



# Atelier Dissemin

**Marie Farge**  
CAPSH-Dissemin  
CNRS-INSMI et ENS Paris

*Journées CasuHAL 2023  
Tous interoper(HAL)bles?  
Toulouse, 15 Juin 2023*



# Définitions

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Publier des résultats de la recherche signifie les rendre publics, afin d'être vérifiés, clarifiés, diffusés, utilisés et améliorés par d'autres.

La publication d'articles dans des revues à comité de lecture est la colonne vertébrale qui assure la validation collective des articles de recherche grâce à l'évaluation par les pairs.

Un pair est un chercheur en activité spécialiste du sujet de la revue capable de vérifier que les idées et résultats présentés dans l'article sont originaux, valides et suffisamment pertinents pour être publiés.

Leur rôle est de corriger les erreurs et suggérer des améliorations.

Ils agissent en tant qu'éditeur ('editor') ou évaluateur ('referee') puis transmettent les articles acceptés au publicateur ('publisher').

Afin de préserver leur objectivité, les pairs doivent être indépendants du 'publicateur' et non rétribués par celui-ci ('editor in residence').

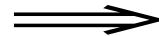
# Qui a accès aux publications de recherche?

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Aujourd'hui seuls les chercheurs travaillant dans des institutions et des pays suffisamment riches pour pouvoir payer des abonnements très coûteux.

Les chercheurs travaillant dans des entreprises ou dans des institutions pauvres, les étudiants, les chercheurs retraités, les enseignants du secondaire, les journalistes et la majorité des contribuables qui financent la recherche publique n'y ont pas accès.

Quand vous donnez une idée, vous ne la perdez pas, contrairement à un produit matériel, mais les résultats d'un article qui n'est pas lu sont perdus.



La connaissance ne devrait pas être un produit commercial, voire spéculatif, mais un bien commun qui doit être transmis.

*Charlotte Hess and Elinor Ostrom  
Understanding knowledge as a Commons  
MIT Press, 2006*

*Elinor Ostrom, Nobel Prize in economic  
sciences for 'her analysis of economic  
governance, especially the Commons, 2009*

# Les publikeurs en ont pris le contrôle

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Aujourd'hui les publikeurs possèdent les revues et les articles car ils obligent les chercheurs à leur céder gratuitement leurs droits d'auteur. Ils leur demandent aussi d'assurer gratuitement la révision des articles et de coordonner les comités éditoriaux.

Ce modèle économique date de l'ère de l'imprimerie, quand on n'avait pas *Internet*, mais n'a plus de sens à l'ère numérique, sinon d'augmenter les profits des 'majors' et de leurs actionnaires.

Les chercheurs veulent reprendre le contrôle des revues, dont ils assurent l'évaluation par les pairs, et des articles qu'ils rédigent et publient afin de maximiser leur dissémination grâce à *Internet*.

*Pour en savoir plus, voir sur YouTube :  
#DataGueule 63, Privés de savoir?*



# 2012, des chercheurs se révoltent

*Sir Tim Gowers* et 33 collègues mathématiciens (dont je suis) avons lancé le mouvement *The Cost of Knowledge* qui appelle à boycotter *Elsevier*, ce qui a permis de stopper le *Research Works Act* au Congrès américain, une proposition de loi déposée sous la pression du lobbying d'*Elsevier*.



*Sir Tim Gowers,*  
*Fields Medal 1998*

## 17062 Researchers Taking a Stand. [See the list](#)

Academics have protested against Elsevier's business practices for years with little effect. These are some of their objections:

1. They charge exorbitantly high prices for subscriptions to individual journals.
2. In the light of these high prices, the only realistic option for many libraries is to agree to buy very large "bundles", which will include many journals that those libraries do not actually want. Elsevier thus makes huge profits by exploiting the fact that some of their journals are essential.
3. They support measures such as SOPA, PIPA and the ~~Research Works Act~~, that aim to restrict the free exchange of information.

<http://www.thecostofknowledge.com/>



# 2012, la presse a très vite relayé le boycott

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The  
Economist

4/7/2019

Scientific publishing

## The price of information

Academics are starting to boycott a big publisher of journals

Feb 4th 2012 | from the print edition

Commercial publishers have begun to experiment with open-access ideas, such as charging authors for publication rather than readers for reading. But if the boycott continues to grow, things could become more urgent. After all, publishers need academics more than academics need publishers. And incumbents often look invulnerable until they suddenly fall. Beware, then, the Academic spring.

