



# EDP Sciences-SMAI Subscribe to Open program 2023 Transparency Report

**Anne Ruimy**, Senior Publisher, EDP Sciences

**Agnès Henri**, Managing Director, EDP Sciences

**Amandine Véber**, Director of Publications, SMAI



**MINISTÈRE  
DE L'ENSEIGNEMENT  
SUPÉRIEUR  
ET DE LA RECHERCHE**

*Liberté  
Égalité  
Fraternité*

Projet financé avec le soutien du Fonds National pour la Science  
Ouverte and du Centre National de la Recherche Scientifique

Project funded with support from the French National Fund for  
Open Science and the Centre National de la Recherche Scientifique

# EDP Sciences-SMAI Subscribe to Open program

2023 Transparency Report  
May 2023



## Contents

EDP Sciences-SMAI Subscribe to Open program	3
Journals involved	3
Evolution of subscription prices	4
Publication statistics	6
S2O subscription renewal campaigns	9
Revenue sources	10
Revenue vs. publication costs	14
Program governance	17
APPENDIX: Definitions	19



## EDP Sciences-SMAI Subscribe to Open program

[EDP Sciences](#) is a reputed publishing house in Science and Technology, based in France. The [Society of Applied and Industrial Mathematics \(SMAI\)](#) is a French learned society. We have been partners for the publication of applied mathematics journals for about 20 years. For the last 4 years, we have implemented a [Subscribe to Open program](#) to transition the journals that we co-publish to open access.

SMAI and EDP Sciences are very pleased to share this third Transparency Report in 2023. As advocates of open science, we support the principle of transparency of costs and prices. As with the last two reports, we provide an exciting range of financial and other information which we hope will be of interest to librarians who are supporting the program, and other parties. This year's report is enriched with additional metrics, in particular content usage (article downloads). For more information on the EDPS-SMAI S2O program, see the [FAQs](#) or download the [leaflet](#). The [2021 Transparency Report](#) and [2022 Transparency Report](#) are also still available to download. More detailed information is available to interested libraries on request.

A journal publishing under a Subscribe to Open model will publish its content in open access if sufficient subscriptions have been renewed at the end of the renewal period. If subscription renewal targets are not met, the content remains, or reverts to being accessible to subscribers only. In our implementation of the model, if sufficient subscriptions have been renewed, articles are published under a CC-BY license, and authors retain the copyright, for one year from the time of the announcement. The situation is reviewed every year.

Definitions pertaining to the EDPS-SMAI S2O program are provided in the Appendix of this report.

## Journals involved

The maths portfolio published under the S2O model includes 6 journals. All journals are published in partnership by EDPS and SMAI, except *RAIRO – Theoretical Informatics and Applications* (RAIRO-ITA) which is published by EDPS only. Although not co-published by SMAI, RAIRO-ITA is included in the EDPS-SMAI S2O program and benefits from its mutualized resources.

EDPS and SMAI also publish together [ESAIM: Proceedings and Surveys](#) (ESAIM:PS) which has been in “diamond” open access from the beginning, i.e. published in open access without author charges. The journal publishes mainly conference proceedings. Production costs are covered by conference organizers. This journal is not included in the EDPS-SMAI S2O program.

The [success of the S2O pilot in 2020](#) with a first journal *Mathematical Modelling of Natural Phenomena* (MMNP), albeit on the basis of a small number of subscribers, paved the way for the extension of the S2O program to 5 additional maths journals in 2021, see [press release](#). Despite challenging conditions in 2021 due to the COVID pandemic, we have continuously published the 6 journals in open access since 2021.

The 6 mathematics journals currently taking part in the S2O program are listed in the following Table.

Following the success of the 2023 subscription renewal campaign (see below for details), all journals in the portfolio will continue to be published in open access in 2023. This was announced on the 7<sup>th</sup> of March 2023 (see [press release](#)). This constitutes a third year of uninterrupted publication in open access for the 6 journals in the EDPS-SMAI S2O program.

**Table 1.** Journal involved in the EDPS-SMAI S2O program, and years published in open access (OA) vs. subscription (subs).

Journal full name and link	Short name	Year joining S2O program	Year published in open access			
			2020	2021	2022	2023
<a href="#">Mathematical Modelling of Natural Phenomena</a>	MMNP	2020	OA	OA	OA	<b>OA</b>
<a href="#">ESAIM: Control Optimisation &amp; Calculus Variations</a>	ESAIM:COCV	2021	subs	OA	OA	<b>OA</b>
<a href="#">ESAIM: Mathematical Modelling &amp; Numerical Analysis</a>	ESAIM:M2AN	2021	subs	OA	OA	<b>OA</b>
<a href="#">ESAIM: Probability &amp; Statistics</a>	ESAIM:PS	2021	subs	OA	OA	<b>OA</b>
<a href="#">RAIRO - Operations Research</a>	RAIRO-RO	2021	subs	OA	OA	<b>OA</b>
<a href="#">RAIRO -Theoretical Informatics and Applications</a>	RAIRO-ITA	2021	subs	OA	OA	<b>OA</b>

## Evolution of subscription prices

EDP Sciences is committed to fair subscription prices, and fair price increases. Typical year-on-year increases vary from 0 to 3%.

In 2020, an exceptional 11% year-on-year increase was applied for *RAIRO-Operations Research* (RAIRO-RO). This reflected the addition of an issue in the 2020 volume, from 5 to 6 issues per year, to support the growth in the journal and reduce the backlog of accepted articles on hold for publication. Other journals in the portfolio had zero increase.

In 2021, EDP Sciences froze subscription prices over its entire portfolio of journals in the context of the COVID pandemic (see [press release](#)).

In 2022, we applied a more substantial price increase of 5% across the portfolio of maths journals. In absolute terms, this is equivalent to between €10 and €50 for an annual subscription to one of the journals in the portfolio, or to an additional €150 to subscribe to the package of 6 journals. This follows a 0% price increase for two years in a row in 2020 and 2021 (apart from RAIRO-RO, see above). The price increase also supports journal growth and faster publication times.

In 2023, a moderate price increase of 2% was applied across the portfolio.

A number of journals in the portfolio have seen large increases in submissions and accepted articles year-on-year. Prior to the transition to the S2O model, we chose to limit the increase in subscription prices and instead restrict the number of pages published every year. This led to a backlog of articles for the fastest growing journals, namely ESAIM:M2AN, ESAIM:COCV, and RAIRO-RO. A backlog of articles in production is not compatible with a S2O publication model which may require opening and closing newly published content on a yearly basis depending

on subscription renewals. Going forward, while the journals are published under a S2O model, we are committed to publishing all articles as soon as possible after they are accepted, to limit the potential lag between the time a decision is made to open or close the content, and effective publication in open or close access.

**Table 2.** Evolution of subscription prices in € since 2019 and year-on-year price increase (in brackets: % increase). Last column: Price of the package of 6 journals commercialized by Knowledge Unlatched.

