- 4384 virtual registrations (12/05 21:00)
- Virtual participants: 107 countries



EGU22: Abstracts per Programme Group



EGU Membership as of 13.05.2022

- 14,988 members (9.135 ECS)
- Gender balance: 60.1% male | 37.1% female | 0.3% non-binary | 2.5% prefer not to say

Early-Career Scientist Events at EGU22

- 42 Short courses
 - 30 Short courses ECS as lead-convener
- 3 Networking and pop-up events led by and aimed at ECS
- 32 Great Debates led by ECS
- Jobs and Career Center initiatives
 - Blogs
 - Short courses
 - Networking events
 - Pop-up events
- Outreach
 - Introducing ECS Reps via EGU Blog
 - Blogs and Social Media blurbs about ECS-events

Equality, Diversity and Inclusion (EDI) at EGU22

- **SC2.5** ADVANCEGeo Workshop - Strategies for Improving Workplace Climate in the Geosciences | 24 May 13:20 – 14:50 CEST
- **EOS3.1** Promoting and supporting equality, diversity and inclusion in the geosciences | 24 May 08:30–10:00 CEST
- **US1** Changing the Faces of Leadership at the Geoscience - Policy Interface | 26 May 15:10–16:40 CEST
- **US3** The future of (geo)scientific conferences | 24 May 13:20–16:40 CEST
- **US4** Scientific neo-colonialism: what is it and why should you care? | 24 May 17:00–18:30 CEST
- **GDB1** Towards an academic evaluation system that celebrates diversity of talent | 23 May, 10:20–11:50 CEST
- **NET1** “The Leadership” – directed by Ili Baré film screening | 23 - 30 May
- EDI Networking Event | 26 May, 19:00–20:00 CEST
- EGUpride icebreaker | 22 May, 19:00–21:00 CEST and EGUpride networking | 26 May, 18:00–19:00 CEST
- Did This Really Happen (DTRH) comics and EGU colouring book (part 2!)
- EDI Booth.... AND MORE!

EGUsphere - The EGU interactive community platform

- EGUsphere, the not-for-profit open access **preprint repository** of the European Geosciences Union (EGU).
- Inclusive | Transparent | Interactive
- Find out how to post your conference abstract, presentation, or journal preprint in the Earth, space, and planetary sciences!

VISIT: <https://www.egusphere.net/>

Pssst!
Have you heard of

The logo features the word "EGUsphere" in a bold, blue, sans-serif font. The "E" is stylized with a circular arrow around it. A blue swoosh underline is positioned above the "sphere" part of the word. The entire logo is set against a yellow oval background decorated with several white stars of varying sizes.

EGUsphere

EGU22 outreach activities

- **EGU Public Lecture:** “Geothermie - Energie aus der Tiefe” (Geothermy - energy from the depths) by Maria-Theresia Apoloner | Zentralanst. f. Meteorologie und Geodynamik (ZAMG) - 24 May 18:00 at the Austrian Academy of Sciences and online.
- **EGU Mentoring:** 48 mentees for 20 mentors applications.
- **Croome award lecture** by Robin George Andrews 24 May 19:00 CEST Room E1
- **Teaching/scientist pairing scheme**

EGU22 Survey

- Distribution:
 - via email to participants and EGU members after EGU22
 - links on social media & blog
 - egu22.eu website
- Survey live during EGU22 and until end of June

 <https://www.egu22.eu/feedback>



- ***Why did you change the date of EGU22 from early April to late May?***

This decision was made in January at the beginning of the omicron wave. There was considerable anxiety within the community about attending an in-person event in these conditions. Moreover, Austria limited the maximum event size to 2000 seated people (and even less standing), with no indication of when that rule would be relaxed.

Under these conditions, when the ACV proposed an alternative date (due to the cancellation of another conference) we decided to do this, in order to maximise the chance of having an in-person component to EGU22

- ***Why are there no posters or PICOs this year?***

We originally had to provide a hygiene plan to the Austrian authorities. Including posters and PICOs in the programme appeared as a major risk in getting the plan approved.

Large numbers of non-seated people mixing in closed spaces are viewed as too much of a risk to our attendee's health, safety and well-being in the current pandemic situation.

- ***Austria relaxed the Covid regulations. Why are you maintaining the 2G and mask requirements?***

The Austrian authorities announced the relaxation of the regulations after our deadline for on-site registration. Due to the requirements of our conference hygiene plan, it was not possible to re-open the registration. We felt that participants had signed up for an in-person event under certain conditions and we did not want to modify this after participants had registered. The health and safety of all participants is our primary concern. In addition, we were advised to maintain a 2G conference given the unpredictable nature of regulation changes.

