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Sedimentologika

Sedimentologika:
a community-driven diamond open access journal in sedimentology

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Abstract

Sedimentologica is a community-driven Diamond Open Access (DOA) scientific journal for the publication of work in the broad area of sedimentology and stratigraphy. The journal aims to provide the academic community and society a platform guaranteeing permanent free publication and free access to peer-reviewed scientific studies focusing on all types of sedimentary processes, deposits, and environments across all spatial and temporal scales, on Earth or any other planetary body. *Sedimentologica* is part of an ongoing broader DOA movement in geosciences aspiring freedom from the financial barriers and pressures of private publishing houses, to provide direct and equal access to science for all citizens, scientists, and institutions worldwide. The published material will include research, review, methods and opinion articles, which will be free to share, as the authors will naturally retain the copyright. The manuscripts will be written in English and authors can attach a second abstract to each submission in the language of their choice, further allowing local communities, students, or decisional bodies to access, at least, a summary of the latest research overcoming potential language barriers. This journal is defined by Open Science principles to promote ethical dissemination and accessibility of science and knowledge, following high equity, diversity and inclusion standards. *Sedimentologica* emerged as a solution for the scientific community to sidestep structural inequality of the currently financially unsustainable academic publishing system and to commit to bibliodiversity. Our objective is to ensure that scientific findings remain accessible to all in order to keep advancing research and informing society on how we understand sedimentology and stratigraphy in the world around us. *Sedimentologica* is driven by the academic and scientific community for the community and society, promoting self-governance and adapting to the needs expressed by the community.

Keywords: Equity, publishing, reviewing, article, open science, sedimentary science

Introduction

At present, a large proportion of published science is kept behind the paywalls of private publishing houses, rendering it inaccessible to most of society (McGuigan, 2004; Pinfield, 2013). The revolution and growth of Open Access has changed the dynamics of the academic publishing system (Hobert et al., 2021; Piwowar et al., 2018). Policy makers have contributed to the global acceptance of the Open Access model, providing positive academic, economic and societal impact (Tennant et al., 2016). However, Open Access is hindered by ever increasing article processing charges (APC; Khoo, 2019), as feared by Pinfield (2013): “*In an open access world, will journal subscription inflation simply be replaced by APC inflation?*”. Indeed, in the digital era, this model has resulted in constant profit and revenue lift for the publishing industry giants, aggressively fighting for their market shares, while benefiting from the increasing competition for academic tenure, funding and reputation (Larivière et al., 2015; Van Noorden, 2013). In just 10 years, some APCs have increased from *ca.* \$3,000 for the highest Gold Open Access APCs to *ca.* \$11,000 (“Nature Neuroscience offers open access publishing,” 2022; Solomon et al., 2013). Initially conceived as a way to allow access to science for all, this model, when unregulated and implemented by large and influential commercial publishing houses, has shifted the financial burden from the reader to the author, maintaining a financially unsustainable and dysfunctional scholarly publishing market and a budget crisis for university libraries. Although more articles become available to the public, structural inequalities remain and poorly subsidized scientists and institutions face challenges to

publish open access articles in journals with good reputations and worldwide dissemination. It consequently hinders the visibility of their research (Pavan et al., 2018; Vrana, 2016) and the progress of their scientific careers and institutions (American Society for Cell Biology, 2013).

Policy makers, academic institutions, and funding agencies facilitated the open access transition to occur by gradually redirecting fundings to allow for generalization of open access publications (e.g., Regulations of the Swiss National Science Foundation on research grants Funding Regulations, SNSF, 2015; PLAN S initiative and European Research Council support; ERC, 2018; Breakthroughs for All: Delivering Equitable Access to America’s Research, Office of Science and Technology Policy of the White House, 2022), with an increasing reluctance to pay excessive APCs (cOAlition S, 2022; UNESCO, 2021). Private publishing entities (including predatory ones) have thrived in this system by capitalizing and generating income from public institutions (Hanscheid et al., 2018; Racimo et al., 2022). New actors emerged while old ones grew bigger without ever truly providing free access to science for all.

To guarantee more equity in science accessibility, scientists (including scholarly-driven societies) have come up with empowering community-driven initiatives. Building on the creativity of scholars from other disciplines, archiving/preprint platforms in geosciences have developed (e.g., EarthArxiv; <http://www.eartharxiv.org/>) providing a new way of overcoming paywalls and guaranteeing unrestricted access to articles to all for an unlimited period of time (Dekeyser, 2004). Non-profit organizations and societies have made efforts towards financial sustainability, redirecting their funds to their own journals and members, to

facilitate the dissemination of research in their domains. Overall, scientist/community-driven initiatives have appeared as an effective solution (Fuchs et al., 2013) to successfully trigger the profound changes in the academic publishing system expected by the scientific communities and society.

The domain of geoscience makes no exception. Diamond Open Access journals (DOA; i.e., journals publishing peer-reviewed articles without APC, free to read, publish, and share) in Earth Sciences have existed for more than a century (e.g., *The Italian Journal of Stratigraphy and Paleontology*; *Geologica Acta*; *Scientific Drilling*; *Journal of the Geological Survey of Brazil*; *Latin American Journal of Sedimentology and Basin Analysis*; *Geologia Croatica*; *Earth Science Malaysia*; *Geologica Belgica*; *Bulletin of the Geological Society of Finland*; *Geological Survey of Denmark and Greenland Bulletin*; *The Norwegian Journal of Geology*; *Geology of the Intermountain West*, *The Sedimentary Record*; *Notebooks on Geology*). These DOA journals supported by national geological societies or surveys have provided a necessary publishing avenue for manuscripts that do not necessarily fit the scopes of major international journals. More recently, the creation and success of *Volcanica*, a DOA journal with intended global distribution in geoscience to be free to access, publish in, read and share (Farquharson et al., 2018), has catalyzed the development of such community-driven DOA journals in Earth Science subdisciplines (e.g., *Tektonika*, *Seismica*, *Geomorphica*), including *Sedimentologica*. In this paper, we, the co-founders of *Sedimentologica*, aim to present the *Sedimentologica* initiative by providing an overview of its goals, creation process, current structure and future challenges.