Year	MMNP	ESAIM: COCV	ESAIM: M2AN (O)	ESAIM: M2AN (P+O)	ESAIM:PS	RAIRO-RO	RAIRO-ITA	Package of 6 journals (KU)
2019	€353	€389	€996	€1487	€226	€449	€429	–
2020	€360 (2%)	€389 (0%)	€996 (0%)	€1487 (0%)	€226 (0%)	€499 (11%)	€429 (0%)	–
2021	€360 (0%)	€389 (0%)	€996 (0%)	€1487 (0%)	€226 (0%)	€499 (0%)	€429 (0%)	–
2022	€378 (5%)	€408 (5%)	€1046 (5%)	€1562 (5%)	€237 (5%)	€524 (5%)	€450 (5%)	€3050
2023	€385 (2%)	€415 (2%)	€1066 (2%)	€1593 (2%)	€241 (2%)	€533 (2%)	€458 (2%)	€3111
<b>Average increase 2019-23</b>	<b>2.3%</b>	<b>1.7%</b>	<b>1.7%</b>	<b>1.7%</b>	<b>1.7%</b>	<b>4.7%</b>	<b>1.7%</b>	

ESAIM:M2AN is the only journal offering a print edition (P+O: print + online, O: online). Other figures are for online subscriptions only.

From 2020, the number of issues published in RAIRO-RO went from 5 to 6 issues per year. The subscription price increased by €40 in 2020.

The prices indicated in the Table above are the list prices for single-site institutions communicated on the EDPS website and to the subscription agencies. Full [2023 subscription price list](#). Last column: Knowledge Unlatched (KU) commercializes 3-year subscriptions to the package of 6 maths journals in S2O on a rolling basis. Institutions subscribing to the package via KU are guaranteed no price increase for 3 years. [Current prices](#). See below for details on the partnership with KU.

Average price increases since the beginning of the S2O program are less than 2% per year, excepting a higher increase for RAIRO-RO in 2020 (RAIRO-RO went from 5 to 6 issues per volume in 2020 to publish more articles and decrease the backlog). RAIRO-RO and ESAIM:M2AN publish 6 issues per volume, while the other journals with an electronic only version have ceased to publish individual issues and instead publish a single “open volume” per year.

## Publication statistics

### *Number of articles and pages published*

Since the 2021 Transparency Report, we include publication statistics for the journals included in the S2O program: number of articles and pages published per year. This information can be put in parallel with subscription prices and yearly price increases.

**Table 3a.** Number of articles published per journal per year and overall year-on-year increase (%). *(In italics and in brackets: including articles published in Supplements to prepare for the S2O transition)*

Year	MMNP	ESAIM: COCV	ESAIM: M2AN	ESAIM: PS	RAIRO-RO	RAIRO-ITA	Total	% year-on-year increase
2019	47	85	76	38	110	9	<b>365</b>	
2020	79	127	80	42	99	7	<b>434</b>	<b>+18.90%</b>
2021	59	109 (141)	102 (138)	17	190 (340)	13	<b>490 (708)</b>	<b>+12.90%</b>
2022	45	82	80	17	215	9	<b>448</b>	<b>-9%</b>

**Table 3b.** Number of pages published per journal per year and overall year-on-year increase (%). *(In italics and in brackets: including articles published in Supplements to prepare for the S2O transition)*

Year	MMNP	ESAIM: COCV	ESAIM: M2AN	ESAIM: PS	RAIRO-RO	RAIRO-ITA	Total	% year-on-year increase
2019	884	2515	2158	990	1961	206	<b>8714</b>	
2020	1518	3616	2378	1002	1888	91	<b>10493</b>	<b>+20.40%</b>
2021	1168	3221 (4211)	3111 (4130)	459	3842 (6892)	219	<b>12020 (17079)</b>	<b>+14.60%</b>
2022	996	2531	2335	527	4361	123	<b>10873</b>	<b>-9%</b>

Articles published in our maths journals are of considerable length. For example, in 2022, the average length of an article published in ESAIM:M2AN was 29 pages.

Historically, over the whole portfolio, there has been a large year-on-year increase in the number of articles published (+10 to 20% per year), in particular of the largest journal, RAIRO-RO. The growth of the journals exceeded the rate of increase in the subscription price that the partners felt would be acceptable to the library community. For this reason, the number of pages published per year was only allowed to increase gradually, and a growing backlog developed. Publication statistics before 2021 are therefore to be taken with caution as the yearly increase in the number of published articles and pages was restricted. With the lifting of the page restrictions, the statistics after 2021 are more representative of the true growth of the journals.

In 2021, in preparation for the transition to open access, we published the backlog of 3 journals (ESAIM: COCV, ESAIM: M2AN, and RAIRO-RO) in one go in the form of supplements. This was partly funded by the grant from the Fonds National pour la Science Ouverte (FNSO), see below. Content published in supplements is reported separately from the “regular” content as FNSO funds were used to cover the costs. Publication of the one-off supplements did not

contribute to the subscription price increase for libraries in 2021. From 2021, we also lifted the limits in the number of pages published per year, which contributed to the high increase in volume of content in 2021.

In 2022, the number of pages and articles published over the entire portfolio actually decreased by 9% compared to 2021 (even without the supplements). We attribute this to the transition from limited page budget to unlimited publication of accepted articles in 2021. This led to a spike in the number of published articles in 2021. From 2022, we are at a more steady state, with a balance between accepted and published articles.

Taking all these elements into consideration, the subscription price increase applied by EDPS/SMAI to the maths journals portfolio has been very moderate with regards to the growth in published content available to the subscribing institutions year on year.

### *Subscription price per article*

Statistics on subscription price per article published can be used to benchmark these journals with similar journals published by other publishers.

**Table 4.** Subscription price per article published (€/article). The subscription price per article is calculated on the basis of the online subscription price, and the number of articles outside of the supplements published in 2021 for ESAIM:COCV, ESAIM:M2AN and RAIRO-RO.

Year	MMNP	ESAIM: COCV	ESAIM: M2AN	ESAIM: PS	RAIRO-RO	RAIRO-ITA
2019	7.5	4.6	13.1	5.9	4.1	47.4
2020	4.6	3.1	12.4	5.4	5.0	61.3
2021	6.1	3.6	9.8	13.3	2.6	33.0
2022	8.6	5.5	13.3	14.2	2.5	50.9

The higher subscription price per article for RAIRO-ITA is related to the low volume of articles currently published by the journal (on the order of 10 per year). Part of the publication costs are incompressible and not dependent on the number of articles published. This makes low volume journals more expensive to produce. (See section below, Breakdown of publication costs).

Due to a decrease in articles published in 2022 (following a spike in 2021), and the increase in the subscription price in 2022, the subscription price per article increased between 2021 and 2022 for all journals.