## Mathematicians Organize Boycott of a Publisher

More than 5,700 researchers have joined a boycott of Elsevier

The signers included three Fields medalists — Dr. Gowers, Terence Tao and Wendelin

Werner. The statement was also signed by Ingrid Daubechies, president of the

International Mathematical Union, who then resigned as one of the unpaid editors in chief at the Elsevier journal Applied and Computational Harmonic Analysis.

Publishing, perishing, and peer review

Could new kinds of electronic publishing rescue academia from its long-running “journals crisis”?

22/1/1998

The Economist, January 22nd 1998

The New York Times

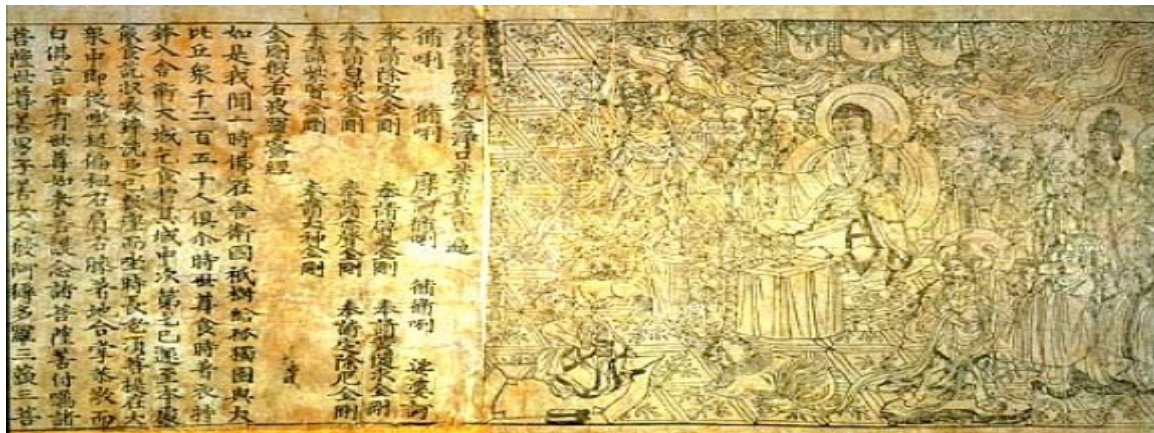
13/2/2012

# 2012, ils proposent un nouveau modèle

Note sur la publication en accès libre rédigée le 29 Juin 2012 par *Marie Farge* à la demande de *Geneviève Fioraso*, ministre de la recherche :

'Il est indispensable que les chercheurs puissent développer une **troisième voie**, beaucoup moins coûteuse [...] Elle est appelée **Diamond OA** et se caractérise par le fait que **ni le lecteur ni l'auteur ne doivent payer** et que **le journal appartient, non plus à une maison d'édition, mais au comité éditorial** [...] un collège de chercheurs **qui se charge de la publication des articles avec l'aide d'unités de service.**'

[http://openscience.ens.fr/MARIE\\_FARGE/](http://openscience.ens.fr/MARIE_FARGE/)



La terminologie *Diamond OA* vient du *Diamond Sutra* qui est le premier texte imprimé connu, publié en Chine le 11 Mai 868

*British Library, Londres*



# Le modèle d'accès libre 'diamant'

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- Les auteurs gardent leur droit d'auteur et mettent leurs articles en accès libre sous licence *Creative Commons CC-BY*.

<https://creativecommons.org/licenses/>

- Les journaux appartiennent à leur comité éditorial, composé exclusivement de chercheurs en activité qui assurent bénévolement l'évaluation par les pairs.

- Les institutions publiques financent et possèdent les plateformes (d'évaluation, publication et bibliométrie) développées en logiciel libre.
  - Les bibliothécaires assurent la visibilité des articles sur *Internet* en ajoutant les métadonnées permettant de les trouver facilement.
  - Les publikeurs peuvent assurer divers services mais après avoir été mis en concurrence par appel d'offre.





# La meilleure solution en attendant mieux

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Aujourd'hui les publikeurs nous imposent leur modèle 'doré', où nous devons payer pour publier nos articles. Ceci est inadmissible du point de vue éthique car il conduit à la création de nombreuses revues de mauvaises qualité et prédatrices.

[http://openscience.ens.fr/MARIE\\_FARGE2011\\_AVIS\\_COMITE\\_ETHIQUE\\_CNRS](http://openscience.ens.fr/MARIE_FARGE2011_AVIS_COMITE_ETHIQUE_CNRS)

La meilleure façon de gérer la transition actuelle est l'accès libre 'vert', où les chercheurs publient dans les revues qu'ils préfèrent et déposent leur version auteur en accès libre grâce à des archives publiques.