1. *Sedimentologica*'s vision and goals

The goal of *Sedimentologica* is to provide high-quality scientific research in the broad field of sedimentology and stratigraphy, accessible to all, at no cost. Other existing sedimentology journals have similar objectives, but *Sedimentologica* differs from them in particular through the complete removal of APCs at any time, the type of articles accepted, the methods used to enhance access to all and the way editorial and peer-review process is approached and designed (Table 1).

1.1. Journal's content

Sedimentologica is open to all research related to the field of sedimentology and stratigraphy, including scientific studies of sediments, sedimentary processes and environments, to obtain globally applicable interpretations. Our community is interested in receiving studies integrating sedimentology with other scientific disciplines (e.g., geochemistry, microbiology, archeology, geomorphology, meteorology, hydrology, paleoclimate, tectonics) or transdisciplinary approach encompassing aspects of sedimentology in society and technology such as natural hazards forecast and management (e.g., coastal planning, tsunami and submersion risk, flooding management issues, landslide or hurricane forecasting).

Sedimentologica currently accepts four types of publications: research articles, review articles, method papers, and opinion pieces. Once established, most-likely after a few years, the journal plans to add new types of publications to its portfolio depending on the community demand.

Journals	Frontiers in Earth Sciences*	Journal of Sedimentary Research	Latin American Journal of Sedimentology and Basin Analysis	Sedimentary Geology	Sedimentology	The Depositional Record	The Sedimentary Record	Sedimentologica
Facies	Frontiers	SEPM (Society of Sedimentary Geology)	Asociación Argentina de Sedimentología	Elsevier	John Wiley & Sons, Inc.	John Wiley & Sons, Inc.	SEPM (Society of Sedimentary Geology)	University of Geneva Library
Publishing house	Frontiers	SEPM (Society of Sedimentary Geology)	Asociación Argentina de Sedimentología	Elsevier	John Wiley & Sons, Inc.	John Wiley & Sons, Inc.	SEPM (Society of Sedimentary Geology)	University of Geneva Library
Publishing model	OA	TPM OA	DOA	TPM OA	TPM OA	OA	DOA	DOA
Article Processing Charge (APC) for OA (if applicable)	\$ 2500 € 2150 (average max)	\$ 2700	\$ 0	\$ 3300	\$ 4000 £ 2700 € 3350	\$ 2400 £ 1550 € 1800**	\$ 0	\$ 0
Copyright owner	Authors	TPM: Publisher OA: Publisher	Authors	TPM: Publisher OA: Authors	TPM: Publisher OA: Authors	Authors	Authors	Authors
Type of papers	Regular Articles, Short Communications	Brief Research Report, Correction, Data Report, Editorial, Hypothesis and Theory, Methods, Mini-Review, Opinion, Original Research, Perspective, Review, Systematic Review and Technology and Code.	Research papers, reviews and technical notes	Original Research Articles (No specification on their website)	Original Research Articles, State of the Science, Discussions	Original Articles, Reviews, Methods, Editorials, Commentaries	High quality, short format, research or review articles	Research articles, Review articles, Method articles, Opinion pieces.
Length of papers	<ul style="list-style-type: none"> Regular Articles should be less than 7000 words of text excluding the abstract, the references and captions to figures. Short Communications should present new and important scientific results that are timely and lend themselves to speedy editorial handling. Short communications are limited to 1500 words. 	<ul style="list-style-type: none"> Original Research, Systematic Review, Methods, Review, Hypothesis and Theory, and Technology and Code: Maximum 12,000 words and maximum 15 Figures/Tables. Mini-Review, Perspectives, and Data Reports: Maximum 3,000 words and maximum 2 Figures/Tables. Opinion: Maximum 2,000 words and maximum 1 Figures/Tables. 	Not specified	Not specified	Original Research Articles: Unless by prior agreement with the Editors, manuscripts intended for submission should normally not exceed 8,000 words in length (including the title, abstract and main text, but excluding the references and figure captions).	<ul style="list-style-type: none"> Research articles: A length under 10'000 words (including the abstract and excluding title, figure captions, text in tables, and references) and 12 figures/tables are preferred. Review articles: A length under 12'000 words (including the abstract and excluding title, figure captions, texts in tables, and references) and 20-30 figures/tables. Method articles: A length under 10'000 words (excluding title, figure captions, texts in tables, and references) and 12 figures/tables are preferred. Opinion pieces: A length under 4'000 words (excluding title, figure captions, texts in tables, and references) and 3 figures/tables are preferred. 	<ul style="list-style-type: none"> Research articles: A length under 10'000 words (including the abstract and excluding title, figure captions, text in tables, and references) and 12 figures/tables are preferred. Review articles: A length under 12'000 words (including the abstract and excluding title, figure captions, texts in tables, and references) and 20-30 figures/tables. Method articles: A length under 10'000 words (excluding title, figure captions, texts in tables, and references) and 12 figures/tables are preferred. Opinion pieces: A length under 4'000 words (excluding title, figure captions, texts in tables, and references) and 3 figures/tables are preferred. 	<ul style="list-style-type: none"> Research articles: A length under 10'000 words (including the abstract and excluding title, figure captions, text in tables, and references) and 12 figures/tables are preferred. Review articles: A length under 12'000 words (including the abstract and excluding title, figure captions, texts in tables, and references) and 20-30 figures/tables. Method articles: A length under 10'000 words (excluding title, figure captions, texts in tables, and references) and 12 figures/tables are preferred. Opinion pieces: A length under 4'000 words (excluding title, figure captions, texts in tables, and references) and 3 figures/tables are preferred.
Languages	English	English	English, Spanish, Portuguese	English	English	English	English	English with a second abstract in the language chosen by the authors

*Sedimentology, Stratigraphy, and Diagenesis Section

**All publication charges are currently being paid for by the International Association of Sedimentologists.

OA: Open Access – when an article is accepted for publication, the author/s or funder/s pay an Article Processing Charge (APC). The final version of the published article is then free to read for everyone.

