

Éduquer à la bibliométrie : visibilité de la recherche dans les formations de la bibliothèque de l'EPFL

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Qui nous sommes



Lorenza Salvatori
Responsable équipe
Soutien publication
scientifique



Vincenzo Palatella
Spécialiste formations

Direction

Soutien au pilotage et communication

Services au public

Soutien académique et recherche

Collections

Digital repositories et archives

Planification et évaluation

Accueil et assistance au public

Enseignement et formation

Développement des collections

Ingénierie documentaire

Communication et événements

Fourniture de documents

Soutien publication scientifique

Gestion des ressources

Repositories

Gestion données de recherche

Archives EPFL

L'EPFL est signataire de DORA (2017) et CoARA (2024)



Signatory of
DORA

It recognizes the need to improve the ways in which researchers and the outputs of scholarly research are evaluated



CoARA

The assessment of research, researchers and research organisations recognises the diverse outputs, practices and activities that maximise the quality and impact of research.

Une réflexion est en cours autour de la Barcelona Declaration

BARCELONA
DECLARATION ON
OPEN RESEARCH
INFORMATION

We will...

- make openness the default for the research information we use and produce
- work with services and systems that support and enable open research information
- support the sustainability of infrastructures for open research information
- support collective action to accelerate the transition to openness of research information

A l'EPFL, la bibliométrie est un sujet qui touche transversalement plusieurs services centraux à l'EPFL (notamment dans la Vice-Présidence Académique)

- Academic Data Unit

Visé à fédérer les facultés, les services centraux et les partenaires externes de l'EPFL autour d'analyses stratégiques et opérationnelles dans le domaine académique, pour **permettre une prise de décision efficace basée sur des données structurées et des outils modernes nécessaires au pilotage d'une université de premier rang mondial.**

- Open Science Unit

Est responsable de la coordination de l'Open Science à l'EPFL. L'unité facilite la conversation sur l'Open Science sur le campus, et la prise de conscience des objectifs, des initiatives et du leadership de l'Open Science dans la communauté de l'EPFL.

- **Bibliothèque**

Elle s'occupe de la bibliométrie dans ses formations, et intègre une réflexion autour des indicateurs et données bibliométriques dans le travail de l'équipe « Repositories »

- Beyond Google (recherche documentaire)
- Introduction to LaTeX (LaTeX)
- Research data trainings (DR)
- **Research Visibility** (bibliométrie + science dans les RS)
- **Smart Publishing** (publication)
- Stay Away from Plagiarism (citation, plagiat)
- Up to Speed with Zotero (Zotero)

Durée : 1h15/1h30

Format : en ligne ou en présentiel

Public cible :

doctorants/chercheurs (mais ouverte à tout le monde)