The subscription price per article is a relatively common metric, see for example [the database](#) created by Bergstrom and McAfee which allows to compare price per article and price per citation for journals in various disciplines. For mathematics journals included in the database until 2013, mean price per article was around 25.88 \$/article and median price per article was \$17.56 /article, with a very wide range between around \$2/article and over \$200/article.

Our subscription price per article is generally below average for mathematics journals and offers good value for subscribers.

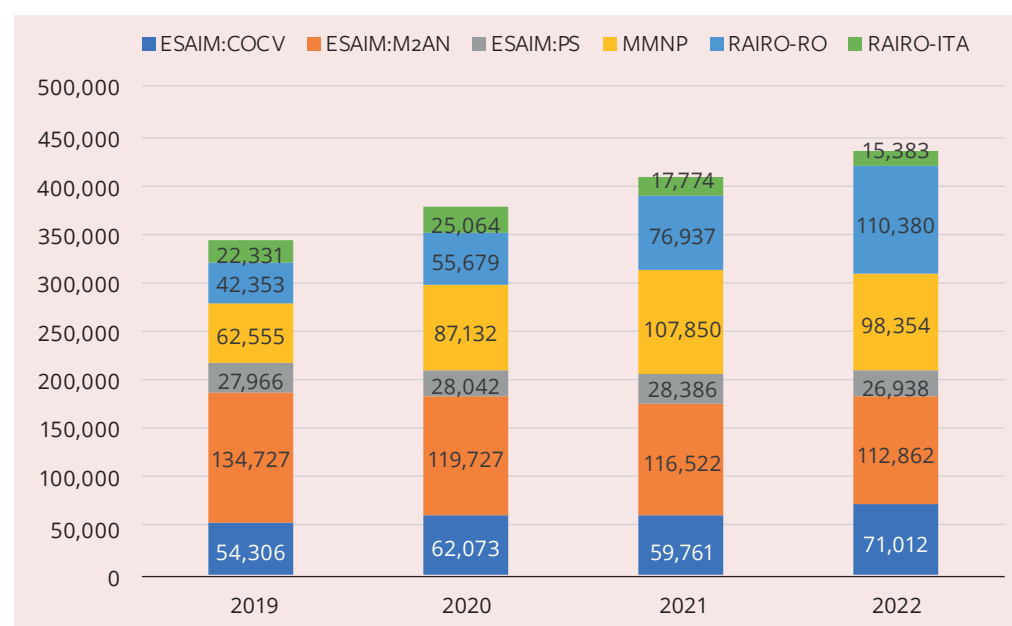


## Article downloads

We subscribe to ScholarlyIQ to generate statistics on usage of different article format from EDP Sciences' publication platform. These usage statistics are [COUNTER-5 compliant](#). In this 2023 Transparency report, we report for the first time on usage statistics.

There is an increasing trend in full text downloads of articles on EDP Sciences' platform (Figure 1, below). Usage has increased regularly since 2019. The total number of downloads in all formats (abstracts, full text HTML, PDF, other) was 437 320 in 2022.

**Figure 1.** Total article downloads in all formats from EDP Sciences platform, 2019–2022.



## Effects of S2O on downloads

In response to the COVID pandemic, EDP Sciences provided free access to the content of all its journals from March to August 2020, facilitating access for researchers working from home. In 2020, MMNP was also the first journal in the portfolio to transition to open access under S2O, as of March 2020. As of April 2021, the 6 maths journals started publishing in open access under S2O.

The opening of the content for 6 months in 2020 contributed to increase in usage in 2020, but this was not comparable to what other publishers were reporting when the content was temporarily opened in response to the pandemic. Annual Reviews for example made all journals freely available between mid-March and the end of June 2020. They reported: "For 50 of the 51 titles, usage at least doubled during the freely accessible period, and in many cases tripled, quadrupled or more". [\[Reference\]](#)

The effect of the flip to open access on content usage on the EDPS platform was similarly muted. There was an increase in the number of downloads, as the entire content of the year was opened in free or in open access from April 2021, however this was a small increase, indissociable from an annual linear increasing trend (+30 159 per year or +8.8%). In contrast, other publishers reported a very



large increase after flipping the journal to open access under S2O. IWA Publishing for example reported “article downloads in the first quarter of 2021 were 3.5 times higher than in the same period in 2020 and ten times higher than 2019” [Reference]. For Annual Reviews, “as soon as the paywall is removed, article access doubled or tripled and continues to rise...” [Reference].

The ubiquitous use of arXiv in the mathematics community may be a factor in the relatively minor effect of S2O on usage. Researchers have already read the full articles as preprints before their publication in a journal. Publication in a journal serves to provide a quality seal, and final publication details by which an article can be cited.

## S2O subscription renewal campaigns

### 2022 subscription renewals

The previous [2022 Transparency Report](#) reported partial subscription renewal figures for 2022 at the end of February 2022, compared to the full baseline year 2020. Here, we update these figures at the end of December 2022, including late subscriptions received throughout the year.

**Table 5a.** Percentage of traditional subscriptions renewed at the end of February 2022 (date of the announcement of continued OA publication in 2022) and at the end of December 2022. The percentages are compared with the baseline year (2020). Highlighted: 95% renewal reached.

Date	MMNP	ESAIM: COCV	ESAIM: M2AN (O)	ESAIM: M2AN (P+O)	ESAIM: PS	RAIRO-RO	RAIRO-ITA
20/02/2022	128.6%	89.9%	95.2%	56.4%	116.3%	102.3%	95.8%
31/12/2022	132.1%	98.7%	98.8%	76.9%	120.9%	106.8%	104.2%

ESAIM:M2AN is the only journal offering a print edition in 2021 (P+O: print + online, O: online). Other figures are for online subscriptions only.

### 2023 subscription renewals

As in 2022, the partial figures for 2023 subscription renewals at the end February 2023 include renewals of the existing subscriptions, as well as new subscriptions secured mainly via the partnership with Knowledge Unlatched (KU).

**Table 5b.** Percentage of traditional subscriptions renewed in 2023 compared to baseline year, at the end of the normal subscription renewal period (end of February). Highlighted: 95% renewal reached.

Date	MMNP	ESAIM: COCV	ESAIM: M2AN (O)	ESAIM: M2AN (P+O)	ESAIM: PS	RAIRO-RO	RAIRO-ITA
26/02/2023	150.0%	98.7%	100.0%	61.5%	127.9%	111.4%	106.2%

ESAIM:M2AN is the only journal offering a print edition in 2021 (P+O: print + online, O: online). Other figures are for online subscriptions only.

The positive situation regarding subscription in 2022 is continuing in 2023. By the end of February, all journals (except the print version of ESAIM:M2AN) have had over 95%, and sometimes over 100%, of subscriptions renewed. To clarify, a renewal rate over 100% means that there are more subscribers in 2022 than in the reference year, 2020. We have been able to announce early on in the year the continuation of open access publication for the entire portfolio in 2023, for the third year in a row ([press release](#)). This confirms that the drop in subscriptions in 2021 can be mainly attributed to the effects of the pandemic on library budgets, and the disruption of administrative processes worldwide.