Division on Nonlinear Processes in Geosciences

**(4) NP activities at EGU22
and approval of new NP
deputy president**

NP – Nonlinear Processes in Geosciences

Programme group chair: François G. Schmitt Q

- NP0 – L.F. Richardson's 1922 centennial
- NP2 – Dynamical Systems Approaches to Problems in the Geosciences
- NP3 – Scales, Scaling and Nonlinear Variability
- NP4 – Time Series and Big Data Methods
- NP5 – Predictability
- NP6 – Turbulence, Transport and Diffusion
- NP7 – Nonlinear Waves
- NP8 – Emergent Phenomena in Geosciences
- NP9 – Short courses

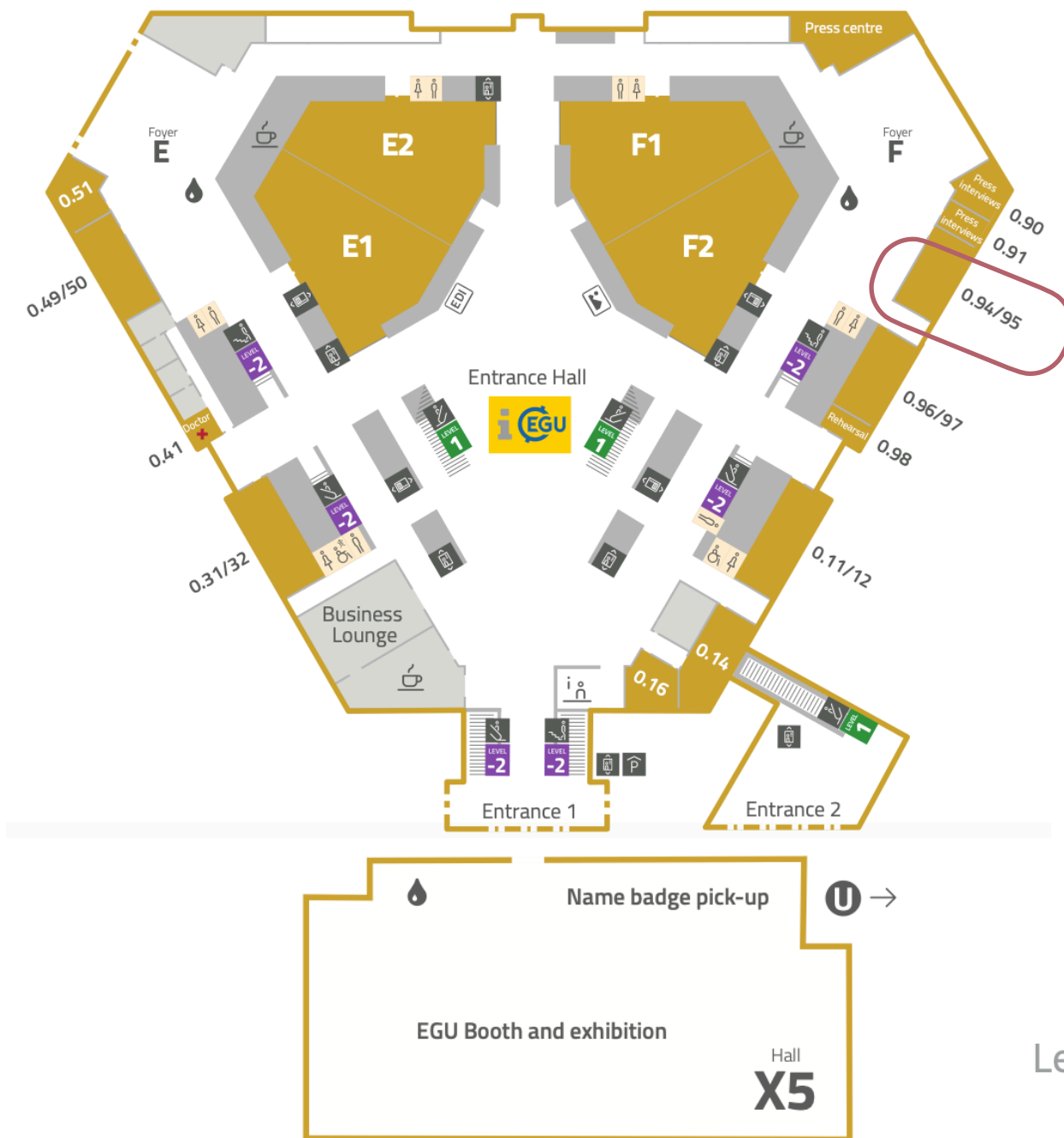
MAL20

Lewis Fry Richardson Medal Lecture by Ulrike Feudel & NP Division Outstanding ECS Award by Tommaso Alberti