[http://openscience.ens.fr/MARIE\\_FARGE2017\\_BOOK\\_CHAPTER\\_COMMISSION](http://openscience.ens.fr/MARIE_FARGE2017_BOOK_CHAPTER_COMMISSION)

Certaines revues autorisent ce dépôt dès la date de publication. La *Loi Lemaire pour la République Numérique* du 7 Octobre 2016 rend ce dépôt légal au plus six mois après la publication.



# 2015 *Dissemin* pour libérer les articles

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*‘Trouver vos articles bloqués par des péages et libérez-les en un clic!’*



Plateforme **créée en 2014 par Antonin Delpeuch**  
quand il était étudiant en math-informatique à l'ENS Paris.

<http://dissem.in>  
<https://github.com/dissemin>



# Plateforme faite par des chercheurs

La plate-forme *Dissemin* est développée par l'association *CAPSH* (*Comité pour l'Accessibilité aux Publications en Sciences et Humanités*) créée le 5 Septembre 2015 et domiciliée à Cluny (Saône-et-Loire).

**Antonin Delpuch**

Graduate student, Computer Science  
École Normale Supérieure  
France



*"We need to take a stand against more traditional publishers"*



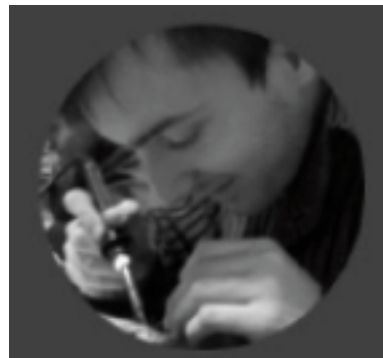
*Antonin Delpuch*

<http://openscholarchampions.eu>

## Europe's Open Access Champion



*Antoine Amarilli*



*Thomas Bourgeat*



*Marie Farge*



*Pablo Rauzy*



# http://dissem.in

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Vous hésitez toujours ? Lisez ce qui suit ou jetez un œil à la [FAQ](#).

Analyser mes publications

ou

Chercher un collègue

*par nom*

Peter

Sewell

*ou par ORCID*

identifiant (par exemple, 0000-0001-2345-6789)

Recherche

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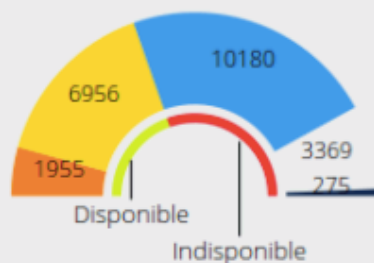
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### Libre accès (voie verte)

Les chercheurs ont souvent le droit de mettre leurs articles en accès libre sur le Web, pour compléter la version payante proposée par les éditeurs traditionnels. Pourtant, tous ne le font pas.

À cause de cela, les bibliothèques doivent payer à prix d'or des abonnements électroniques aux journaux de recherche, ce qui grève leurs finances et limite leur offre.