TPM: Traditional publishing model – published articles are made available to institutions and individuals who subscribe to the journal or who pay to read specific articles.

DOA: Diamond Open Access – when an article is not subject to APC, and is free to download and to share.

Table 1. Comparison of the different journals dedicated to sedimentology studies with similar scientific focus. Information are sourced from the respective mentioned journal websites.

In order to be considered for publication and further accepted, manuscripts must fulfill a set of requirements we attempt at listing here:

- The paper should be articulated with a clear and coherent structure and propose a level of English language understandable to all English speakers (i.e., native and non-native). The native-English level will not be a requirement to publish and reviewers shall not evaluate a manuscript on this basis, as long as the scientific message is clear, concise, and research questions are properly addressed and results are supported by data.
- Authors should define clear research questions and/or hypotheses, concise scientific aims and objectives, and define a rationale for research. This means providing a comprehensive evaluation of the currently available body of knowledge, placing the research within the context of previous studies.
- Data analysis should follow an investigative process with systematic description-to-interpretation path, following epistemic values in agreement with rules and policies for research ethic and scientific standards, guaranteeing full accuracy, consistency and reproducibility of communicated results and data used to develop arguments. This involves the systematic respect of Responsible Conduct of Research (I. of M. and N. R. Council, 2002): scientific integrity, objectivity, transparency, intellectual property and confidentiality, accountability, social responsibility and non-discrimination (i.e., the Singapore statement on Research Integrity; Resnik et al., 2011). Clear description of how, where, and when data were collected, processed and interpreted must be provided (i.e., details of experimental methods, material, workflows, codes scripts, analysis parameters, standard references, seismic horizons). This information should be available by the time

of publication (and optimally, during review), either as appendices to the manuscript or through links to publicly-available platforms (e.g., GitHub, Zenodo, Pangaea). Raw data should also be made available for reproducibility purposes unless unequivocal confidentiality agreement(s) preventing the authors to do so can be substantiated.

- The discussion requires critical writing and analysis. Original hypothesis should be tested and objectively challenged, highlighting implications of the main findings, but also the main strengths and weaknesses/limitations. Statements should always be accompanied by referencing multiple sources from peer-reviewed or publicly available material (e.g., research articles, preprints, MSc and PhD theses, abstracts, and material from other types of repositories) validating or discarding former and new scientific ideas, concepts and knowledge.
- The global and generic implications of the obtained results should be stated, highlighting the key novel findings and areas for future research. Not all results, interpretations, and outcomes necessarily have to be cutting-edge, groundbreaking or paradigm-shifting, as long as they are part of an important incremental growth in knowledge. These results will be accepted in *Sedimentologica* if the authors can explain how they advance ongoing knowledge on the given topic and guide further research directions.
- The work should be original (i.e., not submitted or published elsewhere) and represent a clear step forward. Any contributions where suspected research misconducts (falsification, fabrication or plagiarism, or other practices undermining the trustworthiness of research) are detected will be discarded and reported to the