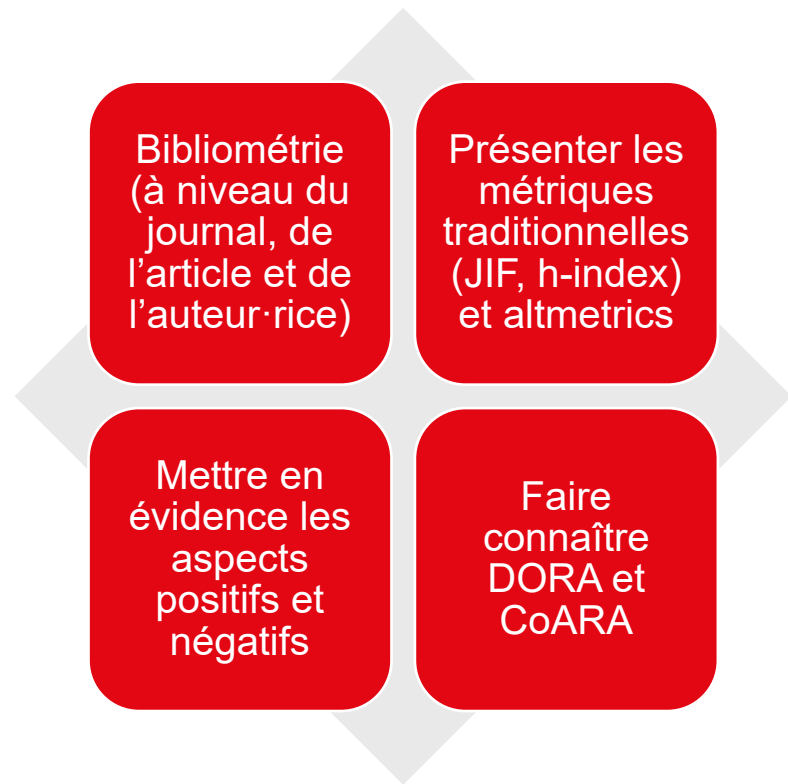
Fréquence : 2/3 fois par année

Langue : anglais

Première édition : juin 2020

Contenu :

- Introduction (10')
- **Visibility and Bibliometrics (20')**
- Beyond Bibliometrics (20')
(personal websites, social networks, ORCID...)
- Channels (10')
- Q&A



Bibliometrics are mathematical and statistical methods for **measuring and evaluating scholarly literature**.

Originally used by libraries in the process of subscribing/unsubscribing a journal, they are nowadays also used to assess:

- The performance of a researcher
- The impact of a researcher's output
- The relationships between publications, authors, and fields of research

Bibliometrics are mostly (but not exclusively) based on **citations count**.

Diapo RV

Bibliometrics

Journal-level

JIF (Journal Impact Factor), SJR (SCImago Journal Rank)

Author-level

h-index

Article-level

Altmetrics

What's a top-ranked journal? A journal with a **high impact factor** in its field.

An example: journal ranking in the category «Chemistry, Multidisciplinary»

Journal name ▾	ISSN	eISSN	Category	Total Citations ▾	2022 JIF ▾
<input type="checkbox"/> CHEMICAL REVIEWS	0009-2665	1520-6890	CHEMISTRY, MULTIDISCIPLINARY - SCIE	231,674	62.1
<input type="checkbox"/> CHEMICAL SOCIETY REVIEWS	0306-0012	1460-4744	CHEMISTRY, MULTIDISCIPLINARY - SCIE	177,860	46.2
<input type="checkbox"/> Nature Reviews Chemistry	N/A	2397-3358	CHEMISTRY, MULTIDISCIPLINARY - SCIE	9,964	36.3
<input type="checkbox"/> Energy & Environmental Science	1754-5692	1754-5706	CHEMISTRY, MULTIDISCIPLINARY - SCIE	107,998	32.5
<input type="checkbox"/> ADVANCED MATERIALS	0935-9648	1521-4095	CHEMISTRY, MULTIDISCIPLINARY - SCIE	369,915	29.4

Source: <https://jcr.clarivate.com/jcr/browse-journals>

$$IF_y = \frac{\text{Citations}_y}{\text{Publications}_{y-1} + \text{Publications}_{y-2}} \cdot$$

Source: https://en.wikipedia.org/wiki/Impact_factor

An example: Nature JIF for 2022

Calculation

×

Journal Impact Factor™ is calculated using the following metrics:

$$\frac{\text{Citations in 2022 to items published in 2020 (76,243) + 2021 (58,978)}}{\text{Number of citable items in 2020 (1,063) + 2021 (1,023)}} = \frac{135,221}{2,086} = 64.800$$

Source: <https://jcr.clarivate.com/jcr-jp/journal-profile?journal=NATURE&year=2022&fromPage=%2Fjcr%2Fhome>

Bibliometrics

Author-level

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Author-level metrics evaluate the **productivity** (number of articles published) and the **impact** (number of citations) of a researcher.

Named after its creator, the physicist Jorge Hirsch, the h -index is the maximum value of h such that h articles have at least h citations.

Jane Doe



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In 2022 Jane published **6 articles**, each of them has been cited 10, 8, 6, 3, 2 and 0 times.

Her h -index is **3** because three of her articles have been cited 6 times or more.