Convener: François G. Schmitt Q

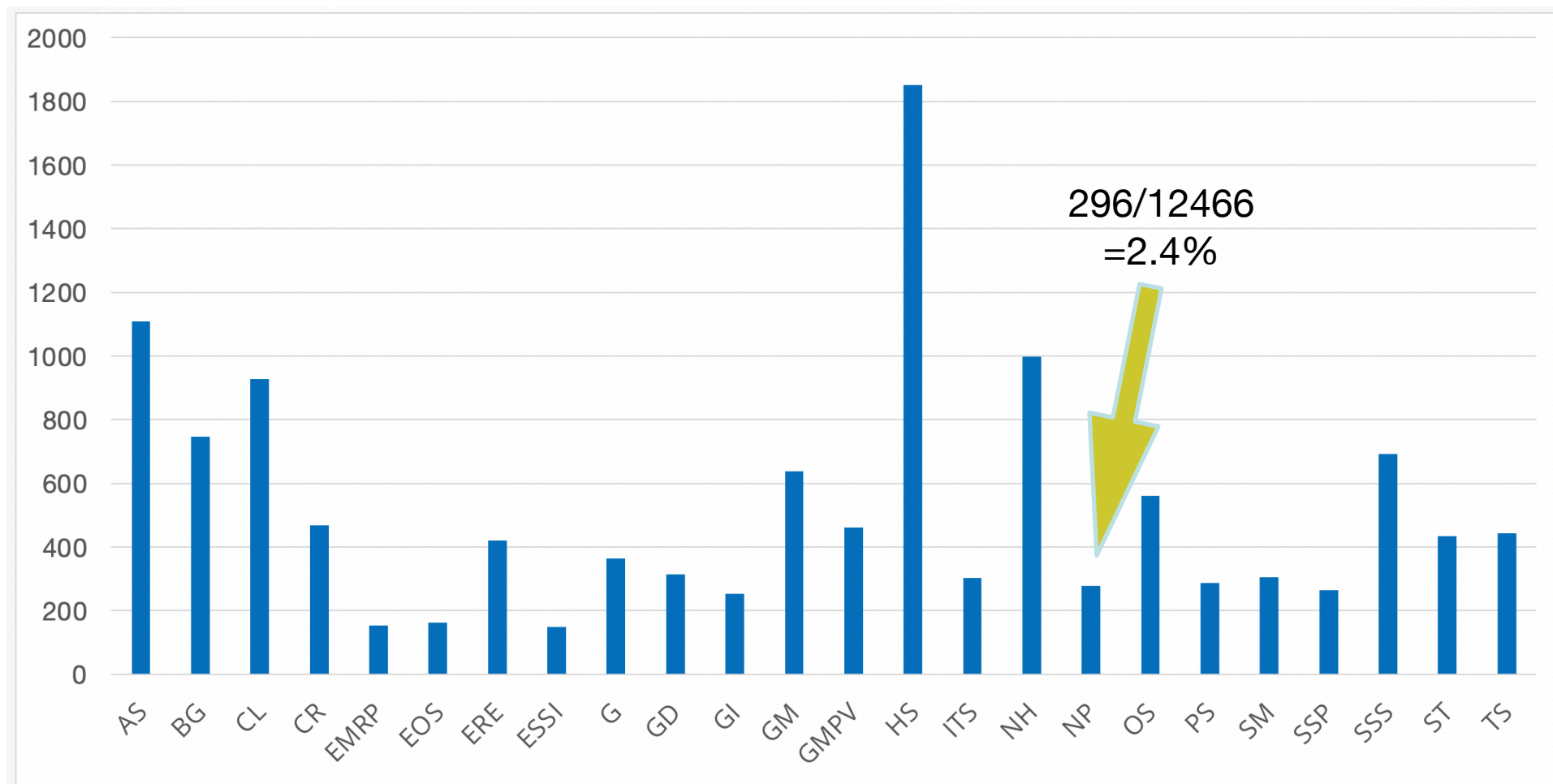
► [Presentations](#) ★ | Tue, 24 May, 19:00–20:00 (CEST) ■ Room 0.94/95

All NP-lead sessions (except ITS) will be in this room during the week



General Assembly 2022
Yellow Level 0 – ground floor
 Lecture rooms | Press centre | Exhibition





NP is among the small divisions
(but not the smallest)

Thanks to all NP conveners for the organization, and to participants for display materials

PG abstract statistics

Active scheduled	All	928
Granted supports	None:	924 (100%)
	ECSTS:	0 (0%)
Presentations	Presentations:	928 (100%)
Author identification specifics	ECS:	554 (60%)

Active scheduled	NP lead	296
Granted supports	None:	292 (99%)
	ECSTS:	0 (0%)
Presentations	Presentations:	296 (100%)
Author identification specifics	ECS:	177 (60%)

NP leading and co-organised sessions

	Abstracts	Sessions	
NP lead	296	12	+1 ITS
Co-organised by NP	632	25	+2 ITS
total	924	37	+3 ITS

6% of sessions

NP lead: **2.4%** of all abstracts

NP lead + NP co-organizing: **7.4%** of all abstracts

2022: increase of proportion of co-organised sessions, better for our visibility?