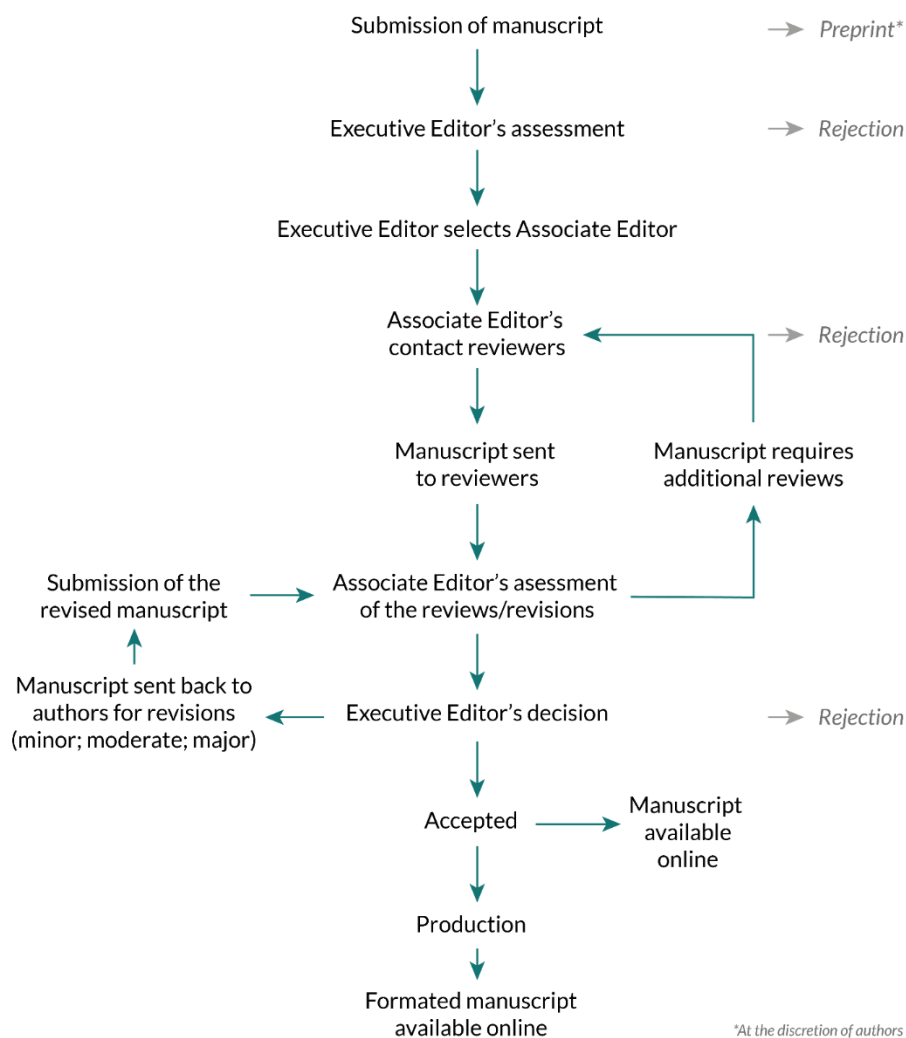


Fig. 1. Schematical route and key steps from manuscript submission to article publication.

appropriate authorities. Of note, manuscripts submitted to a preprint repository (e.g., EarthArXiv, ResearchSquare) or an institutional repository before initial submission to a journal will be considered as original work by *Sedimentologica*.

1.2. Reviewing process

Corresponding authors will submit their manuscript with the agreement of all co-authors, whose individual role and contribution will be clearly defined. Authors will decide whether they want their manuscript to be anonymized or not. In the case of an anonymous submission, the

authors will be responsible for providing anonymous documents that will prevent the reviewers from identifying them. Manuscripts will be assigned to an appropriate executive editor based on the topic it covers. The executive editor will assign the manuscript to an associate editor, who will be in charge of sending it to at least two appropriate reviewers. Reviewers to consider or to avoid must be suggested in the cover letter or dedicated window during submission. Reviewers will provide thorough reviews of the manuscript following standards of peer-review, allowing the associate editor to recommend the

manuscript to the executive editor for acceptance, minor to major corrections or rejection. The reviewers will be strongly encouraged to sign their reviews, required to provide constructive comments, to avoid anonymous bullying and to conduct a fair, responsible, non-discriminatory, transparent, and positive reviewing process. The editorial team will pay careful attention to prevent disrespectful, unfair and unconstructive reviews being forwarded to the authors. Reviewers not complying with the research ethic and scientific rules will be discarded from further participation in the review process or any other form of involvement with *Sedimentologica* and any suspected research misconduct, unethical and illegal practices reported by reviewers and editorial board will be investigated by an inquiry committee.

1.3. Equity, diversity and inclusion

Sedimentologica, as a DOA journal, will safeguard direct and equal access to scientific knowledge for all citizens, scientists in academia and industry, and institutions, worldwide. It will respect disciplinary, cultural and multilingualism and linguistic diversity to support a better integration of all communities in the field of sedimentology, to the global research landscape (i.e., bibliodiversity). This means that all individual scientists and all sedimentology-related topics will be treated equally. Diversity of all kind matters in *Sedimentologica*. Embracing high standards of equality and inclusion, to avoid ethnic, gender or social stratification and their common intersectionality, is a priority in our practices towards the community and functioning of the journal. We want to provide social equity and collaborative work, mutual respect and fairness, empowering groups often targeted by different systems of

oppression, bias and discrimination, in order to safeguard access to the same opportunities at any hierarchical levels, to all volunteers who want to engage. In this respect, the steering committee in agreement with the executive editorial board and the community has set up some objectives, rules, and tools:

- The executive and associate editorial boards are, and will remain gender balanced. This approach aims towards a fair representation of all groups (e.g., gender, sexual orientation, ethnicity and origins, (dis)ability, class, religion, and any other identified groups), as we intend to reach a broad range of applicants across countries and provide open opportunities for all. A record of these data will be published regularly (see below), for transparency as a way to enable equity, diversity and inclusion at all levels (Ali et al., 2021; Vila-Concejo et al., 2018). Our efforts will also be monitored and audited regularly to ensure progress.

- Dedicated mentoring process through which experienced executive editors will deliver fast-track training to associate editors with less editorial experience. The goal is to promote access to editorial responsibilities to people who generally have less opportunities to reach them. We anticipate that our commitment and future efforts to insure diversity and inclusion will lead to equal representation for all, at all levels of hierarchy roles hopefully empowering minoritized and marginalized groups (e.g., more diversity in the editorial team will lead to more diversity published authors and reviewers) and consequently make a positive impact on equity and inclusion in the field of sedimentology in the longer term (Demeter, 2020).

- A short summary for non-specialist in non-technical words (i.e., plain language lay summary) will be compulsory in English for all accepted articles, to allow for better

dissemination of science to the general public outside of the academic domain.

- A translation of the title, abstract and lay summary, in one language of the authors' choice, will be strongly encouraged and published along the article. It should allow for non-English speaking communities to easily access the essential content of the presented research.

- Resources will be provided for the author to ensure the accessibility of published content which should be Perceivable, Operable, Understandable and Robust (POUR Web Content Accessibility Guidelines), for instance using inclusive scientific color blindness-friendly themes in figures (e.g., Cramer et al., 2020).

2. *Sedimentologica* creation: diamond open access and sustainable economic model

Sedimentologica is a DOA journal: “a form of non-profit academic publishing that makes academic knowledge a common good, reclaims the common character of the academic system, and entails the possibility of fostering job security by creating public service publishing jobs” (Fuchs et al., 2013). The academic publishing model relies on the ‘voluntary’ labour of academics and scientists across the world, from which commercial publishers make hefty profits. Here, several adjustments have been made to fully authorize the independence of the journal from private publishing houses and guarantee the long-standing existence of the journal.

