

How inclusive is the EGU?
A study on the representation of European countries of affiliation
across the editorial boards of EGU journals

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The country of host institution affiliation of the editorial boards of EGU journals was studied based on the information available on EGU website. <https://www.egu.eu/publications/open-access-journals/>

EGU journals considered: Annales Geophysicae (ANGEO), Atmospheric Chemistry and Physics (ACP), Atmospheric Measurement Techniques (AMT), Biogeosciences (BG), Climate of the Past (CP), Earth Surface Dynamics (ESurf), Earth System Dynamics (ESD), Geochronology (GChron), Geoscience Communication (GC), Geoscientific Instrumentation, Methods and Data Systems (GI), Geoscientific Model Development (GMD), Hydrology and Earth System Sciences (HESS), Natural Hazards and Earth System Sciences (NHES), Nonlinear Processes in Geophysics (NPG), Ocean Science (OS), SOIL, Solid Earth (SE), The Cryosphere (TC), Weather and Climate Dynamics (WCD).

All positions 1176 were considered, no matter the status: Advisory board member (9), Associate editor (305), Chief editors (13), Co-editor (28), Co-editor-in chief (14), Editors (526), Executive editors (45), Honorary editor (1), Inactive editor (2), Main editor (3), Managing editor (1), Senior editor (9), Topical editors (220).

Countries represented are: Argentina, Australia, Austria, Belgium, Brazil, Canada, Chile, China, Cote Ivoire, Croatia, Czech Republic, Denmark, Ethiopia, Finland, France, Germany, Greece, Hong Kong, India, Israel, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Russian Federation, Slovenia, South Africa, Spain, Sweden, Switzerland, Uganda, Ukraine, United Kingdom, United States, Zambia (figure 1). Main editors (main, chief, executive, advisory, senior) are based in the following countries: Australia, Austria, Belgium, Canada, China, Denmark, France, Germany, Greece, India, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, United States.

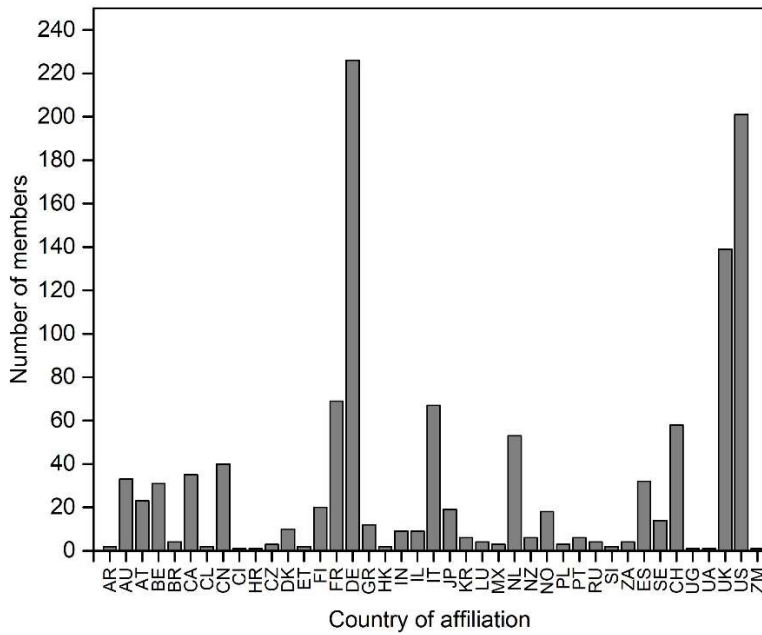


Figure 1: Distribution of affiliation country of all 1176 editorial board members of EGU journals. Data represents the actual number of positions for each country. Data taken from EGU website.

Editors with European affiliation count to 792, making up to 67% of all positions (figure 2), followed by positions occupied by scientists with host institutions based in North America (20%). Most of the editors based in Europe come from Germany, UK, France, Switzerland, Netherlands and Italy, as expected (figure 3). Nordic countries (Denmark, Sweden and Finland) as well as countries in Southern Europe (Spain, Portugal and Greece) have a relative reduced participation with less than 5% of the total number of editors each.