John Doe



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In 2022 John published **4 articles**, each of them has been cited 12, 10, 9 and 2 times.

His h -index is **3** because three of his articles have been cited 4 times or more.

Bibliometrics

Article-level

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The latest addition to the world of bibliometrics, it assesses the impact of an individual article.

Bibliometrics at article-level don't take into account citations only but they can include:

- Views and downloads on the journal website and other platforms (COUNTER)
- References saved in some reference managers
- Posts and comments on scientific blogs, Twitter...
- Mentions in traditional media

Differently from the other bibliometrics, the only standard is COUNTER. Each publisher can calculate the rest in a different way.

Article-level metrics

Some examples: PLOS ONE

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The screenshot shows the PLOS ONE article page for the paper 'Survey on open peer review: Attitudes and experiences amongst editors, authors and reviewers'. The page includes a search bar, a 'Diapo RV' watermark, and a grid of four circular metrics: 144 Save, 101 Citation, 15,167 View, and 166 Share. Callouts on the right side of the page point to these metrics and other features like 'advanced search', 'Total Mendeley + Citeulike bookmarks', 'Paper's citation count', 'Views and downloads', and 'Facebook, Reddit, Twitter and Wikipedia activities'. The article is marked as 'OPEN ACCESS' and 'PEER-REVIEWED'.

PLOS ONE

OPEN ACCESS PEER-REVIEWED
RESEARCH ARTICLE

Survey on open peer review: Attitudes and experiences amongst editors, authors and reviewers

Tony Ross-Hellauer, Arvid Deppe, Birgit Schmidt

Published: December 13, 2017 • <https://doi.org/10.1371/journal.pone.0189311>

advanced search

Total Mendeley + Citeulike bookmarks

Paper's citation count

Views and downloads

Facebook, Reddit, Twitter and Wikipedia activities

144 Save	101 Citation
15,167 View	166 Share

Source: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0189311>

Article-level metrics

Some examples: Nature

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Views and downloads

Paper's citation count

Social media and web activity

A detailed map of Higgs boson interactions by the ATLAS experiment ten years after the discovery

Access & Citations

29k

Article Accesses

43

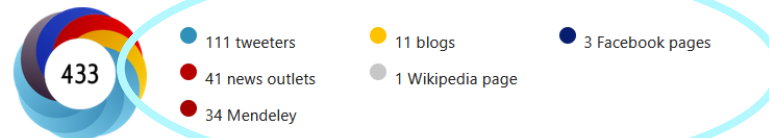
[Web of Science](#)

67

[CrossRef](#)

Citation counts are provided from Web of Science and CrossRef. The counts may vary by service, and are reliant on the availability of their data. Counts will update daily once available.

Online attention



This article is in the 99th percentile (ranked 1,954th) of the 426,527 tracked articles of a similar age in all journals and the 87th percentile (ranked 134th) of the 1,052 tracked articles of a similar age in *Nature*

View more on [Altmetric](#)

Altmetric calculates a score based on the online attention an article receives. Each coloured thread in the circle represents a different type of online attention. The number in the centre is the Altmetric score. Social media and mainstream news media are the main sources that calculate the score. Reference managers such as Mendeley are also tracked but do not contribute to the score. Older articles often score higher because they have had more time to get noticed. To account for this, Altmetric has included the context data for other articles of a similar age.

Source: <https://www.nature.com/articles/s41586-022-04893-w/metrics>



Are you a good researcher if you publish in a top-ranked journal?

<https://www.nature.com/articles/d41586-020-00335-7>

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NEWS · 06 FEBRUARY 2020

Highly cited researcher banned from journal board for citation abuse

Investigation finds that biophysicist Kuo-Chen Chou repeatedly suggested dozens of citations be added to papers.

Richard Van Noorden



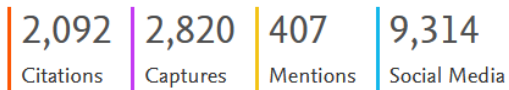
«According to the editorial, Chou asked authors of dozens of papers he was editing to cite a long list of his publications - sometimes more than 50 - and suggested that they change the titles of their papers to mention an algorithm he had developed.»