Sedimentologica currently relies on:

- A steering committee willing to provide free time (or dedicate a proportion of their working hours) in order to (cf. section 3.2): i) manage journal organization, functioning,

- strategy and future directions ii) recruit editorial teams, iii) ensure the framing of the guidelines, rules and journal policies, manage legislative requirements, finances and funding or partnerships and, iv) maintain a dialogue with the community, pushing forward the *Sedimentologica* project. The steering committee is also there to guarantee neutrality, preventing conflict of interests at all levels and ensure inclusivity, fairness and collaborative working environment for all.

- Free and open-source system: the Open Journal Systems (OJS) from the Public Knowledge Project (<https://pkp.sfu.ca/>) is used for managing submissions and editorial workflow, producing scientific articles online and enrolling the journal through a long-term preservation digital scheme guaranteeing continuous access to published content. This includes preservation service via the PKP PN plugin, using the LOCKSS Program ([Lots of Copies Keeps Stuff Safe](https://keepers.issn.org/)), ensuring that multiple copies of content are securely stored on geographically distributed and decentralized network of servers maintained by libraries. A multiple digital preservation scheme is a requirement to comply with Plan S, to obtain the DOAJ Seal Status (<https://keepers.issn.org/>) but also to apply to national funding agencies grants, all being objectives *Sedimentologica* aims to achieve in the near future.

- The Open Access Publications (OAP) service of the University of Geneva Library. A partnership has been signed between OAP and *Sedimentologica* to secure administrative support. It is a service accessible to members of the University of Geneva, Switzerland, offering support and technical assistance to create, host, and manage gold and diamond open access journals. It is funded by the University of Geneva and will cover the running cost of the OJS platform, the inherent costs of Digital Object Identifier (DOI)

registration and search engine and scientific database indexing.

- Limited external funding from non-profit organizations, national agencies and societies. To-date, the Society for Sedimentary Geology (SEPM; <https://www.sepm.org/home>) has granted *Sedimentologica* the financial support to allow promotion and launch of the journal. Other non-profit organizations, national agencies or societies willing to have a partnership with *Sedimentologica* to promote open science are also welcome. Such external fundings will be allocated to the registration of the domain www.sedimentologica.org, the payment of abstract fees allowing the presentation of the *Sedimentologica* initiative in international congresses, the creation and distribution of marketing packages and advertising tools, the potential outsourcing of technical and audit services (e.g., webmaster, proof-reader, typesetter) and to implement our digital preservation scheme.

- The *Sedimentologica* community, including the editorial teams, the reviewers, and all scientists and members are providing their time, energy and support on many different aspects of the project to contribute to the progress and expansion of the *Sedimentologica* initiative, without any financial retribution but with the conviction that scientific communities shall participate in their own governance.

3. Structure

The journal's structure includes three components: i) the community, which consists of readers, authors, reviewers, supporters, members, followers of *Sedimentologica*, ii) the steering committee, and iii) the executive and associate editorial boards.

3.1. The community

The community is the primary user of the journal, through submission and readership and has a central part in *Sedimentologica*'s decision-making, as it feeds ideas, discusses them, and provides feedback. It also contributes members to the *Sedimentologica* steering committee, editorial boards, the reviewers pool and other subgroups (i.e., commissions for advancing specific aspects of the initiative) on a regular basis. The community is consulted using several platforms that all have advantages and drawbacks: social media, and in particular Twitter, via the [@Sedimentologica](https://twitter.com/Sedimentologica) account, emails through the contact@sedimentologica.org address and mailing list, and channels in the Slack® platform that can be joined at any time by anyone through email request.

3.2. The steering committee

The steering committee is a horizontal organizational structure with members of the *Sedimentologica* community forming an advisory group of currently eight volunteers willing to be in charge of the journal development and management on a regular basis. It is open to any pro-active member of the community willing to take responsibilities for a given period of time, using their skills, experience and knowledge in different sectors. The steering committee members must be aware that derivation of personal benefits from actions or decisions made in their official capacity and any kind of conflict of interest are forbidden and at any time they must respect the code of conduct of *Sedimentologica*. The main goal of the steering committee is to take strategic decisions regarding the journal organization, functioning and future directions and ensure capacity-building and guidance to the different pro-active commissions. The main

tasks include i) constitution of the editorial board by internal vote and discussion, constitution of the associate editorial board in agreement with the executive editorial board and collaboration to define the types of articles, form of publications and designs, ii) quality control of article production steps, guidance and assistance for the functioning of the hosting platform and website, iii) constitute, coordinate, organize and steer work undertaken, including the coordination of potential commissions (e.g., communication and networking, design and marketing, production & publication, IT, ethics and EDI), iv) frame the guidelines, rules and journal policies, the code of conduct of *Sedimentologica*, manage legislative requirements, finances and funding or partnerships. The steering committee takes important decisions concerning the journal in agreement with the feedbacks of the community consulted via the Slack® platform and by votes, which is structured into different theme-based channels for discussions and exchanges. The steering committee is responsible to maintain dialogue with the community, guarantee neutrality, ensure inclusivity for all and must not influence editors and reviewers' decisions whatsoever.

It does not get involved in the scientific content of the journal *per se*, a task left to the executive and associate editorial boards. Except for this white paper, members of the steering committee are not allowed to publish in the journal as first or corresponding author until the first issue is published (one-year moratorium), but can be co-authors on manuscripts submitted during this time.