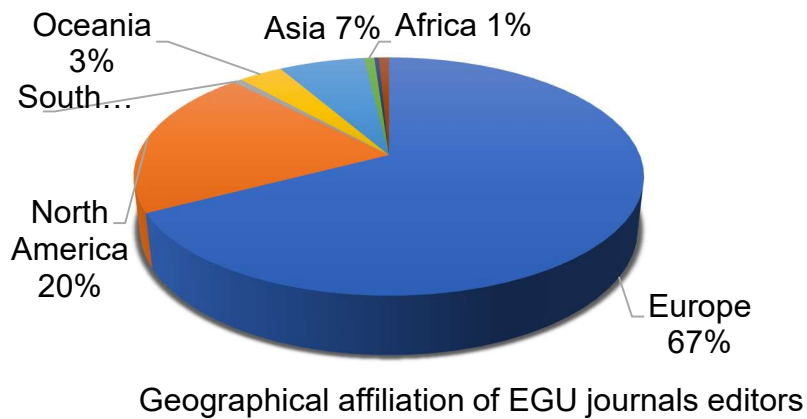


Figure 2: Geographical distribution (% of total) of host institution of all 1176 editorial board members of EGU journals. Data taken from EGU website.

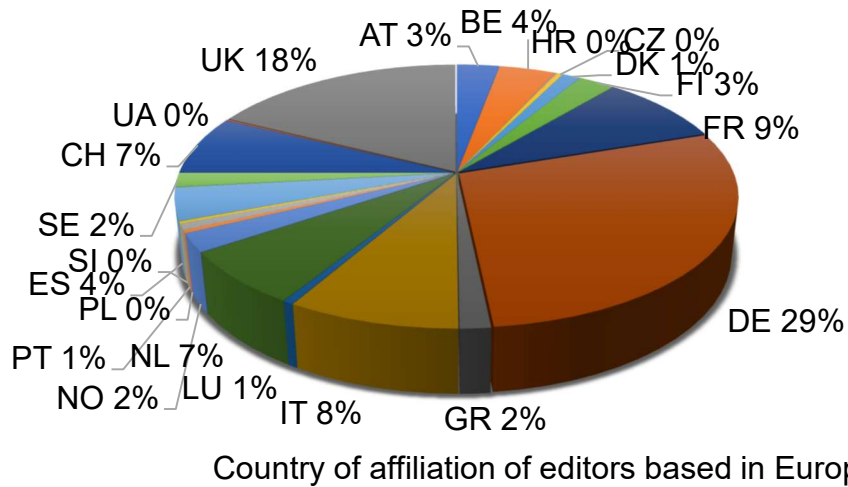


Figure 3: Percentage distribution of host institution countries, considering only the 792 editors with European affiliation. Data taken from EGU website.

The unexpected result of the study is that 21 European countries have no representative at all. These countries are Albania, Andorra, Belarus, Bosnia and Herzegovina, Bulgaria, Estonia, Hungary, Iceland, Ireland, Latvia, Liechtenstein, Lithuania, Malta, Moldova, Monaco, Montenegro, North Macedonia, Romania, San Marino, Serbia and Slovakia. Other countries with very limited representation are: Poland and Czech Republic (3 editorial positions), Slovenia (2 positions), Croatia and Ukraine with one position each. Except Iceland and Ireland one can see that all these countries are geographically located in Eastern and Central Europe (figure 4). In total their editorial representation amounts to 1.3% of the total number of EGU journal editors based in Europe. This is extremely low, as the population of these countries represents about 29% of Europe's population and their scientific productivity based on Scopus indexed articles published currently amounts to 11.6% of Europe's output.