NP0 – L.F. Richardson's 1922 centennial

Programme group scientific officer: François G. Schmitt 

NP0.1

Turbulent cascades in geosciences 100 years after Richardson 1922 ▶

In his seminal work "Weather Prediction by Numerical Process" in 1922, Lewis Fry Richardson proposed his famous cascade picture qualitatively, for a turbulent flow where the energy is transferred from large scale structures to small scale ones, until reaching viscosity scales where it is converted to heat. This picture now has been widely adopted to describe different type of turbulent phenomena, for not only the classical hydrodynamic turbulence, but also, not limited to, the movement of atmosphere and oceans.

After 100 years of developments, the concept of cascades has been extended significantly. Now, it describes mainly the nonlinear interactions crossing a large range of scales where scale invariants might emerge spontaneously. More precisely, balances between the external forcing and the dissipation are expected for a turbulent system. However, due to the complexity of atmospheric or oceanic systems, such as earth rotation, stratification, large aspect ratio, mesoscale eddies, ocean current, tidal, waves, etc., the exact balance is still unknown. We still lack an efficient methodology to diagnose the scale-to-scale energy or other physical quantities fluxes to characterize the cascade quantitatively, e.g., strength, direction, etc.

With the increasing capability of remote sensing, computational fluid dynamics, field observation, etc., we have accumulated a large amount of field data. It is now a suitable time to celebrate the 100th Anniversary of Richardson's idea of cascades in the geosciences, and to understand it quantitatively. This interdisciplinary session welcomes theoretical, methodological, laboratory, data analysis works that aim to characterize the cascade in atmosphere and oceans and other fields.

Share: <https://meetingorganizer.copernicus.org/EGU22/session/42643> 



Co-organized by AS1/OS4/ST3

Convener: Yongxiang Huang  | Co-conveners: François G. Schmitt , Shaun Lovejoy , Tommaso Alberti  ^{ECS}, Stéphane Vannitsem 

▶ [Presentations](#) ★ | Wed, 25 May, 11:05–11:44 (CEST), 13:20–14:50 (CEST)  Room 0.94/95

Inter- and Transdisciplinary Sessions

- ITS2 ○ Responsible and intelligent data modelling, AI and machine learning strategies for climate, environment, planetary and space sciences
- ITS3 ○ A new era of Earth and planetary observation: instrumentation for what and to whom?
- ITS4 ○ Local solutions that have global impact: mitigation measures in geosciences to reduce the global temperature increase
- ITS5 ○ Impact of land use on food production and "natural" hazards

ITS2.6/AS5.1 **EDI**

Machine learning for Earth System modelling

Co-organized by CL5.3/ESSI1/NP4/OS4

Convener: Julien Brajard  | Co-conveners: Alejandro Coca-Castro  , Peter Düben , Redouane Lguensat  , Emily Lines , Francine Schevenhoven  , Maike Sonnewald  

► **Presentations** ★ | Mon, 23 May, 17:00–18:30 (CEST) ■ Room N1, Tue, 24 May, 08:30–11:50 (CEST), 13:20–14:50 (CEST) ■ Room N1

ITS2.7/AS5.2 **EDI**

Machine Learning for Climate Science

Co-organized by CL5.3/ESSI1/NP4



Convener: Duncan Watson-Parris   | Co-conveners: Katarzyna Tokarska  , Gustau Camps-Valls , Marlene Kretschmer  , Rochelle Schneider 

► **Presentations** ★ | Mon, 23 May, 08:30–11:50 (CEST), 13:20–14:50 (CEST), 15:10–16:40 (CEST) ■ Room N1

ITS3.5/NP3.1 **EDI**

Geoscience and health during the Covid-19 pandemic

Co-organized by AS4/BG8/CL3.2/ESSI4/GI1/NH8, co-sponsored by AGU and AOGS

Convener: Daniel Schertzer  | Co-conveners: Tommaso Alberti  , Klaudia Oleshko , Hongliang Zhang 

► **Presentations** ★ | Thu, 26 May, 15:55–18:30 (CEST) ■ Room N1

NP involved in 3 ITS sessions

(one lead by NP, two lead by AS)


NP short courses

SC3.10 **EDI**

[Meet the EGU Journal Editors](#) ▶

Co-organized by CR8/GD10/GM14/NP9/SSP5

Convener: TJ Young ^{ECS}  | Co-conveners: Tommaso Alberti ^{ECS} , Anna Gülcher ^{ECS} , Aayush Srivastava , Jenny Turton 