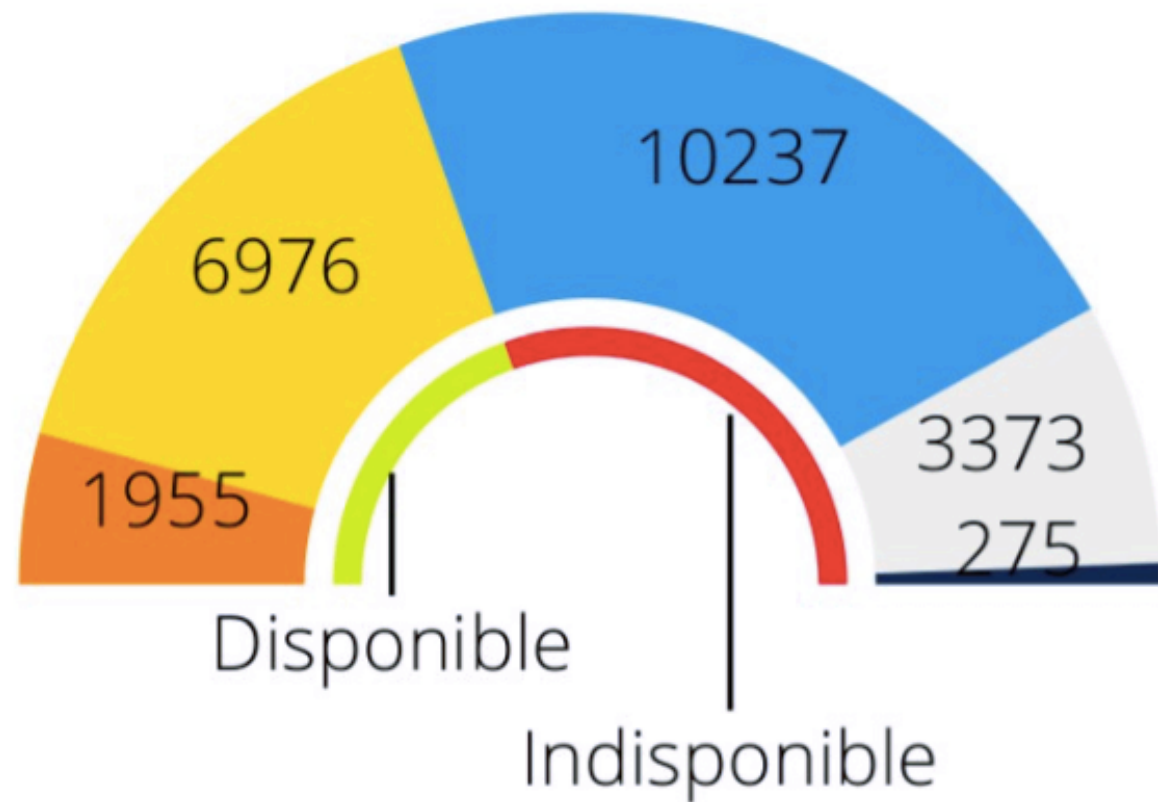
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### Dépôts ouverts

C'est déjà bien de mettre vos articles en ligne sur votre page Web, mais ce n'est pas suffisant ! De telles copies sont moins pérennes et plus difficiles à trouver que celles qui sont déposées dans des dépôts bien indexés.

Dissemin cherche des copies de vos articles dans une grande collection de dépôts ouverts en ligne, et vous indique ceux qu'il n'a pas pu trouver de cette façon.



- Accessible à partir de l'éditeur (1955)
- Accessible à partir de l'auteur (6976)
- Pourrait être partagé par les auteurs (10237)
- Politique inconnue ou complexe (3373)
- Partage interdit par l'éditeur (275)

# Dissemin 'moissonne' les articles

## Welcome to dissemin

Dissemin detects papers behind pay-walls and invites their authors to upload them in one click to an open repository.

**Entrez ici le prénom puis le nom du chercheur dont vous cherchez les articles**

## Green open access

Many researchers do not use their right to make their papers freely available online, in addition to the paywalled version offered by traditional publishers.

This forces libraries to buy overpriced electronic subscriptions to journals, when they can afford them at all.



## Open repositories

Uploading your papers on your own webpage is not enough. Such copies are less stable and harder to find than documents uploaded to well-indexed repositories.

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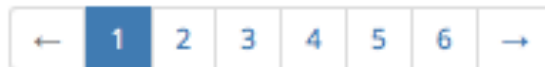
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Seung-Bu Park, Pierre Gentine, Kai Schneider, Marie Farge

2016

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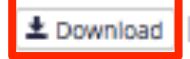


American Meteorological Society, *Journal of the Atmospheric Sciences*, 2016.



Frank G. Jacobitz, Kai Schneider, Wouter J. T. Bos, Marie Farge

Structure of sheared and rotating turbulence: Multiscale statistics of Lagrangian and Eulerian accelerations and passive scalar dynamics



American Physical Society, *Physical Review E*, 1(93), 2016.



Marie Farge, Kai Schneider

2015

Wavelet transforms and their applications to MHD and plasma turbulence: a review



Cambridge University Press (CUP), *Journal of Plasma Physics*, 06(81), 2015.

Researcher

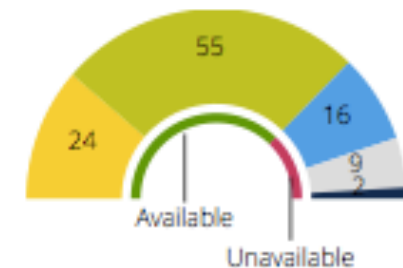
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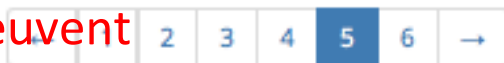




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Les articles pas encore en accès libre peuvent le devenir en deux clics, et ce gratuitement :




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Coherent vortex extraction in three-dimensional homogeneous turbulence: Comparison between CVS-wavelet and POD-Fourier decompositions

2003

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Kai Schneider, Marie Farge  
Coherent Vortex Simulation (CVS) of 2D bluff body flows using an adaptive wavelet method with penalisation

 Upload | Springer Verlag, Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2003.