In order to assess how significant is the degree of underrepresentation of these countries, we compared the current data with other performance indicators such as the number of publications indexed in Scopus in the field of Earth and Planetary Sciences, participation in EGU (based on the relative number of given presentations), EGU Awards as well as EGU award nominations (table 1). **Collectively, the EGU presenters with a host institution based in the above mentioned severely underrepresented countries amount to 8.1% of the European presenters during the recent years. The share of 1.3% in editorial representation is significantly lower than that of award nominations (about 4%) and surprisingly, even lower than the share of EGU awards (1.7%).**

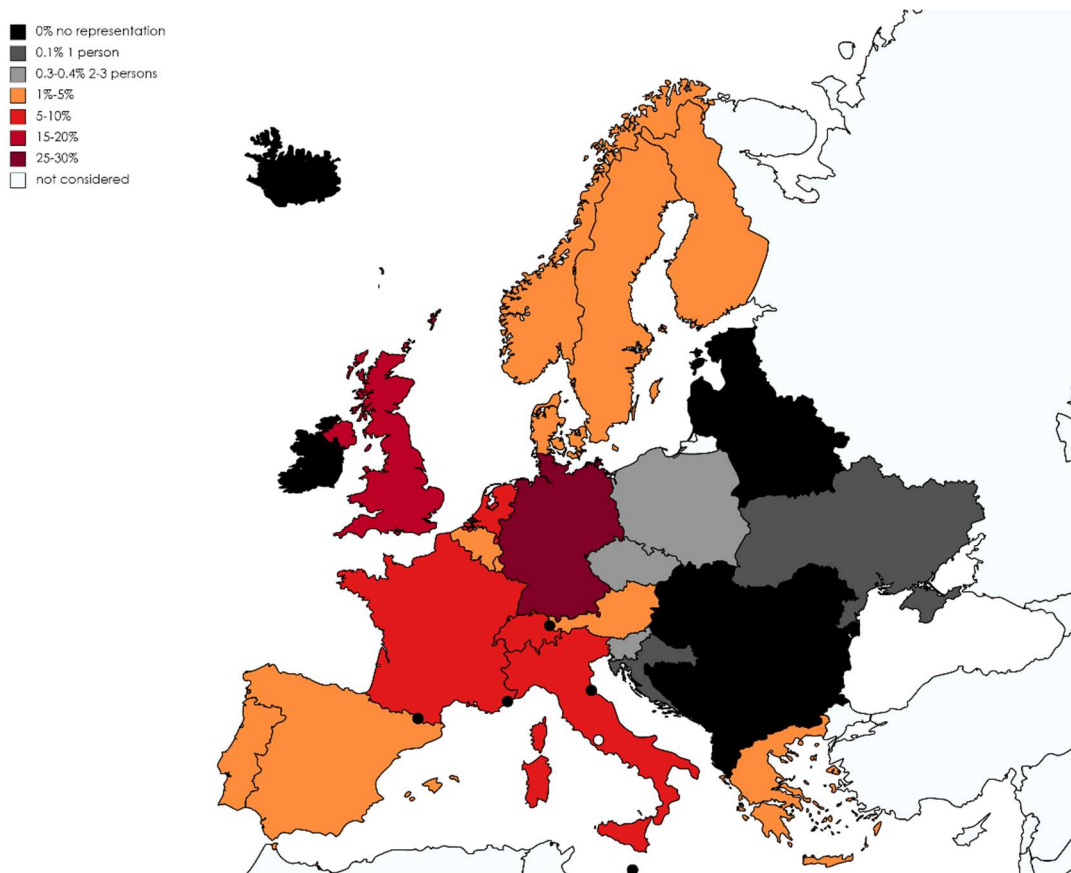


Figure 4: Schematic map for a geographical representation of data presented in figure 3.

Table 1. Comparison between the relative scientific production (based on Scopus-indexed publication during 2004-2021, excluding conference proceedings (query : (SUBJAREA(EART) AND AFFILCOUNTRY(X) AND PUBYEAR >Y and PUBYEAR < Z AND (EXCLUDE (DOCTYPE,"cp"))), relative participation in EGU meetings (data provided by Johanna Stadmark), EGU awards and medals statistics (https://cdn.egu.eu/static/35c625e7/awards/egu_awards_and_medal_statistics_2014-2021.pdf) and representation in editorial positions for European Countries.