The success of the renewal campaigns of traditional subscription in 2022 and 2023 (partial renewals) is a positive indicator of the support of the mathematics library community to the S2O model, which favours open access models that don't require authors to pay a fee to publish. This is important for the long-term sustainability of the S2O open access model for these journals, as traditional subscriptions constitute the largest revenue source for the journals (see Figure 2 below).

### *Benefits for subscribers*

The EDP Sciences-SMAI Subscribe to Open program has been relatively successful as evidenced by the subscription renewal figures in 2022 and 2023, above. This is probably due in great part to the engagement of the mathematics community for open access models not relying on author charges. We provide in addition reserved benefits for subscribers. Several years of archive content, and forthcoming articles ahead of publication, are available for subscribers only (see Appendix).

## Revenue sources

### *Traditional subscriptions*

The % turnover renewed (€) for traditional subscriptions at the end of February 2023 is also very encouraging and brings us closer to the sustainability target for the journals, although publication costs are also increasing. The higher % turnover renewed compared to % subscriptions renewed is explained mainly by the increase in year-on-year subscription prices (see evolution of subscription prices, above).

**Table 6a.** Percentage of traditional subscription revenue renewed (€) at the end of February 2022 (date of the announcement of continued OA publication in 2022) and at the end of December 2022. The percentages are compared with the baseline year (2020). Highlighted: 95% renewal reached.

Date	MMNP	ESAIM: COCV	ESAIM: M2AN (O)	ESAIM: M2AN (P+O)	ESAIM: PS	RAIRO- RO	RAIRO- ITA
20/02/2022	146.8%	93.8%	98.0%	64.4%	126.6%	108.7%	98.8%
31/12/2022	153.4%	104.1%	102.1%	79.9%	132.5%	114.5%	109.5%

ESAIM:M2AN is the only journal offering a print edition in 2021 (P+O: print + online, O: online). Other figures are for online subscriptions only.

**Table 6b.** Percentage of subscription revenue renewed (€) compared to the baseline year, at the end of the normal subscription renewal period (end of February 2023). Highlighted: 95% renewal reached.

Date	MMNP	ESAIM: COCV	ESAIM: M2AN (O)	ESAIM: M2AN (P+O)	ESAIM: PS	RAIRO- RO	RAIRO- ITA
20/02/2022	181.0%	106.4%	106.5%	61.9%	143.9%	121.0%	111.9%

ESAIM:M2AN is the only journal offering a print edition in 2021 (P+O: print + online, O: online). Other figures are for online subscriptions only.

### *Partnership with Knowledge Unlatched*

Considering the natural rate of attrition of subscriptions year-on-year, the exceptional economic circumstances of the pandemic years, the risk of “free-riding” related to the Subscribe to Open model, and the pre-existing operational deficit of the maths journals portfolio, we recognized that we needed additional sales resources for the maths portfolio. For this EDP Sciences turned to Knowledge Unlatched (KU), and concluded a 3-year agreement (2022-2024) in the spring of 2021, see [press release](#). This was extended in March 2023 for a further 3 years (2025-2027). The partnership with KU concerns exclusively the sale of the package of the 6 maths journals to institutions. This can be in the form of “upselling” the full package to institutions already subscribing to one or more journals, or of selling the full package to institutions that were not already subscribers. KU subscribers commit to subscribing to the whole portfolio of journals for 3 years. They subscribe at the price listed in the first year and are guaranteed no price increase for 3 years. KU subscriptions are included as “traditional subscriptions” in this report. New pledging campaigns are launched by KU every year.

EDP Sciences with its historical subscription agencies continue to handle individual journal subscriptions (yearly subscriptions).

Our partnership with KU has significantly increased the number of institutions subscribing to the portfolio, which was relatively low to start with. These institutions are active supporters of S2O. In addition, the fact that they subscribe for a 3-year period brings higher visibility for the program.

### *French national open access agreement*

Apart from traditional subscriptions, revenue for the maths journals also includes the French national open access agreement. This is a transformative agreement (“Read & Publish”) including read access to EDP Sciences journals for participating institutions, and the possibility for their authors to publish in open access in these journals free of charge. The first national agreement (2017-2021) predated the start of the S2O program at EDP Sciences. The partners of the agreement welcomed the transition of the maths journals to open access under the S2O model. Indeed, this is an ideal outcome for “transformative” agreements which are designed to help journals transition from subscription to open access. The Subscribe to Open model plays a more prominent role in the second national agreement (2022-2026) and has become an important pillar of the new agreement. See [press release](#).

The parties to the French national open access agreement are:

- EDP Sciences
- The MESR (Ministère de l'Enseignement Supérieur et de la Recherche) pilots the "[Plan de soutien à l'édition scientifique française](#)", which allocates funding for open access publication and platforms. It supports EDP Sciences as well as French open access platforms such as OpenEdition.
- [Couperin](#) is a consortium of French institutions negotiating subscription deals with publishers worldwide. Negotiations were made centrally between EDP Sciences and Couperin, and each institution can then opt in independently to join the agreement.
- [Abes](#) (Agence Bibliographique de l'Enseignement Supérieur) is the judicial and financial administrator of the agreement.

The negotiations are conducted centrally by the Couperin consortium, and each institution can then opt-in independently to join the agreement. The current list of member institutions is available [here](#). Institutions that join the national agreement commit for the whole duration (5 years from 2022 to 2026) or the remaining duration of the agreement in case they join later (an annual subscription drive takes place every year in October). Subscriptions under the French national agreement are managed separately from other subscriptions by EDP Sciences. For this reason, these subscriptions are not reported in the tables above which only consider "traditional" subscriptions. The revenue is however reported in the balance of total revenue vs. publication costs, see Figure 3 below.

### *Exceptional laboratory contributions*

In 2021, SMAI circulated a call to French mathematics laboratories for exceptional support to the SMAI-EDPS S2O program which was affected by budget cuts suffered by libraries during the COVID pandemic. This call was met with [several generous donations](#), which are individually acknowledged (see Individual and Institutional supporters).

All contributions from this appeal were received during 2021. The income received prior to October 2021 was allocated to the 2021 budget, while the income received after October 2021 - after the start of the 2022 subscription renewal campaign - was allocated to the 2022 budget. This temporary support scheme was discontinued in 2022.

### *APCs*

Prior to the S2O transition, the journals in the maths portfolio were positioned as subscription journals, not hybrid journals, as the author-pays open access model is not supported by the French mathematics community. Very rare APCs were however collected prior to 2021, when open access publication was explicitly requested by the authors. No APCs have been collected since the publication in open access of the journals in 2021.