Bartosz Protas, Kai Schneider, Marie Farge  
Geometrical alignment properties in Fourier- and wavelet-filtered statistically stationary two-dimensional turbulence

2002

 Upload | Physical Review E, 4(66), 2002.




Kai Schneider, Marie Farge  
Adaptive Wavelet Simulation of a Flow around an Impulsively Started Cylinder Using Penalisation

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Researcher

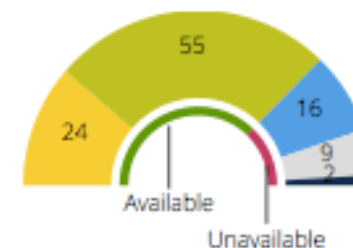
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
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# Coherent vortex extraction in three-dimensional homogeneous turbulence: Comparison between CVS-wavelet and POD-Fourier decompositions


Journal article by Marie Farge, Kai Schneider, Giulio Pellegrino, Alan A. Wray, Robert S. Rogallo


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## Abstract

The coherent vortex simulation (CVS) decomposes each realization of a turbulent flow into two orthogonal components: An organized coherent flow and a random incoherent flow. They both contribute to all scales in the inertial range, but exhibit different statistical behaviors. The CVS decomposition is based on the nonlinear filtering of the vorticity field, projected onto an orthonormal wavelet basis made of compactly supported functions, and the computation of the induced velocity field using Biot-Savart's relation. We apply it to a three-dimensional homogeneous isotropic turbulent flow with a Taylor microscale Reynolds number  $R_\lambda = 168$ , computed by direct numerical simulation at resolution  $N=256^3$ . Only 2.9%N wavelet modes correspond to the coherent flow made of vortex tubes, which contribute 99% of energy and 79% of enstrophy, and exhibit the same  $k^{-5/3}$  energy spectrum as the total flow. The remaining 97.1%N wavelet modes correspond to a incoherent random flow which is structureless, has an equipartition energy spectrum, and a Gaussian velocity probability distribution function (PDF). For the same flow and the same compression rate, the proper orthogonal decomposition (POD), which in this statistically homogeneous case degenerates into the Fourier basis, decomposes each flow realization into large scale and small scale flows, in a way similar to large eddy simulation (LES) filtering. It is shown that the large scale flow thus obtained does not extract the vortex tubes equally well as the coherent flow resulting from the CVS decomposition. Moreover, the small scale flow still contains coherent structures, and its velocity PDF is stretched exponential, while the incoherent flow is structureless, decorrelated, and its velocity PDF is Gaussian. Thus, modeling the effect of the incoherent flow discarded by CVS-wavelet shall be easier than modeling the effect of the small scale flow discarded by POD-Fourier or LES.

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## Abstract

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## Coherent vortex extraction in three-dimensional homogeneous turbulence: Comparison between CVS-wavelet and POD-Fourier decompositions

Marie Farge<sup>a)</sup>

*LMD-IPSL-CNRS, Ecole Normale Supérieure, 24 rue Lhomond, 75231 Paris Cedex 05, France*

Kai Schneider

*CMI, Université de Provence, 39 rue Joliot-Curie, 13453 Marseille Cedex 13, France  
and L3M-CNRS, IMT, 38 rue Joliot-Curie, 13451 Marseille Cedex 20, France*

Giulio Pellegrino

*L3M-CNRS, IMT, 38 rue Joliot-Curie, 13451 Marseille Cedex 20, France*

Alan A. Wray and Robert S. Rogallo

*NASA-Ames Research Center, Moffett Field, California 94035*

(Received 22 November 2002; accepted 21 May 2003; published 2 September 2003)

The coherent vortex simulation (CVS) decomposes each realization of a turbulent flow into two orthogonal components: An organized coherent flow and a random incoherent flow. They both contribute to all scales in the inertial range, but exhibit different statistical behaviors. The CVS decomposition is based on the nonlinear filtering of the vorticity field, projected onto an orthonormal wavelet basis made of compactly supported functions, and the computation of the induced velocity field using Biot–Savart’s relation. We apply it to a three-dimensional homogeneous isotropic turbulent flow with a Taylor microscale Reynolds number  $R_\lambda = 168$ , computed by direct numerical simulation at resolution  $N = 256^3$ . Only 2.9%  $N$  wavelet modes correspond to the coherent flow made of vortex tubes, which contribute 99% of energy and 79% of enstrophy, and exhibit the same  $k^{-5/3}$  energy spectrum as the total flow. The remaining 97.1%  $N$  wavelet modes correspond to a incoherent random flow which is structureless, has an equipartition energy spectrum, and a Gaussian velocity probability distribution function (PDF). For the same flow and the same compression rate, the proper orthogonal decomposition (POD), which in this statistically homogeneous case degenerates into the Fourier basis, decomposes each flow realization into large