	% Publications in Europe 2004-2021 (Scopus)	% European EGU presenters 2015-2021	% European Award nominations (2017-2021)	% Awards for European Scientists (2017-2021)	% European Editors in EGU Journals
AL	0.0	0.0	0.0	0.0	0.0
AD	0.0	0.0	0.0	0.0	0.0
AT	2.2	5.3	2.5	2.3	2.9
BY	0.1	0.0	0.0	0.0	0.0
BE	2.3	2.5	3.2	3.5	3.9
BA	0.0	0.0	0.0	0.0	0.0
BG	0.3	0.2	0.0	0.0	0.0
HR	0.5	0.3	1.1	1.2	0.1
CZ	1.6	1.8	0.3	0.0	0.4
DK	2.0	1.4	2.1	1.2	1.3
EE	0.3	0.3	0.1	0.0	0.0
FI	1.8	1.8	0.8	2.3	2.5

FR	12.2	10.2	11.1	13.8	8.7
DE	15.8	22.5	18.2	20.1	28.5
GR	1.5	1.4	0.6	0.6	1.5
HU	1.0	1.2	0.3	0.0	0.0
IS	0.3	0.4	0.7	0.0	0.0
IR	0.9	0.8	0.1	0.0	0.0
IT	9.8	9.7	9.7	10.3	8.5
LV	0.1	0.1	0.0	0.0	0.0
LI	0.0	0.0	0.0	0.0	0.0
LT	0.2	0.1	0.1	0.0	0.0
LU	0.1	0.2	0.3	0.6	0.5
MT	0.1	0.0	0.1	0.0	0.0
MD	0.0	0.0	0.0	0.0	0.0
MC	0.0	0.0	0.0	0.0	0.0
ME	0.0	0.0	0.0	0.0	0.0
NL	4.9	4.4	7.4	3.5	6.7
MK	0.0	0.0	0.0	0.0	0.0
NO	2.8	3.1	1.5	1.2	2.3
PL	3.5	1.9	0.6	0.6	0.4
PT	1.6	1.1	0.4	1.2	0.8
RO	0.6	0.7	0.1	0.0	0.0
SM	0.0	0.0	0.0	0.0	0.0
RS	0.3	0.2	0.6	0.0	0.0
SK	0.5	0.2	0.0	0.0	0.0
SI	0.5	0.3	0.0	0.0	0.3
ES	7.1	4.6	4.3	2.3	4.0
SE	3.0	2.4	4.7	3.5	1.8
CH	4.2	6.4	7.5	8.6	7.3
UA	0.9	0.2	0.0	0.0	0.1
UK	17.2	12.6	20.6	23.0	17.6

For a better visualization, we have divided the countries of affiliation of the editors of EGU journals in three categories using the data presented in table 1 and defining as an arbitrary indicator the ratio between the share of editorial positions in EGU and the share of Scopus indexed publications of Europe for each country. We consider that a value of 0.5, in other words a relative share of scientific publications twice of that of editorial representation to be an indication of underrepresentation. Figure 5 presents the relative share in editorial representation in EGU journals, EGU participation as well as scientific publications for severely underrepresented countries (a- ratio between 0 and 0.5), countries that are slightly underperforming in terms of editorial EGU representation (b-ratio between 0.5-1.0) and editorially well represented countries (c-ratio higher than 1).