### *Fonds National pour la Science Ouverte (FNSO)*

SMAI in partnership with EDP Sciences were awarded funding for 3 years (2021-2023) by the Fonds National pour la Science Ouverte (FNSO), see [press release](#). The FNSO funding aims to perennialize the transition to open access of the 5



journals co-published by EDP Sciences and SMAI under a S2O model: MMNP, ESAIM:COCV, ESAIM:M2AN, ESAIM:PS, RAIRO-RO. The funding supports 3 aspects:

**1. Preparation of the S2O transition.** Historically, subscription price increases were kept low and did not keep pace with a larger year-on-year growth in the number of accepted articles in some of the journals in the maths portfolio. This did not allow the number of articles published each year in the journal to match the volume of accepted articles. Excess articles were kept on hold before final publication. To mitigate this situation, accepted articles are published as “forthcoming” articles which are citable prior to final publication.

As part of the switch to a S2O model, to avoid a significant time lag before newly accepted articles could be published in open access, we published the bulk of these excess articles at the beginning of 2021. This was published in the form of one-off supplements to the regular 2021 volumes of the journals RAIRO-RO, ESAIM:COCV, ESAIM:M2AN. The supplements published represent a significant volume of content, equivalent to 6 months of regular content for ESAIM:COCV and ESAIM:M2AN, and 15 months for RAIRO-RO. See the Publisher’s note published in the respective journals for more information, e.g. the [Publisher’s note](#) in RAIRO - Operations Research. These 3 supplements are available to subscribers and non-subscribers in free access in perpetuity.

**2. Commercial activities.** Commercial activities aim to retain existing subscribers under a S2O model, attract new subscribers (in particular institutions using the content in open access and/or publishing in the journal in open access free of charge), encourage subscribers to upgrade to the package of maths journals instead of individual journals, and experiment with new commercial offers. In this context, a partnership was established in 2021 between EDP Sciences and Knowledge Unlatched for the sale of the Subscribe to Open mathematics package. The FNSO funding has been used, in particular, to fund the entry fee for KU.

**3. Marketing and communication activities.** Marketing and communication activities undertaken by both partners EDP Sciences and SMAI aim firstly to educate the community about the S2O model, and secondly to support commercial activity, via various communication channels (promotional material, news and press releases, social media, participation in events and so on).

Even though the subscription renewal target of 95% compared to the baseline year (2020) was not reached in 2021, EDPS and SMAI made a concerted decision to transition to open access publication in 2021 nevertheless. Although the grant allocated by the FNSO was not earmarked to compensate for loss of subscribers, the support of the FNSO weighed in the balance of the decision to publish the journals in open access in 2021. This contributed to the continuous open access publication of the journals for the last 3 years.

### *Centre National de la Recherche Scientifique (CNRS)*

SMAI in partnership with EDP Sciences were awarded funding for 3 years (2022-2024) by the French Centre National de la Recherche Scientifique (CNRS), see [press release](#). Similarly to the FNSO support, the CNRS grant aims to perennialize the transition to open access of the 5 journals co-published by EDP Sciences and SMAI under a S2O model: MMNP, ESAIM:COCV, ESAIM:M2AN, ESAIM:PS, RAIRO-RO. The CNRS funding supports 2 aspects:

**1. Publication costs.** Part of the CNRS grant is directly allocated to cover part of the publication costs not covered by subscriptions. In exchange, EDP Sciences is committed to continue publishing articles as soon as they are accepted, avoiding the reintroduction of page restrictions. EDP Sciences is also engaged in a continuous process to review its production costs.

**2. Commercial and communication activities.** The CNRS subsidy will also allow to invest additional resources in sales and communication in favour of open access and the S2O model, in partnership with organisations and agencies specializing in open access publication. The aim is to engage the long-term support of libraries and institutions, to take over from one-off financial support such as that provided by the FNSO and the CNRS.

We first report on the use of the CNRS funds in 2022-2024 in this transparency report, see Figure 3 below. This only includes the part allocated to publication costs.

## Revenue vs. publication costs

### *Revenue*

In this analysis, we take into account the following sources of revenue:

- “Traditional” subscription revenue, single-site and multi-site.
- “Read” and “publish” parts of the [French national agreement](#) allocated to the maths journals.
- Exceptional support from laboratories and individuals in 2021. The appeal for exceptional support aimed to mitigate for the shortfall in subscriptions in 2021 due to the COVID pandemic. Contributions received until the start of the 2022 subscription renewal campaign (Oct. 2021) are accounted for in 2021, contributions received later are accounted for in 2022.
- Part of the CNRS funding allocated to publication costs. Funding from the CNRS was received in December 2021. Part of this funding is allocated directly to publication costs, from 2022.

In this analysis, we did not take into account the funding awarded by the FNSO to the EDPS-SMAI Subscribe to Open initiative. The funding was allocated to publication of one-off supplements and is invested in communication and sales initiatives to perennialize the S2O program.

### *Publication costs and breakdown*

The average publication cost to publish an article in the maths portfolio is between €600 and €1200, depending on the journal and the year. In 2022, as in previous years, we consider an average cost per article over the entire portfolio of €1000 per article. Providing more precise figures per journal would not necessarily be more accurate, as differences in costs depend among other factors on the allocation of internal costs (staff salaries) and indirect costs (utilities etc.) which can fluctuate depending on the results of other journals.

The main factors explaining differences in costs between journals are the volume of articles published, and the provision or not of an editorial office.

Due to economies of scale, journals publishing a large volume of articles have a cost per article towards the lower range (€600), whereas journals publishing a low volume of articles have a cost per article towards the higher range (€1200).

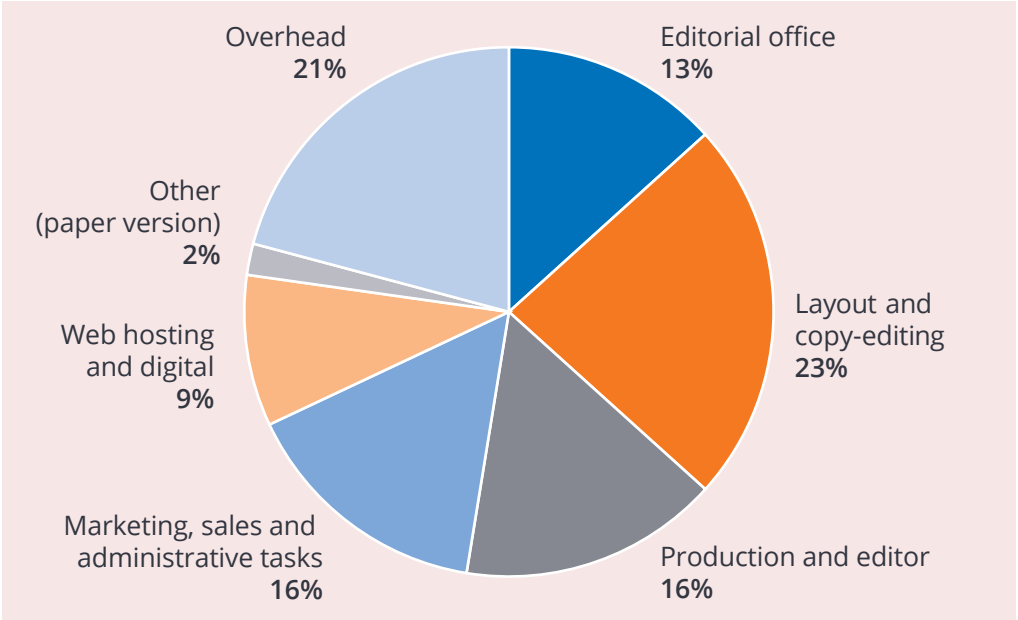
EDP Sciences and SMAI provide a dedicated editorial office for the journals ESAIM:M2AN, ESAIM:COCV, ESAIM:PS, RAIRO-RO. For the other journals, MMNP and RAIRO-ITA, EDP Sciences provides administrative services on the editorial platform but does not check submitted manuscripts or monitor the peer review process, which is the responsibility of the scientific Editors in these cases.