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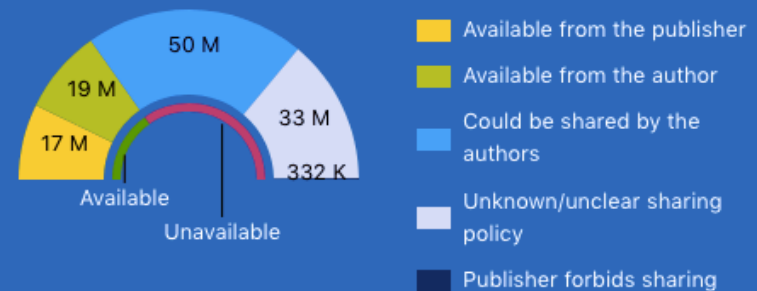
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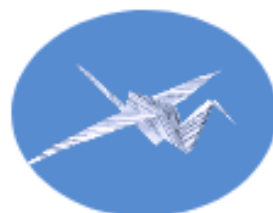
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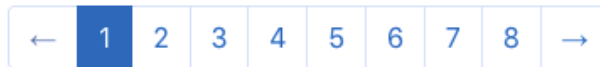
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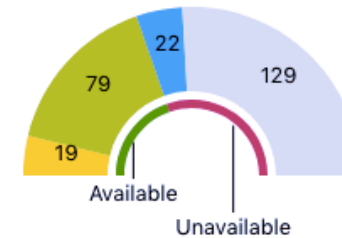