3.3. The editorial board

The editorial board is responsible for the scientific content and quality of the journal. The editorial board is organized in two levels,

which must both maintain a good communication and report any infringement of publication ethics (research misconduct, unethical and illegal practices) and transgression of the code of conduct of *Sedimentologica*. The first level currently comprises eight executive editors (EE; this number may change in the future), with a combined scientific expertise that should cover as much sedimentology as possible. The second level comprises sixteen associate editors (AE; this number may change in the future), covering most of the aspects of sedimentological research.

- Executive editors are the first contact point with authors, and are in charge of providing the initial assessment of the manuscript, assigning manuscripts to an AE, based on expertise, and taking final decisions regarding review rounds, the degree of correction needed, acceptance or rejection, and publication. Additionally, the EE may mediate conflicts between authors and reviewers, to ensure fairness, respect and constructivism are kept at all times during the review process. They were selected by the steering committee after spontaneous application to the call by *Sedimentologica* or solicited applications. They constitute the EE board, which is generally composed of scientists who have gained previous experience in editorial work, being former executive editors or associate editors in other journals. They are appointed for a duration of 2 to 5 years, potentially renewable once.

- Associate editors are responsible for handling the reviewer-manuscript relationship. They contact and assign reviewers (minimum 2) to a manuscript, they handle the review, and provide an assessment of their content to the EE. They were selected by the EEs together with the steering committee, after spontaneous or solicited

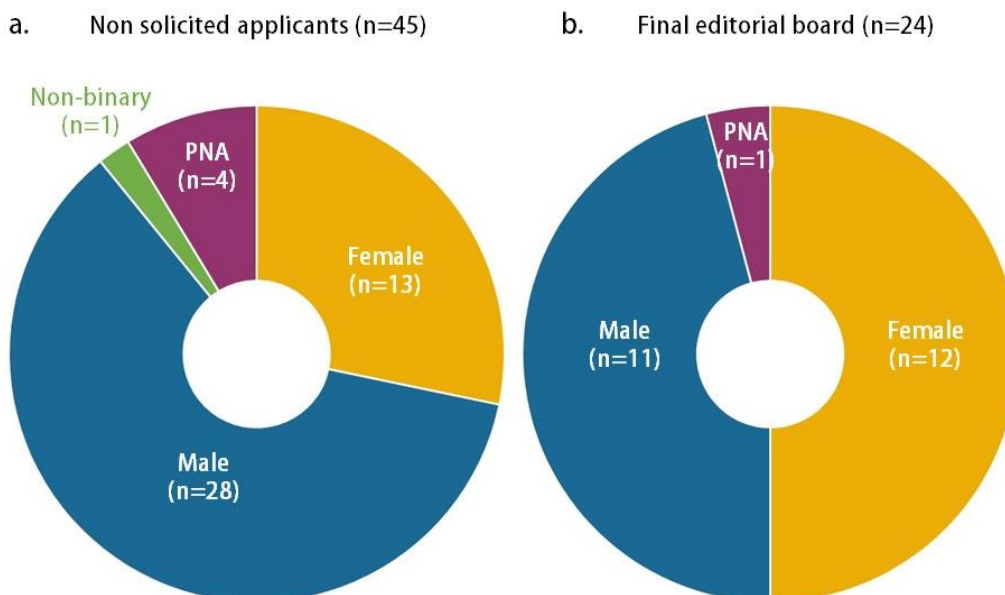


Fig. 2: Gender representation of applicants (non-solicited) and of the final editorial board (including executive and associate editors) after solicitation of female-identifying candidates (n=4). Labels correspond to answers of applicants to the box labeled “gender” in the editorial board application form (PNA: Prefer Not to Answer).

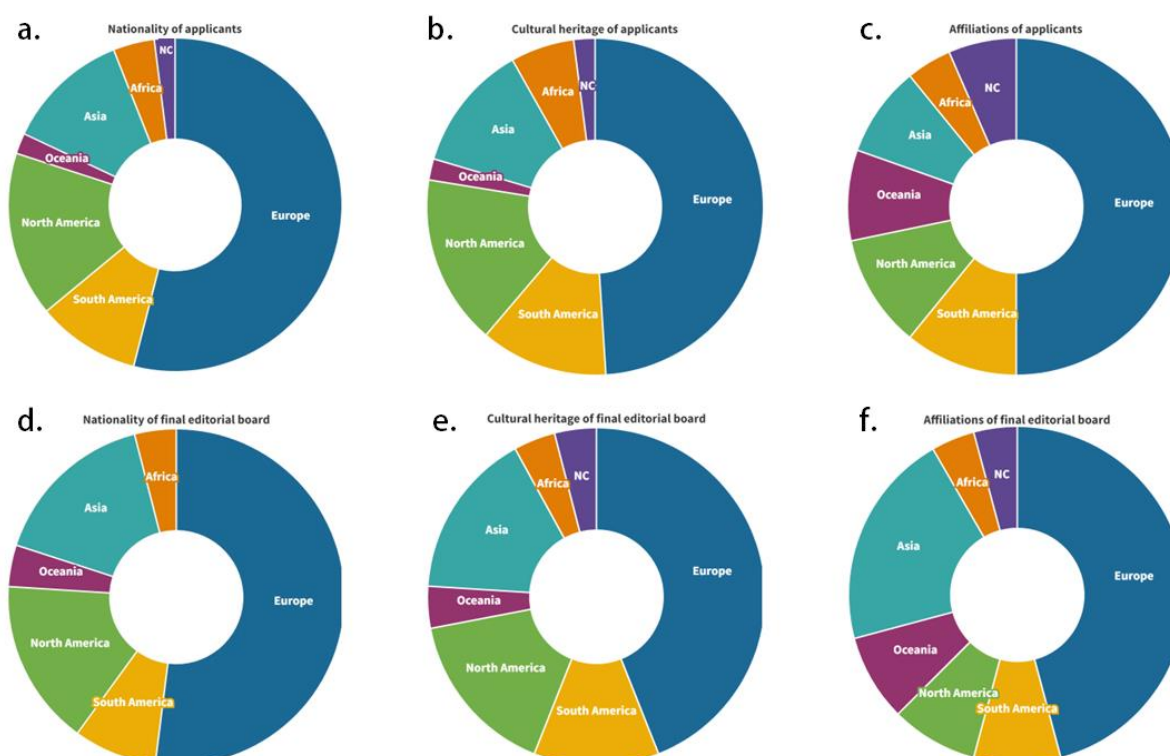


Fig. 3: Nationality, cultural heritage and affiliations of non-solicited applicants (a-c respectively) and final editorial board (d-f respectively) per continents. (NC: non-communicated).