Differences in costs per article also depend on other services/products produced. For instance, as the only journal having a print version, ESAIM:M2AN is the only journal to incur printing and dispatch costs; RAIRO-ITA uses a proprietary editorial system whereas the other journals pay a license to use Editorial Manager (Aries), etc.

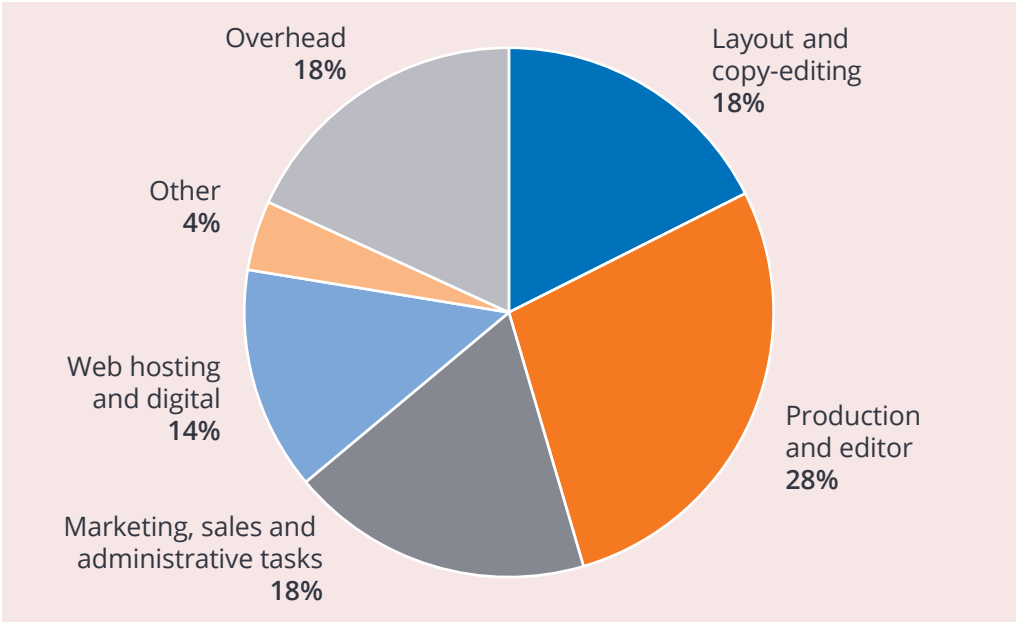
In 2022, we launched a project aimed at reducing publication costs for the maths journals, specifically targeting “Production & Editor” costs at EDP Sciences. A significant part of production cost is attributed to quality checking of the typeset proofs provided by Production Editors (EDP Sciences staff). Implementing workflow enhancements should result in a reduction in costs from 2023. The objective of this project is twofold: to bring the journals closer to financial balance, and to make the S2O publication model sustainable in the long term.

The following figures present a breakdown of the publication costs for journals with an editorial office compared to those without.

**Figure 2a.** Breakdown of publication costs (2022) for journals with an editorial office: ESAIM:M2AN, ESAIM:COCV, ESAIM:PS, RAIRO-RO



**Figure 2b.** Breakdown of publication costs (2022) for journals not providing an editorial office: MMNP, RAIRO-ITA.

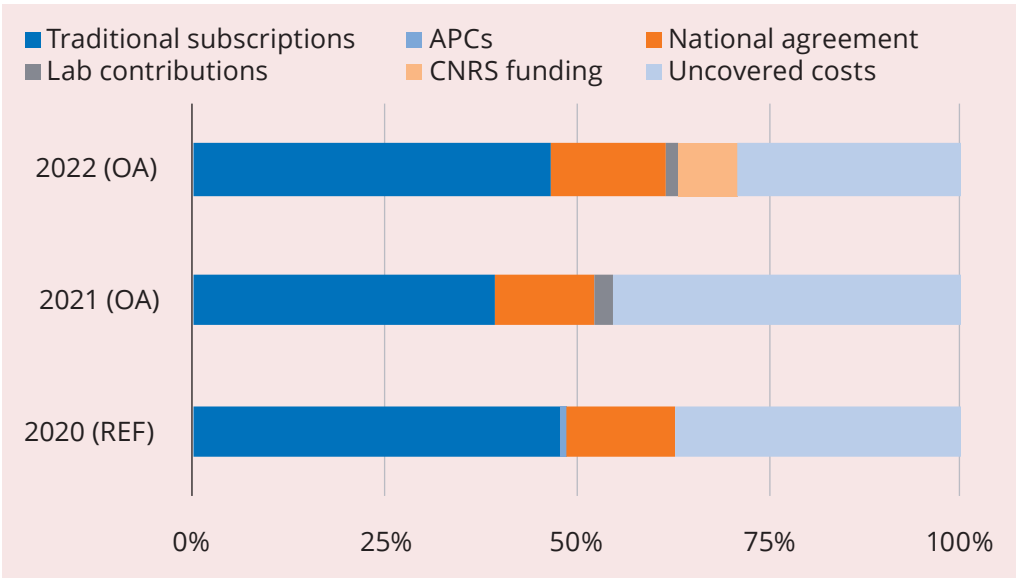


*Revenue vs. publication costs*

To calculate the overall publication costs over the entire portfolio, we multiplied the estimated average publication cost of €1000 per article by the number of articles published in 2020 (434 articles published) and 2021 (490 articles published not including Supplements). The publication cost of the Supplements was partly covered by the FNSO funding and is therefore excluded from this analysis.

The Figure below represents the revenue vs. publication cost over the entire maths portfolio in 2020, 2021 and 2022, in percentage of the publication cost. Revenue and publication costs are calculated as above.