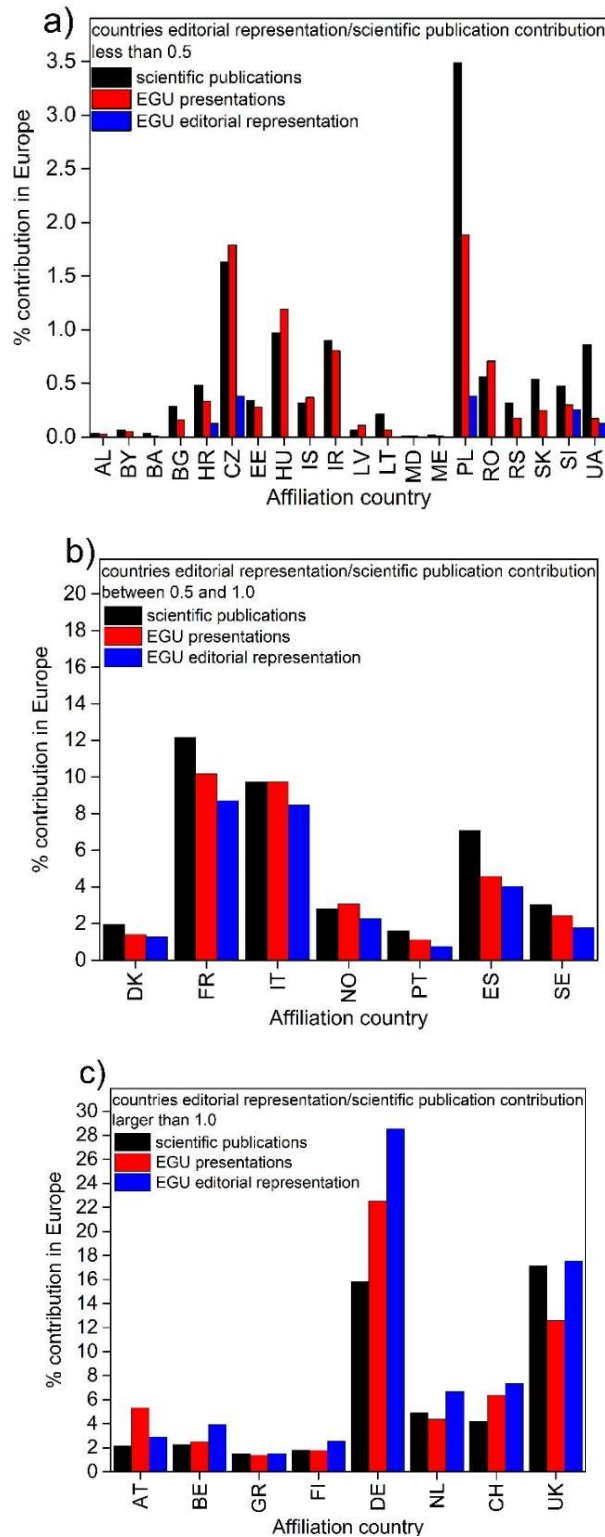


Figure 5: Comparison between percentage contribution of scientific publication in the field of Earth Sciences indexed in Scopus (2004-2021), EGU presentations (2015-2021) and editorial representation in EGU journals for underrepresented (a- ratio between editorial representation and relative contribution of publications less than 0.5), underperforming (b- ratio between the relative contribution editorial representation of publications between 0.5-1.0) and performing countries (c- ratio between the relative contribution editorial representation to publications between over 1.0) countries. Countries with less than 500 000 inhabitants are not shown as statistical significance is questionable due to the reduced number of authors with such affiliations.

Data presented above clearly shows that scientists with host institutions based in Eastern and Central Europe (Albania, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Hungary, Iceland, Ireland, Moldova, Montenegro, North Macedonia, Romania Poland, Serbia and Slovakia, Slovenia, Ukraine), Baltic States (Estonia, Latvia, Lithuania), Iceland and Ireland are severely underrepresented in editorial boards of EGU journals. The mean publication output in the field of earth and planetary sciences (considering Scopus indexed articles) of the first most productive 150 authors of the mentioned states is as follows: Albania-5, Belarus-7, Bosnia and Herzegovina-3, Bulgaria-106, Croatia-90, Czech Republic-99, Estonia-32, Hungary-67, Iceland-69, Ireland-133, Latvia-7, Lithuania-25, Moldova-2, Montenegro-4, North Macedonia-5, Poland-172, Romania-76, Serbia-20 Slovakia-35, Slovenia-39, Ukraine-36. It seems thus reasonable to assume that scientists both able and willing to undertake representative positions within EGU journals exist.