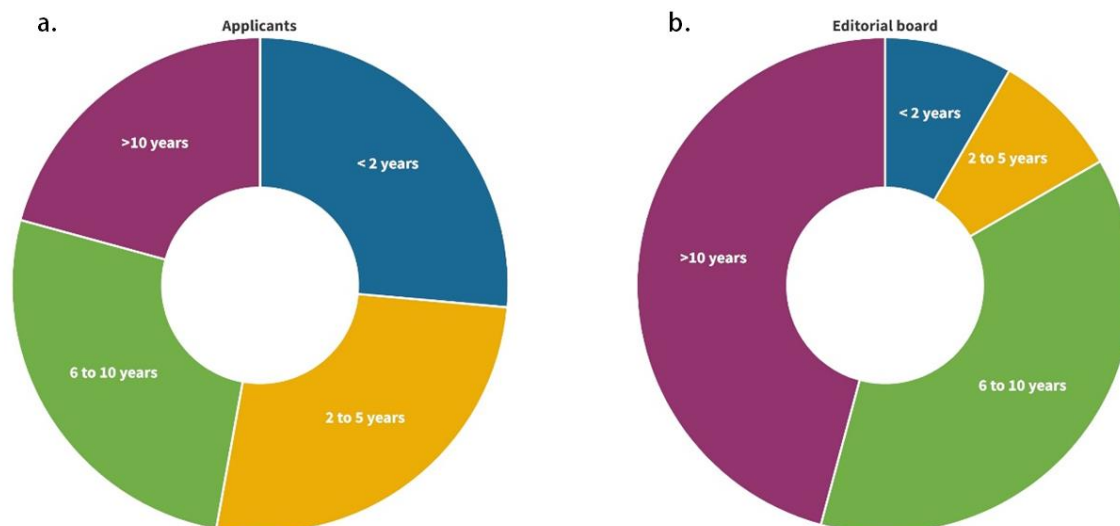


Figure 4: Experience counted as post-PhD years of (a) applicants (non-solicited) and (b) members of the 2022 *Sedimentologica* Editorial Board.

applications. The AEs must have significant scientific research experience by the time they are appointed, and must have had a record of peer-reviewed published articles, as a first or corresponding author. AEs may or may not have experience in editorial work and will be trained for this work by the executive editorial board (*cf.* section 1.3). They are appointed for a duration of 2 to 5 years, renewable once.

The editorial board has a diverse combined scientific expertise and represents the sedimentology community in its entirety, thematically, geographically- and gender-wise. Data have been collected from editorial board applicants (winter 2022) on gender, post-PhD effective experience, affiliation, nationality and cultural origin (Figs. 2 to 5). Applicants (spontaneous applicants n=46; solicited applicants n=5) were 55% male, 35% female, 2% non-binary and 8% “Prefers Not to Answer” (PNA, Fig. 2a) for a final 2022 editorial board of 46% male – 50% female – 4% PNA composition (Fig. 2b). The nationalities of non-solicited applicants (n=50) are from Europe (54%), North-

America (16%), Asia (12%), South-America (10%), Africa (4%) and Oceania (2%), and 2% did not provide it (Fig. 3a). The 2022 Editorial board is composed of people from Europe (52%), North-America (16%), Asia (16%), South-America (8%), Africa (4%) and Oceania (4%) (Fig. 3d). Countries of cultural heritage of applicants (n=49) were for European (48%), North-American (16%), South-American (12%), Asian (12%), African (6%), Oceanian (2%) and “preferred not to answer” (4%) (Fig. 3b). The 2022 *Sedimentologica* editors have cultural heritage originating from Europe (44%), North-America (16%), Asia (16%), South-America (12%), Africa (4%) and Oceania (4%), and 4% PNA (Fig. 3e). Affiliations (n=46, spontaneous applicants only) were from Europe (50%), North America (11%), South America (11%), Oceania (9%), Asia (9%), Africa (4%) and non-affiliated (6%) (Fig. 3c). The 2022 editorial board is composed of people employed in Europe (48%), Asia (21%), Oceania (9%), North America (9%), South America (9%) and Africa (4%) (Fig. 3f). The list of nationalities,