**Figure 3.** Revenue vs publication costs for the entire maths portfolio (% publication costs), on the basis of an average publication cost per article of €1000. The sustainability target is for revenue to cover 100% of publication costs. 2020 is the reference year. The journals were published in OA under the S2O model in 2021 and 2022.





Overall, the portfolio of maths journals has been historically in operational deficit. The only journals making a profit individually are ESAIM:M2AN and RAIRO-ITA. ESAIM:M2AN is one of the largest and the most successful journal in the portfolio, and partly cross-subsidizes the other journals.

In the baseline year 2020, income from traditional subscriptions, the French national agreement, and APCs to a minor extent, covered only 63% of publication costs. In other words, even 100% subscription renewals don't allow the totality of publication costs to be recouped. This was a challenging situation, even prior to the S2O transition.

The S2O renewal target is set to 95% "traditional" subscriptions (number of subscribers) being renewed compared to the baseline year. In 2021, only 91% of traditional subscriptions were renewed compared to 2020. Going from a situation where the increase in the number of pages published per year was limited, to publication "as-you-go" led to a record number of articles published in 2021. This led to higher production costs, while subscription prices were frozen in 2021. The income from subscriptions and the French national agreement thus covered only 52% of production costs in 2021. Exceptional support from laboratories and individuals brought this total to 55%.

2022 was a more positive year for the maths S2O program. The emergence from the COVID pandemic and additional subscriptions brought by Knowledge Unlatched meant that traditional subscriptions recovered to their 2020 level. Part of the CNRS funding which was allocated to publication costs covered 8% of the costs and brought the total revenue to 71% of publication costs. The portfolio is getting closer to reaching a financial balance.

The sustainability target is set at 100% of publication costs covered. Our objective is to reach financial equilibrium for the portfolio of maths journals, through a combination of reducing publication costs, growing the subscriber basis, and new sources of funding such as sponsorship. EDP Sciences is engaged in reducing subscription prices when the sustainability target is reached. Once a balance is reached at the level of the portfolio and some contingency is set aside for interannual variations, the subscription price can be discounted to reward supporters of the S2O program.

## Program governance

An Advisory Committee was set up as part of the governance of the EDP Sciences-SMAI Subscribe to Open initiative. One of its chief interests is the perennity of the transition of the journals to open access under the S2O model. This includes exploration of alternative sources of funding in addition to subscriptions to the journals under a S2O model. The Advisory Committee can also be consulted on aspects of transparency and accountability. In 2021, the Committee met three times at key dates: in March (introduction of the S2O program), July (update on renewals, implementation of the open access transition) and December 2021 (review of first year of open access publication, perspectives for 2022). In 2022 and going forward, it aims to meet twice per year: in the Spring around the end of the subscription renewal period and the decision on whether to continue OA publication for the current year, and in the autumn to review actions taken during the year.

The Advisory Committee is constituted of representatives from EDP Sciences, SMAI, [RNBM](#) (Réseau National des Bibliothèques de Mathématiques), [INSMI](#) (Institut National des Sciences Mathématiques et de leurs Interactions), [INRIA](#) (National Institute for Research in Digital Science and Technology), [COSO](#) (Comité pour la Science Ouverte), [Couperin](#) consortium, and [CNRS](#) (Centre National de la Recherche Scientifique). The Advisory Committee thus includes the major players of scientific publishing in mathematics, and of open access publishing in France, as well as the major funders of the program.

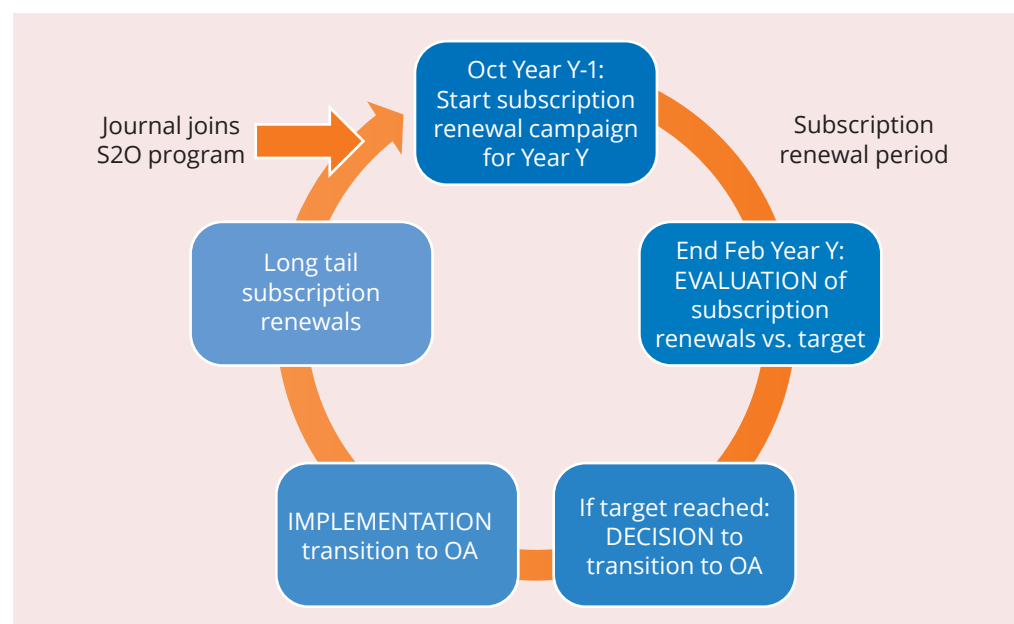
Although the EDPS-SMAI S2O program is advised by a mainly French Committee, the journals are international by their editorial board and their publication.

In addition, both EDP Sciences and SMAI are represented in the international [S2O Community of Practice](#). This is a forum for publishers and libraries to share their experiences with the model and to establish definitions and boundaries for S2O approaches.

## APPENDIX: Definitions

**Subscribe to Open cycle:** The decision to publish a journal under the S2O model in year Y is made in year Y-1 and communicated to agencies and subscribers at the time of subscription renewals for year Y. At this time, the journals are announced as being *published under a S2O model*, even if they do not end up being *published in open access* in the current year. The journals then enter the S2O cycle. The annual S2O cycle runs typically from end of February of year Y to end of February of Year Y+1. The cycle repeats every year, with the aim to keep the journals in open access with no interruption and thus perennialize the transition to open access under the S2O model.

**Figure A1.** Subscribe to Open cycle for a journal joining the Subscribe to Open program in Year Y-1.



**Subscription renewal period:** The subscription renewal period typically runs from October of Year Y-1 to end of February of Year Y. From October of Year Y-1, EDP Sciences sales department starts contacting its existing subscribers through the usual channels, inviting them to renew their subscription for Year Y, on the basis of a Subscribe to Open model.

There is a long tail of subscriptions to the current year of content being renewed throughout the year, even after the end of the subscription renewal period. The renewals coming after the end of the renewal period do not affect the decision to open the content, which is made at the end of the renewal period, typically at the end of February in the current subscription year.