EGU by-laws 9.3 state that “It is the task of the managing/executive editors to appoint topical editors of their respective journals. They shall consult the other members of the editorial board and, where appropriate, other members of the scientific community served by the journal.” In other words, existent editors are asked to suggest possible editors.

We have further examined thus whether the above mentioned severe underrepresentation can be attributed to **organizational proximity bias**. To do that we have examined individually the country of affiliation shares for each EGU journal and compared this share with the average overall share. For the 19 journals examined the number of countries with representation varies from 6 to 15, depending on the size of the editorial board (table 2). To examine the potential concentration of editors having affiliation in a certain country in a certain journal we have arbitrarily defined as threshold a value of 2 for the overall relative share (across all journal and editors with host affiliation in Europe) and the relative share in a particular journal. **36 such situation can be observed, relatively evenly distributed across journals: Austria (4), Belgium (3), Denmark (3), Finland (1), France (3), Germany (2), Greece (2), Italy (2), Netherlands (1), Norway (3), Portugal (1), Spain (2), Sweden (2), Switzerland (2), United Kingdom (4). 30 out of these 36 instances are also characterised by the presence of a main editor having the affiliation in a host institution in the same country.**

Table 2. Individual share of countries of host institution for EGU journals. Instances where a certain country is represented in the managing editorial board are shaded in pink. Instances where the relative representation of a country in a certain journal is double than the overall average representation are marked as bordered.

	ANGE O	AC P	AM T	BG	CP	ESUR F	ES D	Gchro n	GC	GI	GM D	HES S	NHES S	NP G	OS	SOI L	SE	TC	WC D	
Count	11	15	11	11	11	7	10	5	7	10	13	12	10	6	7	10	9	13	7	
Country	average	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%
AL	0.0%																			
AD	0.0%																			
AT	2.9%	2%		8%		6%		4%	11%	3%	6%	5%	7%				3%	3%		
BY	0.0%																			
BE	3.9%	4%	2%	3%	13%	6%	3%	3%			6%	3%		12%	6%	12%			3%	
BA	0.0%																			
BG	0.0%																			
HR	0.1%						3%													
CZ	0.4%	7%			3%															
DK	1.3%		1%		5%	6%														8%
EE	0.0%																			
FI	2.5%	4%	5%						5%	24%	2%						3%	3%	4%	
FR	8.7%	7%	7%	4%	8%	23%	19%	3%	9%	9%	13%	3%		20%	11%	10%	23%	8%	4%	

DE	28.5%	14%	42%	57%	23%	9%	26%	43%	30%	21%	6%	36%	22%	17%	28%	22%	10%	23%	20%	30%
GR	1.5%	21%	3%	1%										5%						
HU	0.0%																			
IS	0.0%																			
IR	0.0%																			
IT	8.5%	7%	4%	7%		6%		6%		5%	32%	2%	14%	36%	12%		7%	19%	2%	4%
LV	0.0%																			
LI	0.0%																			
LT	0.0%																			
LU	0.5%				3%								3%				2%			
MT	0.0%																			
MD	0.0%																			
MC	0.0%																			
ME	0.0%																			
NL	6.7%	4%	3%	9%	13%	6%		9%		12%	4%	23%	5%		6%	7%			7%	
MK	0.0%																			
NO	2.3%	11%	1%			6%		6%		5%	3%	2%		2%	6%				5%	9%
PL	0.4%			1%								2%					2%			
PT	0.8%						3%		5%					10%						
RO	0.0%																			
SM	0.0%																			
RS	0.0%																			
SK	0.0%																			
SI	0.3%		1%											2%						
ES	4.0%		3%	3%	3%	3%					6%	4%	5%	5%	12%	11%	20%	3%	2%	
SE	1.8%		2%	2%		3%	6%	3%				2%	2%					6%	3%	
CH	7.3%	11%	6%	7%	5%	14%	3%	9%	22%			4%	11%	2%			7%	3%	11%	26%
UA	0.1%										3%									
UK	17.6%	11%	19%	4%	18%	20%	35%	14%	35%	47%	3%	19%	8%	12%	16%	39%	22%	16%	25%	22%