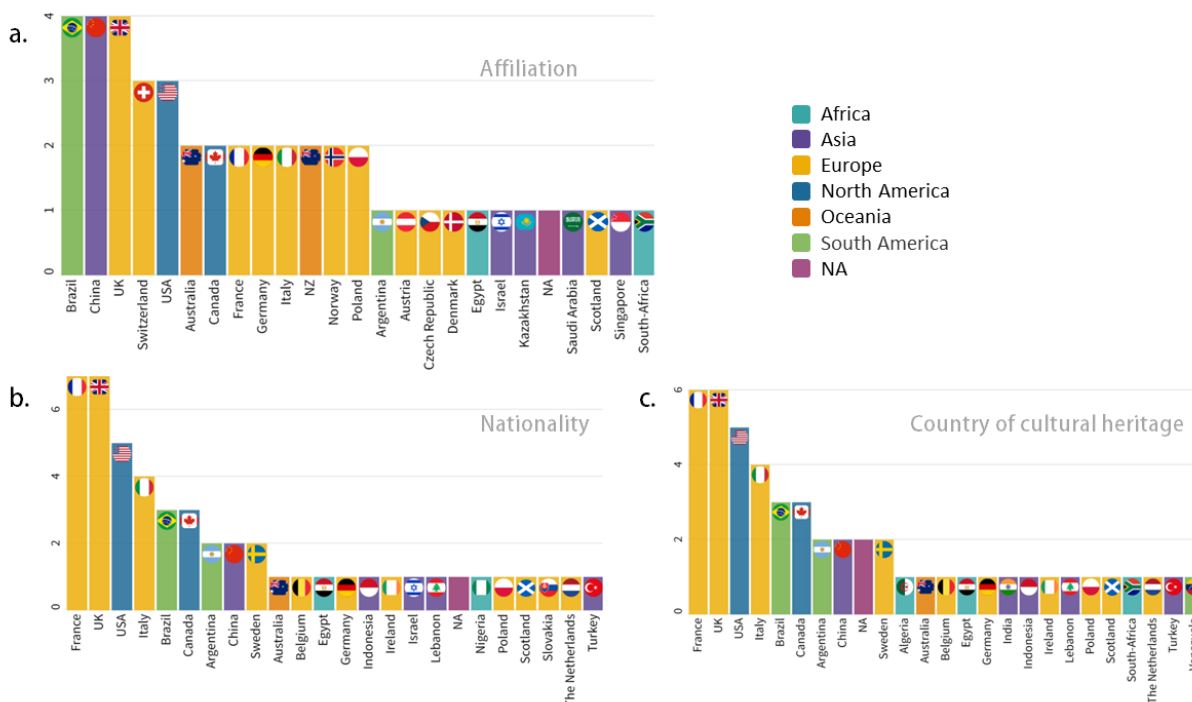


Figure 5: Affiliations (a), nationalities (b) and countries of cultural heritage (c) of applicants (non-solicited) for the *Sedimentologica* Editorial Board. UK: United-Kingdom; USA: United States of America, NZ: New Zealand; NA: Non-affiliated.

affiliations and cultural heritage countries from applicants is provided in Fig. 4. A strong effort has been made to balance origins and country of affiliations, in particular by providing non-experienced AEs an opportunity to access these positions. As a result, the editorial board includes 46 % of editors with more than 10 years of experience post-PhD, 38% between 6 and 10 years and 16 % with less than 5 years, including 8 % at 2 years or less after PhD (Fig. 5).

Even if the scientific expertise of the executive and associate editorial boards of *Sedimentologica* in 2022 is diverse, a specific effort is put into improving the representation of historically-minoritized and marginalized groups which also depends on the diversification and broader reach of our communication media. The steering committee and all editors are working towards it, by proposing a fast-track training to junior associate editors, diversifying their

mode of communications and specifically engaging with minoritized and marginalized groups in the field of geosciences.

4. Future

4.1. Success and validation

The future of *Sedimentologica* is dependent on the success and acceptance of the model by our community and will evolve constantly to adapt and improve its service to open science practices for the scientific community and for the society. Some important steps can be taken to enhance equity, diversity, and inclusion, and will be pursued into the *Sedimentologica*'s board (Steering committee and editorial boards), community and reviewers.

After a few years of functioning, *Sedimentologica* will be entitled to obtain an impact factor. We acknowledge that the

academic publishing and rewarding system is currently placing too much emphasis on poorly-designed metrics such as impact factors, with negative consequences for the entire community of scientists (*cf.* 2013 San Francisco Declaration on Research Assessment, American Society for Cell Biology, 2013). We will make a specific effort to help the emergence and representation of more outward-facing alternative metrics (for instance on societal impact of sedimentology) to support transition towards a more sustainable open science. However, while we cannot prevent metrics being calculated, our current position on metrics as flawed as impact factors (e.g., The PLoS Medicine Editors, 2006) will dictate our use (or non-use here) of them. We will therefore not promote this metric, but it may be available for scientists to use and refer to when, for example, applying for a position in an institution that has not signed the [DORA](https://sfdora.org/read/) agreement (<https://sfdora.org/read/>).

4.2. Potential limits and challenges of *Sedimentologika*

Sedimentologika's community is aligned with the global movement observed both in earth sciences and Science, Technology, Engineering, and Mathematics (STEM) in general to support community-rooted initiatives like transition towards, or creation of, a DOA ecosystem.

The main challenges lie in the long-term technical management and capacity-building potential of the community and global visibility. In case of wide acceptance, *Sedimentologika* might also reach a threshold regarding proof-reading and typesetting accepted articles, which depends on the capacity-building potential and commitment from the community. These are time-consuming and low-rewarding tasks that can

only be demanded to a handful of committed volunteers during a limited amount of time. A challenge further hindered by the complexity of accessing and communicating with vast and diverse communities in the long term.

One option in the long-term is to consider a reliable financial support/funding strategy to outsource some of these tasks. The Steering Committee will continue to explore available and emerging opportunities for external funding supporting open science and self-sustainable academic-led publishing systems, to expand publication-rate capacity and break this alleged ceiling. The DOA scenario will surely evolve in the next few years, and *Sedimentologika* is committed to be part of this change.

Data availability statement

All data used concerning the statistic related to the editorial board are in the manuscript.

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Authors contribution

C.T. wrote the manuscript with inputs from all co-authors. All co-authors revised and approved the final version of the manuscript.

Conflict of interest

The authors of the article are the founders of the journal *Sedimentologika*.

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