**Grace period:** To account for administrative delays, a grace period is given to subscribers to renew their current year's subscription. The grace period is set on the 15th of January. After the grace period, access to content not published in open or free access is discontinued for subscribers not having renewed their subscription. This applies to all subscription journals published by EDP Sciences.

**Archives:** Access to the archives of the maths journals is reserved for subscribers. There are different years of reserved access for the different

journals, for historical reasons. Reserving the access of years of archive to subscribers allows to provide a material benefit reserved to subscribers of the journals under the S2O model.

**Table A1.** Availability of content on EDPS's platform for the maths journals included in the S2O program. Content in free access is free to read for all. Content published in open access is free to read for all and free to share and adapt under a CC-BY 4.0 licence.

Journal short name	Content in free access	Content in gated access	Content in open access under S2O program
MMNP	2006-2016	2017-2019	2020-present
ESAIM:COCV	1996-2016	2017-2020	2021-present
ESAIM:M2AN	1967-2016	2017-2020	2021-present
ESAIM:PS	1997-2016	2017-2020	2021-present
RAIRO-RO	1968-1998	1999-2020	2021-present
RAIRO-ITA	1974-1998	1999-2020	2021-present

**Forthcoming articles:** Access to articles ahead of publication is also reserved for subscribers. This is indicated in a blue banner on the respective websites, see this [example](#) for ESAIM:M2AN

**S2O renewal target:** For the maths S2O program, the subscription renewal target is set at 95% of the total yearly subscriptions being renewed at the end of the subscription renewal period, compared to the baseline year. The target of 95% follows the model originally adopted by Annual Reviews.

There may be years when the S2O renewal target is exceeded, i.e. more than 95% of subscriptions compared to the baseline year are renewed. We reserve the right to continue prospecting for new subscriptions until the journals are at financial equilibrium (see below, sustainability target).

**Sustainability target:** Overall, the portfolio of maths journals is seeing an operational deficit. The sustainability target will be achieved when income from subscriptions and other sources of funding covers the publication costs of the journals. Subscription prices may be discounted in future years if the sustainability target is reached.

**Baseline year:** The baseline year on which the success of every year's subscription renewal campaigns is evaluated at the end of the subscription renewal period is set at 2020. This remains the baseline year against which subscription renewals are evaluated every year.

**Evaluation of subscription renewals:** At the end of the subscription renewal period, the number of "traditional" subscriptions renewed (%subscriptions) is evaluated against the target set (here, 95%), for each journal. This determines whether the subscription renewal campaign was successful or fell short of the target, and the decision to publish in open access.

**Decision to publish in open access:** Following the evaluation of the subscription renewal campaign, EDP Sciences and SMAI make a concerted decision on which journal(s) will transition to open access publication in Year Y. If the target is not reached, the decision may be to keep or revert the journal(s) in gated access. This decision is made again every year at the end of the subscription renewal campaign.



**Implementation of open access publication:** Publication of the content in open access follows the S2O calendar. When a journal transitions to open access under the S2O model, newly accepted content from the time of the decision to transition to OA is published in open access under a [CC-BY 4.0](#) license.

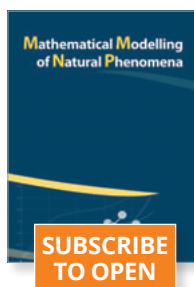
There is shift between the S2O cycle (running typically from end of February to end of February of the following year) and the publication year/volume (running from January to December). When a decision is made to publish a journal to open access in the first year, the content previously published from the start of the current subscription year to the time the first articles are published are put in free access. That is, the content is made free to read but not under CC-BY license.

**Traditional subscriptions:** This term designates all single-site and multi-site institutional subscriptions, not including the French national agreement.

**French national agreement:** The [French national agreement](#) was [renewed in 2022 for 5 years](#). It is a [transformative agreement](#) (“Read & Publish”) providing a subscription to EDP Sciences journals for participating institutions and the possibility for their authors to publish in open access in these journals without APCs. It actively supports the S2O model for the transition of journals published by EDP Sciences to open access.



# World-class mathematics journals – enabling open access through Subscribe to Open

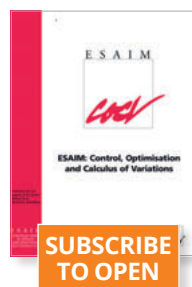


## Mathematical Modelling of Natural Phenomena

MMNP publishes original and review papers on Mathematical Modelling in biology, medicine, chemistry, physics, and other areas in the context of real world problems.

[mmnp-journal.org](http://mmnp-journal.org)

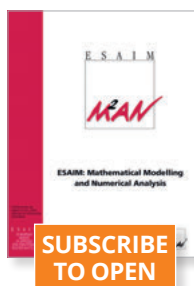
The first mathematics journal in the world to transition to open access using Subscribe to Open!



## ESAIM: Control, Optimisation and Calculus of Variations

ESAIM: COCV publishes papers and surveys in the areas of Control, Optimisation, and Calculus of Variations. Articles may be theoretical and/or computational and cover topical subjects.

[esaim-cocv.org](http://esaim-cocv.org)



## ESAIM: Mathematical Modelling and Numerical Analysis

ESAIM: M2AN publishes original research papers in Mathematical Modelling and Numerical Analysis providing rigorous theoretical analysis and evidence of computational relevance.

[esaim-m2an.org](http://esaim-m2an.org)



## ESAIM: Probability and Statistics

ESAIM: P&S publishes original research and survey papers in Probability and Statistics. It covers theoretical and practical aspects and methodological developments with applications.

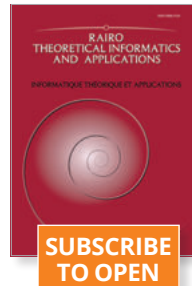
[esaim-ps.org](http://esaim-ps.org)



## RAIRO – Operations Research

RAIRO – RO is an international journal of high-level pure and applied research on Operations Research. It includes theory and methodology papers, case studies and state-of-the art surveys.

[rairo-ro.org](http://rairo-ro.org)



## RAIRO – Theoretical Informatics and Applications

RAIRO – ITA publishes original high-level research papers in the area of theoretical computer science and its applications including game theory, quantum computation, cryptography.

[rairo-ita.org](http://rairo-ita.org)

All the journals are published by EDP Sciences in partnership with SMAI except for *RAIRO – Theoretical Informatics and Applications* which is published by EDP Sciences only







**MINISTÈRE  
DE L'ENSEIGNEMENT  
SUPÉRIEUR  
ET DE LA RECHERCHE**

*Liberté  
Égalité  
Fraternité*

Projet financé avec le soutien du Fonds National pour la Science  
Ouverte and du Centre National de la Recherche Scientifique

Project funded with support from the French National Fund for  
Open Science and the Centre National de la Recherche Scientifique