★ Tue, 24 May, 17:00–18:30 (CEST)  Room -2.61/62

SC4.9

[Nonlinear Processes in Geosciences: from past methods to novel approaches](#) ▶

Co-organized by AS6/CL6/EMRP2/NP9/ST2

Convener: Tommaso Alberti ^{ECS}  | Co-conveners: Peter Ditlevsen , Reik Donner 

★ Wed, 25 May, 15:10–16:40 (CEST)  Room -2.61/62

SC4.13

[Thermodynamics and energetics of the oceans, atmosphere and climate](#) ▶

Co-organized by AS6/CL6/NP9

Convener: Valerio Lembo ^{ECS}  | Co-conveners: Remi Tailleux , Gabriele Messori 


★ Fri, 27 May, 13:20–14:50 (CEST)  Room -2.85/86

SC4.11

[Scales and Scaling in the Climate System](#) ▶

Co-organized by CL6/NP9





Convener: Shaun Lovejoy  | Co-conveners: Christian Franzke , Thomas Laepple 

★ Mon, 23 May, 08:30–10:00 (CEST)  Room -2.61/62

SC4.15

[Introduction to time series analysis for Earth scientists](#) ▶

Co-organized by BG2/CL6/NP9/SSP5

Convener: Matthias Sinnesael ^{ECS}  | Co-conveners: Christian Zeeden , David De Vleeschouwer , Ricardo N. Santos ^{ECS} 

★ Tue, 24 May, 17:00–18:30 (CEST) | Pre-recorded

Formats

EGU22 offers three different short course (SC) formats:


- On-site offline SCs taking place in a lecture room in Vienna without options for virtual attendance.
- On-site online SCs (hybrid SCs) taking place in a lecture room inside the congress centre and also allowing virtual attendance.
- Online-only SCs are pre-recorded short courses to be followed online on demand, with no physical event in the congress centre.

NP networking event

NP networking event ▶

Organized by Tommaso Alberti

Location: EGU Networking zone at terrace G

Thu, 26 May, 15:00–16:00 CEST 

Tags: Social, Division event, Early Career Scientist (ECS), Networking

Outstanding Student Poster Presentations (OSPP)

Specific Regulations for OSPP Contest 2022

- Since there are **only oral presentations** this year, all ECS participants are eligible for the contest, as long as they are the first and presenting author of the oral presentation
- All OSPP participants are clearly indicated as such in the final programme. There will be no label.
- **All registered EGU participants are invited to vote** on OSPP presentations, as long as they are neither BSc or MSc students or PhD candidates themselves or conflict of interest
- The **evaluation will focus mainly on the oral presentation**. In case that a judge was not able to follow the oral presentation, the uploaded display material may be reverted to in exceptional cases. It is therefore **mandatory for all OSPP participants to upload display material**.
- The link to the evaluation form is directly available on the online presentation page. Judges are asked to get in contact with the presenter to **ask questions** (either directly in the oral session or by using the commenting tool on the online presentation page).
- **In addition, session conveners are again asked to appoint at least three judges per OSPP abstract prior to the EGU General Assembly. Conveners are explicitly invited to nominate themselves as judges within their session as long as they are not conflicted.**

=> This year I waited for NP conveners to comply, but still there are many missing judges, I will assign them on Monday if the conveners do not proceed!

For all queries, the OSSP coordinator for NP: davide.Faranda@cea.fr

NP division structure

President	François Schmitt	np@egu.eu
Deputy President	Stéphane Vannitsem	
Programme Group Chair	François Schmitt	np@egu.eu
Science Officers	Valerio Lucarini NP1: Mathematics of Planet Earth	✉
	Christian Franzke NP2: Dynamical Systems Approaches to Problems in the Geosciences	✉
	Ioulia Tchiguirinskaia NP3: Scales, Scaling and Nonlinear Variability	✉
	Reik Donner NP4: Time Series and Big Data Methods	✉
	Olivier Talagrand NP5: Predictability	✉
	Yuliya Troitskaya NP6: Turbulence, Transport and Diffusion	✉
	Julien Touboul NP7: Nonlinear Waves	✉
	Henk Dijkstra NP8: Emergent Phenomena in Geosciences	✉

Approved online during
the summer 2021

Replacement after the GA: the executive committee proposes **Reik Donner** as new deputy president

Publications	Daniel Schertzer
Scientific Affairs	Davide Faranda
Lewis Fry Richardson Medal Chair	Shaun Lovejoy
ECS Representative	Tommaso Alberti
Webmaster	Auguste Gires

Division on Nonlinear Processes in Geosciences

(5) NP Early Career Scientists activities

by Tommaso Alberti (ECS representative, NP division)

During EGU22

NET2

[First-time attendee and mentee meet-up \(onsite only\) ▶](#)


Convener: Simon Clark 

★ Mon, 23 May, 12:00–13:00 (CEST)  Business Lounge

NET3

[ECS networking reception \(onsite only\) ▶](#)

Convener: Anita Di Chiara  | Co-convener: Simon Clark 

★ Tue, 24 May, 19:00–20:30 (CEST)  Hall A

NET4

[ECS Forum \(onsite only\)](#)

Convener: Anita Di Chiara 

★ Thu, 26 May, 17:00–18:30 (CEST)  Room F1

NP dinner/drink

Wednesday 25 20:00 (TBC)

Thursday 26 19:00 (TBC)

NP9 – Short courses


Programme group scientific officer: François G. Schmitt 

SC3.10 [EDI](#) 

[Meet the EGU Journal Editors ▶](#)