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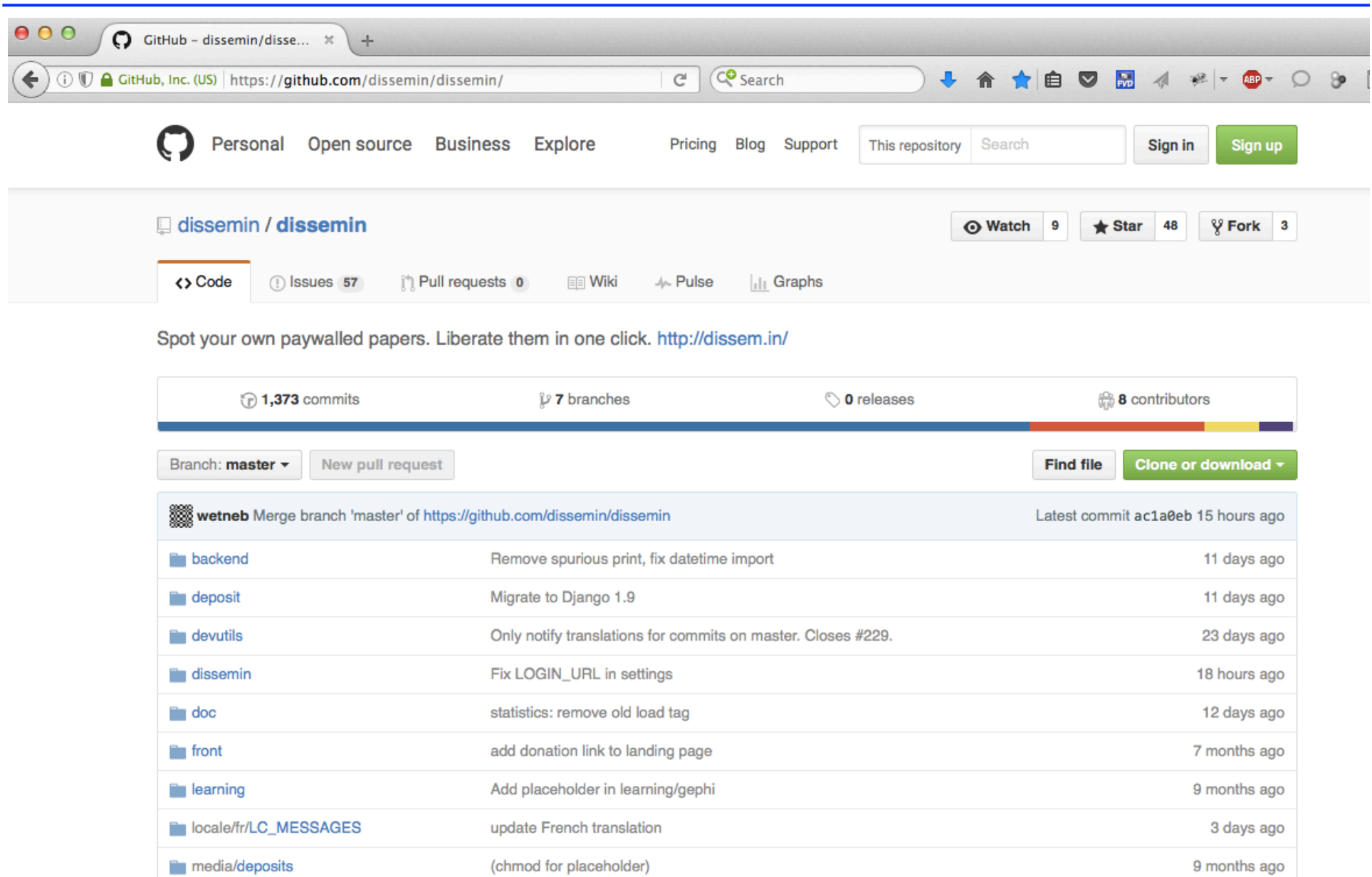
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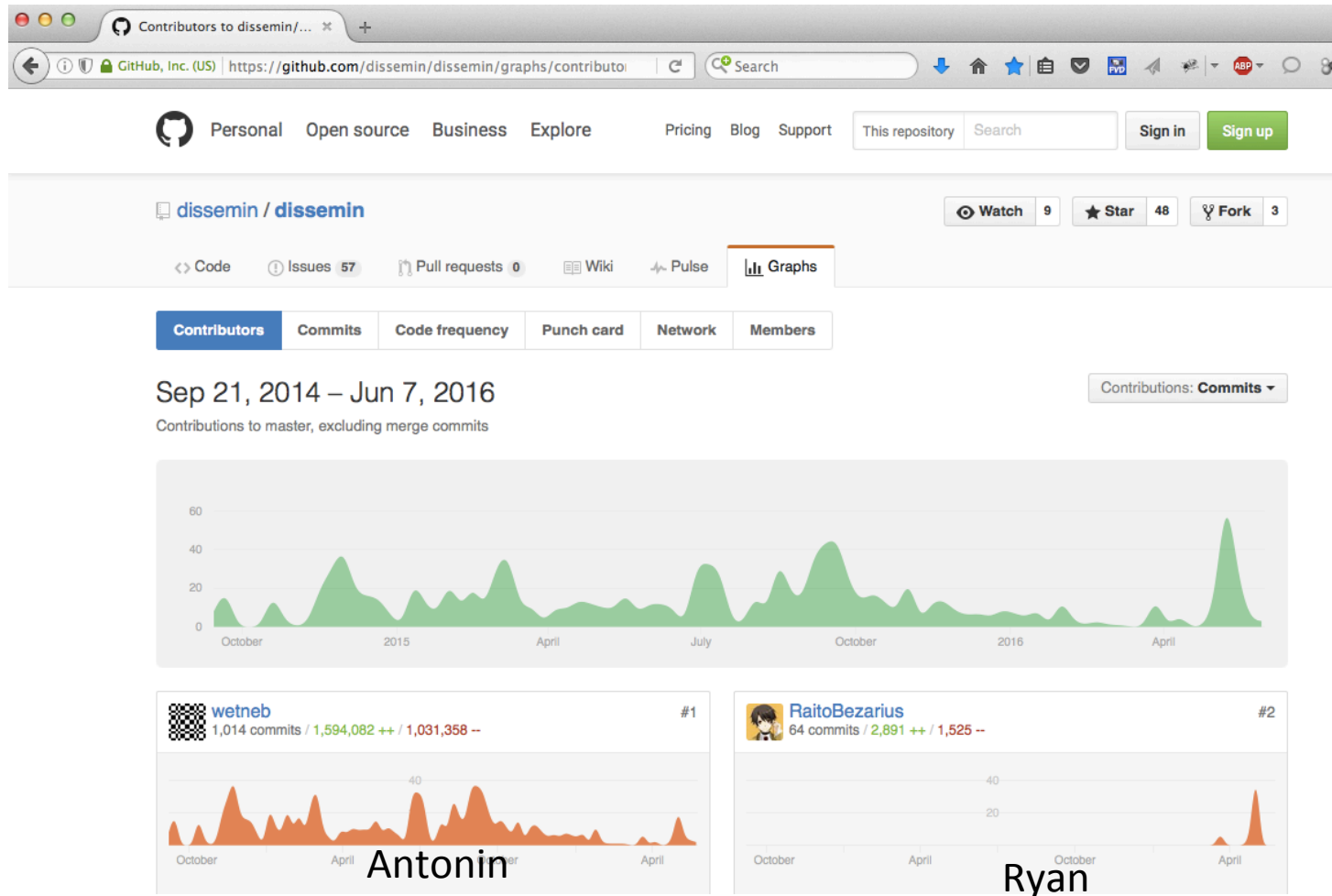
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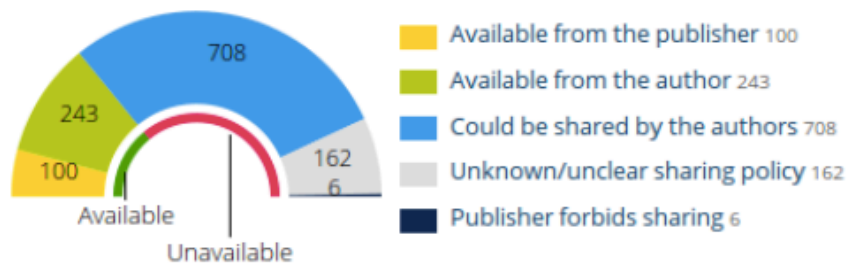