Bibliometrics Controversies

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How would you judge an article with such metrics?

<https://www.thelancet.com/journals/lancet/article/PIIS0140673697110960/fulltext>



EARLY REPORT | [VOLUME 351, ISSUE 9103, P637-641, FEBRUARY 28, 1998](#)

[Download Full Issue](#)

RETRACTED: Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

Dr AJ Wakefield, FRCS • [SH Murch, MB](#) • [A Anthony, MB](#) • [J Linnell, PhD](#) • [DM Casson, MRCP](#) • [M Malik, MRCP](#) • et al.

[Show all authors](#)

Published: February 28, 1998 • DOI: [https://doi.org/10.1016/S0140-6736\(97\)11096-0](https://doi.org/10.1016/S0140-6736(97)11096-0)

Bibliometrics

Controversies

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And what about (in particular in author-level metrics)...

- Self-citations?
- Niche research fields?
- Multiple-author articles?
- Weight of citations?
- Sentiment of citations?

Bibliometrics Controversies

Diapo RV

Should research assessment be based on bibliometrics only?

- San Francisco Declaration on Research Assessment (2012)
<https://sfdora.org/>
- Coalition for Advancing Research Assessment (2022)
<https://coara.eu/>
- SNSF Evaluation procedure
<https://www.snf.ch/en/6cs2wnfJtcfFDL6o/page/evaluation-procedure>





GENERAL

1. **Do not use journal-based metrics**, such as Journal Impact Factors, as a surrogate measure of the quality of individual research articles, **to assess an individual scientist's contributions, or in hiring, promotion, or funding decisions.**

FOR FUNDING AGENCIES

2. Be explicit about the criteria used in evaluating the scientific productivity of grant applicants and clearly highlight, especially for early-stage investigators, **that the scientific content of a paper is much more important than publication metrics or the identity of the journal in which it was published.**

FOR INSTITUTIONS

4. **Be explicit about the criteria used to reach hiring, tenure, and promotion decisions**, clearly highlighting, especially for early-stage investigators, that the scientific content of a paper is much more important than publication metrics or the identity of the journal in which it was published.

<https://sfdora.org/read/>

FOR PUBLISHERS

6. **Greatly reduce emphasis on the journal impact factor as a promotional tool**, ideally by ceasing to promote the impact factor or by presenting the metric in the context of a variety of journal-based metrics [...] that provide a richer view of journal performance.

7. Make available a range of article-level metrics to encourage a shift toward **assessment based on the scientific content of an article rather than publication metrics of the journal in which it was published.**

FOR ORGANIZATIONS THAT SUPPLY METRICS

11. Be open and **transparent** by providing data and methods used **to calculate all metrics.**

13. Be clear that **inappropriate manipulation of metrics will not be tolerated [...]**

FOR RESEARCHERS

18. **Challenge research assessment practices that rely inappropriately on Journal Impact Factors** and promote and teach best practice that focuses on the value and influence of specific research outputs.

2) Base research assessment primarily on **qualitative evaluation** for which peer review is central, supported by **responsible use of quantitative indicators**

3) Abandon **inappropriate uses in research assessment of journal- and publication-based metrics**, in particular inappropriate uses of Journal Impact Factor (JIF) and h-index

‘Inappropriate uses’ include:

- **relying exclusively on author-based metrics** (e.g. counting papers, patents, citations, grants, etc.) to assess quality and/or impact;
- [...]
- relying on any other metrics that do not properly capture quality and/or impact.

<https://coara.eu/agreement/the-commitments/>

12

séances
(depuis
juin 2020)

116

participants

3,23/4

évaluation*

*Question: «I would
recommend this
workshop to my peers»

- Garder à jour la formation selon les développements
- Changer le format de la deuxième partie
 - Inviter des chercheurs qui font déjà une utilisation optimale des réseaux sociaux pour des séances de Q&A ?
 - Cas d'études ?

Et chez vous ?





Merci!

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