Co-organized by CR8/GD10/GM14/NP9/SSP5

Convener: TJ Young   | Co-conveners: Tommaso Alberti  , Anna Gülcher  , Aayush Srivastava , Jenny Turton 

★ Tue, 24 May, 17:00–18:30 (CEST)  Room -2.61/62

SC4.9

[Nonlinear Processes in Geosciences: from past methods to novel approaches ▶](#)

Co-organized by AS6/CL6/EMRP2/NP9/ST2

Convener: Tommaso Alberti   | Co-conveners: Peter Ditlevsen , Reik Donner 


★ Wed, 25 May, 15:10–16:40 (CEST)  Room -2.61/62

SC4.13

[Thermodynamics and energetics of the oceans, atmosphere and climate ▶](#)

Co-organized by AS6/CL6/NP9

Convener: Valerio Lembo   | Co-conveners: Remi Tailleux , Gabriele Messori 

★ Fri, 27 May, 13:20–14:50 (CEST)  Room -2.85/86

SC4.11

[Scales and Scaling in the Climate System ▶](#)

Co-organized by CL6/NP9

Convener: Shaun Lovejoy  | Co-conveners: Christian Franzke , Thomas Laepple 

★ Mon, 23 May, 08:30–10:00 (CEST)  Room -2.61/62

SC4.15

[Introduction to time series analysis for Earth scientists ▶](#)

Co-organized by BG2/CL6/NP9/SSP5

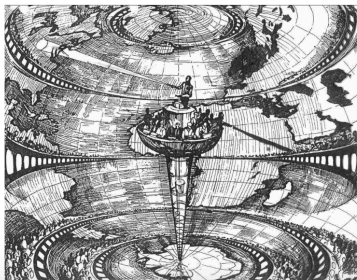
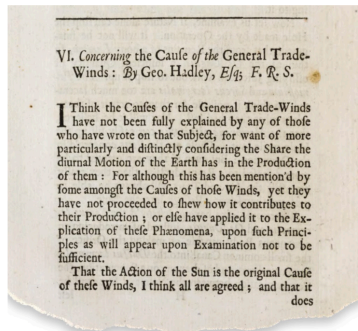
Convener: Matthias Sinnesael   | Co-conveners: Christian Zeeden , David De Vleeschouwer , Ricardo N. Santos  

★ Tue, 24 May, 17:00–18:30 (CEST) | Pre-recorded

Highlights from 2021-2022 - Campfires

“Perspectives on Climate Sciences” (3rd series, May-Jul 2021)

<https://sites.google.com/view/perspectivesonclimate/home-page>



Climate sciences have inevitably gained increasing attention, from a broad range of specialists in the scientific community, but also from stakeholders and the general public. Nevertheless, it is still challenging to give a rigorous definition of climate, and this is one of the reasons why this discipline has preserved its intrinsic interdisciplinary nature, despite the fact that the path leading a researcher's interest towards climate sciences is getting more and more well defined.

Interdisciplinarity means that scientists from very diverse backgrounds have gathered, bringing their own expertise, specifying the fundamental problems and ultimately contributing to shape a new discipline. Physicists, chemists, mathematicians, biologists, oceanographers, but also historians, archaeologists, economists, social scientists, among others, have joined the debate on what the climate system is, and what are the causes and consequences of climate change in relation with the biosphere and human activities.

Our aim is to hear first-hand from some of the scientists who played a key role in shaping our understanding of the climate system, in terms of theoretical advancements, methodologies, bridging different disciplines and creating interdisciplinary networks. They will provide a personal perspective on the recent history of climate sciences, discussing the circumstances under which they approached the climate problem, the colleagues and advisors that served as inspiration for them, and how their contribution helped to open new ways in the common thinking of the research community.

This seminar series will be of interest to scientists, especially at an early stage of their career, will act as an inspiration and motivation for pushing their ideas forward and better understanding the past and present rationale of the climate research community.

“Scaling and multifractals” (Jan-Feb 2022)

<https://hmco.enpc.fr/scaling-and-multifractals-campfire/>

Scaling and multifractals : from historical perspectives to recent developments

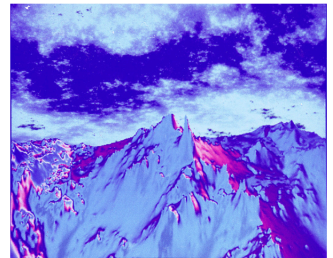
Scaling law behaviours are ubiquitous in geosciences both from a theoretical and practical point of view. They are required to better understand, analyse and simulate the underlying processes, which yields the observed variability of geophysical fields over wide ranges of spatio-temporal scales.

A group of scientists within the Nonlinear Processes in Geosciences (NP) Division of the European Geosciences Union (EGU) is launching in the “campfire” framework* a series of webinars on “Scaling and multifractals : from historical perspectives to recent developments.”