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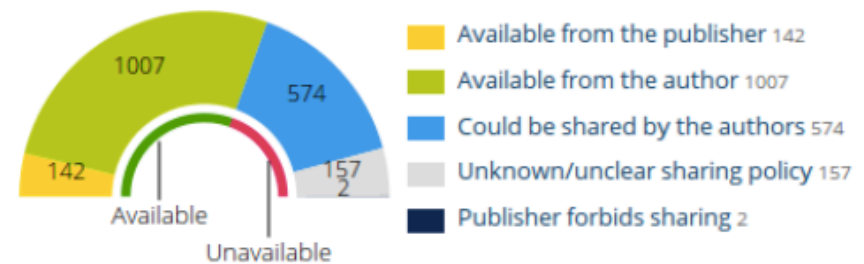
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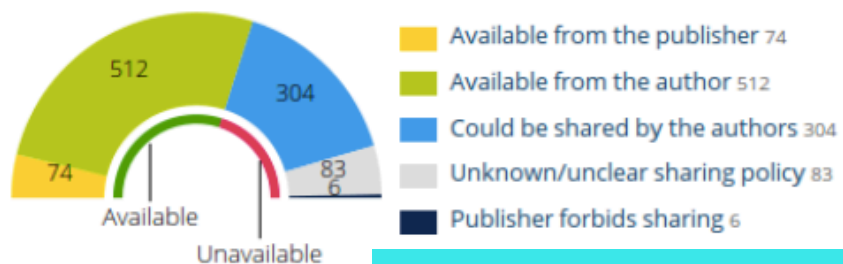
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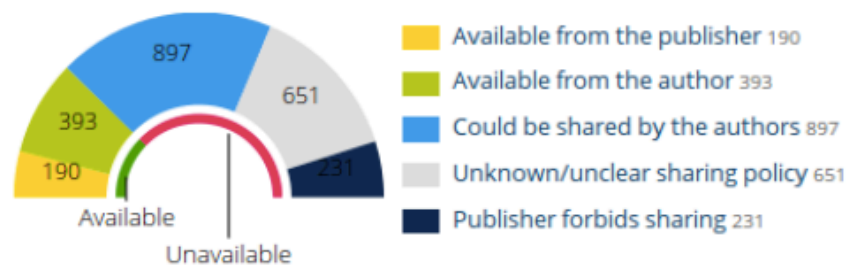
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Yves Pinquier (2 papers)

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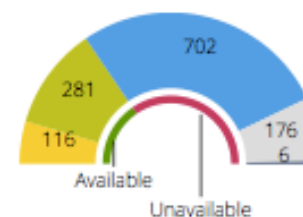
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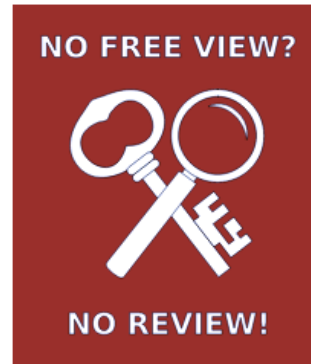


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