The aim of the “campfire” is to hear first-hand from internationally recognized

experts of the field their personal perspectives on scaling and multifractals. They will share their thoughts on the historical background of the field as well as its recent developments and future goals. This unique opportunity, targeted to both early career scientists and established researchers, aims at fostering discussions within the research community to push it toward pursuing past achievements.

Registration is free but mandatory. To register, simply send an email to sympa@liste.enpc.fr with “subscribe egu_np_campfire_multifractals” (without the quotation marks) as title. Link to connect will be sent shortly before the webinar.



Adapted from G. Sarma et al. 1991

- The largest number of seminars within all EGU divisions (20 events, EGU avg. 3)
- The largest average number of participants (~80, EGU avg. ~40)

Highlights from 2021-2022 - Blog

The 2021 Nobel Prize on Physics awarded to the physics of complex systems!

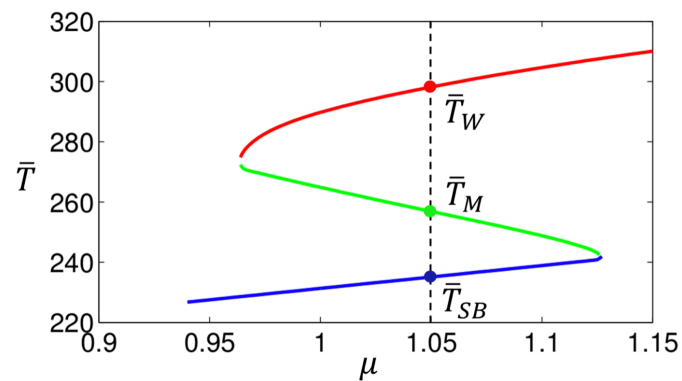
Valerio Lembo · October 25, 2021 · Climate, Climate Change, Climate of the Future, Climate of the Present, Dynamical systems, Earth, EGU Divisions, EGU General Assembly, Extreme events, forecast, Global warming, Global Warming, Heatwaves, Multiscale dynamics, Nonlinear, Nonlinear Processes in Geosciences, Outreach, Science Communication · 1 Comment

NEWS



Exploring the multistable and multiscale climate system via noise

Georgios Margazoglou · December 7, 2021 · Budyko-Sellers model, Climate, Climate Change, Dynamical systems, EGU Divisions, Energy-balance model, Mathematics, Multiscale dynamics, Noise, Nonlinear, Nonlinear Processes in Geosciences, Outreach, Science Communication · No Comments

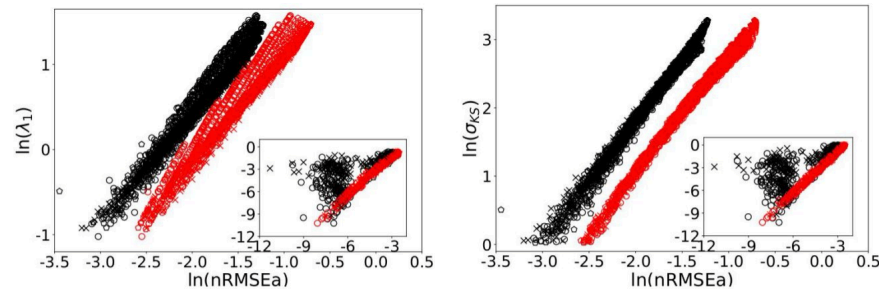


<https://blogs.egu.eu/divisions/np/>

NPG Paper of the Month

NPG Paper of the Month: "Inferring the instability of a dynamical system from the skill of data assimilation exercises"

Yumeng Chen · April 25, 2022 · Climate, Dynamical systems, Earth, EGU Divisions, EGU General Assembly, ensemble, forecast, Multiscale dynamics, Nonlinear, Nonlinear Processes in Geosciences, NPG Paper of the Month, Outreach, Statistics · No Comments



NP Interviews

NP Interviews: the 2021 Lewis Fry Richardson Medal Berengere Dubrulle

Tommaso Alberti, Davide Faranda and Jonathan Demaeyer · November 15, 2021 · EGU Divisions, EGU General Assembly, Lewis Fry Richardson medal, Nonlinear Processes in Geosciences, Outreach, Science Communication · No Comments




- Posting frequency: 1.5 post per month (a bit reduced wrt 2020-2021, although higher than EGU avg. ~1.2)

Highlights from 2021-2022 - Social media

Twitter

@EGU_NP

← **EGU Nonlinear Processes in Geosciences Division**
1,128 Tweets



EGU Nonlinear Processes in Geosciences Division
@EGU_NP

This is the official Twitter channel of the Nonlinear Processes in Geosciences Division (NP) of the European Geosciences Union (EGU).

📍 Munich, Germany 🔗 egu.eu/np/home/ 📅 Joined July 2019

165 Following **337** Followers

Edit profile

Instagram

@egu_np



egu_np Modifica profilo ⚙️

Post: 33 99 follower 86 profili seguiti

EGU NP Division
This is the official Instagram channel of the Nonlinear Processes in Geosciences Division (NP) of the European Geosciences Union (EGU).
egu.eu/np/home

Slack

NP Nonlinear Processes in G...
nonlinearproc-meq7662.slack...

Total messages
On the free version of Slack, you can only access your most recent 10k messages. [See subscriptions](#) 280

Invite people to Nonlinear Processes...
Create a channel

Preferences ⚙️
Settings & administration >

Tools >

Sign in on mobile 📱

Sign out of Nonlinear Processes in G...

- A slight increase in terms of followers has been also observed this year, especially on Twitter (+83)
- More efforts are although still needed

Highlights from 2021-2022 - EGUsphere

- preprints in the domain of Earth, Space, and Planetary sciences in a diverse, inclusive, and systematic collection of contributions



The EGU interactive community platform

 ABSTRACTS & PRESENTATIONS ▾ PREPRINTS ▾ ABOUT ▾ 



Apply as moderator

<https://webforms.copernicus.org/egusphere/moderator-application>

Future plans for 2022-2023

BLOG

New blog ideas (NP competition)

Video recordings of our NP Interviews on EGU Youtube

OUTREACH

Additional campfires (are you interested?)

Special Issue on our journal NPG (by invitation only based on campfire)

WISHES

Creating a team of ECS that could manage the different things (social media, blog, EGU-related activities)

Searching for the incoming ECS representative, share the voice!!!

Division on Nonlinear Processes in Geosciences

(6) NP Campfire on « Scaling and Multifractals »

by Auguste Gires (co-organiser of the Campfire)

NP Campfire : “Scaling and multifractals : from historical perspectives to recent developments”

Webinar 1 : 11/01/2022 10:00-11:30

- **Bérengère Dubrulle** : “Global and local multifractal analysis”
- **Daniel Schertzer** : “A century of cascades and the emergence of multifractal operators”

Webinar 2 : 18/01/2022 16:00-17:30

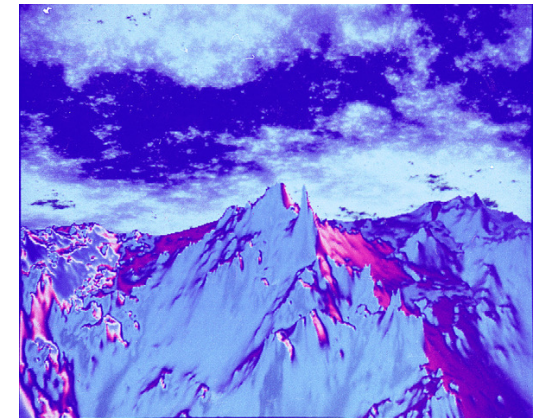
- **Shaun Lovejoy** : “Multifractals, Intermittency, Spectra and Climate Variability Across Scales”
- **Witek Krajewski** : “Scaling of peak flows in a river network”

Webinar 3 : 25/01/2022 10:00-11:30

- **Andreas Langousis** : “Robust estimation of rainfall extremes and their evolution in a changing climate: A CONUS-wide assessment based on multifractal theory”
- **Adrian Tuck** : “Scaling Up: Molecular to Meteorological via Symmetry Breaking”

Webinar 4 : 01/02/2022 16:00-17:30

- **François Schmitt** : “Discrete and continuous multifractal cascade models: historical roots and application to turbulence”
- **Charles Meneveau** : “A new multifractal version of Navier-Stokes based model of velocity gradients in turbulence”



Adapted from G. Sarma et al. 1991

Organizing committee :

- Auguste Gires (HM&Co – ENPC, France)
- Tommaso Alberti (INAF-IAPS, Italy)
- Yongxiang Huang (Xiamen University, China)



More info and pdf : <https://hmco.enpc.fr/scaling-and-multifractals-campfire/>

NP Campfire : “Scaling and multifractals : from historical perspectives to recent developments”

Main figures for participation :

- Registered (i.e. got registered on the list egu_np_campfire_multifractals@liste.enpc.fr): 223
- Webinar attendance 1 to 4 : 118, 100, 61, 71
- Total (removing duplicates) : 171

Summary of the results out of 50 answers (including 35% of ECS)

Campfire was highly appreciated :

- 90 % positive feedback (60% excellent and 30% good)
- Quality of speakers widely appreciated
- Pdf and videos were also appreciated

Good for increasing NP visibility :

- 30% of attendees never attended EGU- NP sessions at the GA
- 47% of attendees never submitted abstracts to EGU-NP sessions
- Respondents indicate it will foster their interest in the theme and NP sessions (>80%)

Room for improvement :

- Widen range of applications discussed (space plasmas, geology...)
- More room for discussion on open issues. Suggestion of a panel discussion with all speakers
- Date not perfect with regards to EGU abstract submission

Division on Nonlinear Processes in Geosciences

(7) NPG journal reports and news

by Daniel Schertzer (executive editor)

**Thanks for listening and please
comments or questions...**

