



The launch of Centre Mersenne

a technical infrastructure to support the move towards Diamond Open Access

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Context

- The **Centre Mersenne** is a comprehensive Open Access publishing infrastructure for scientific publications prepared in LaTeX.
- It has been launched in January 2018, in Grenoble, France



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- It has been launched in January 2018, in Grenoble, France
- It is developed by **Mathdoc**,



With the support of :

- the **CNRS** (*French National Center for Scientific Research*)
- **University Grenoble Alpes** (UGA),
- **UGA Editions** (*the new publishing house of University of Grenoble Alpes*),
- And Grenoble University excellence initiative **IDEX**.




financé par
IDEX Université Grenoble Alpes

Mathdoc, at the origin of the project

- **Mathdoc** (*Cellule de coordination documentaire nationale pour les mathématiques*): joint service unit of the CNRS & University of Grenoble Alpes.
 - It develops projects and services in the area of scientific information for the French mathematics community:
 - **Numdam**: French digital mathematics library – 60,000 articles, 1 million pages...
 - **Cedram**: Dissemination platform for French mathematics documents.
- Creation in 2005, to address a specific demand from the French academic community asking for a **LaTeX, independent** publication solution. Fully Open Access in 2017.

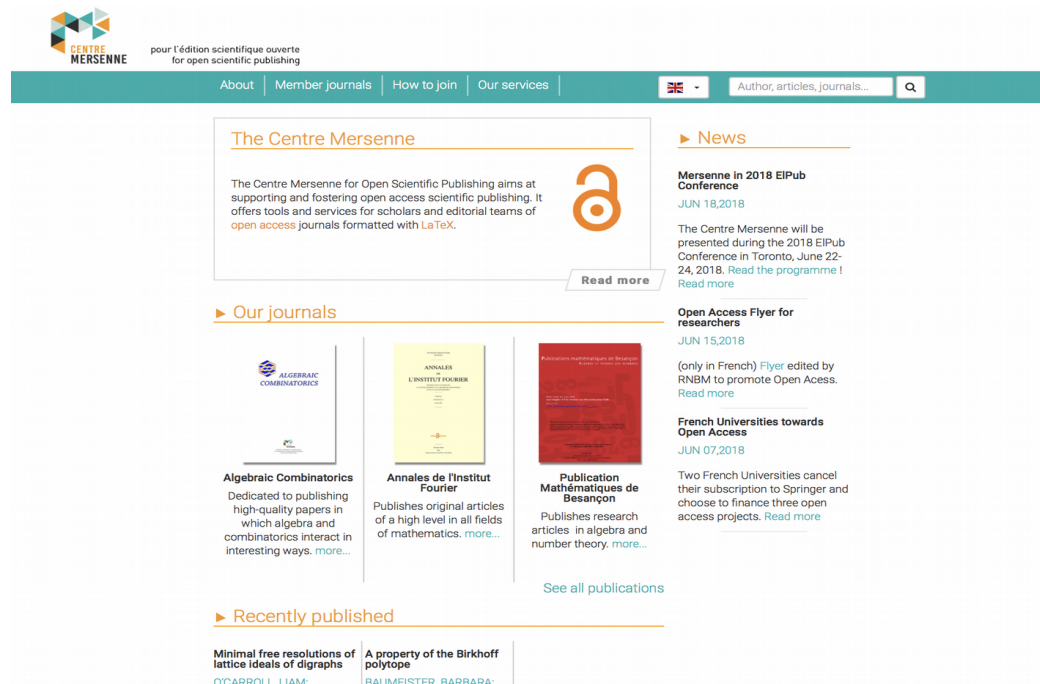
An Open Access publication alternative

- **2018**: Creation of the Centre Mersenne.
 - To address a specific demand from the scientific community, challenging the traditional publishing system dominated by for-profit publishers.
 - Claims for alternative open access solutions like Cedram.
-
- **Diamond Open Access**
= Gold no-APC OA
 - **Not-for-profit**
 - **Public**
- 
- Affordable price
 - Authors keep the main copyright
 - By researchers, for researcher



Objectives of the Centre Mersenne

- To provide a **sustainable and scalable publishing platform** for dissemination of open access research publications.
- To provide a set of modular professional tools and **publishing services** to help editorial teams manage a journal.





Publications...

- Journals, proceedings, books
 - Any scientific domain
 - Local or international base
 - Newly-created or existing
 - Published in LaTeX
 - Engaged towards Diamond Open Access
- Peer-reviewed research publications
 - Articles selected on behalf of a competent, scientifically independent editorial board
 - The editorial board owns its publication's title



Team & Governance

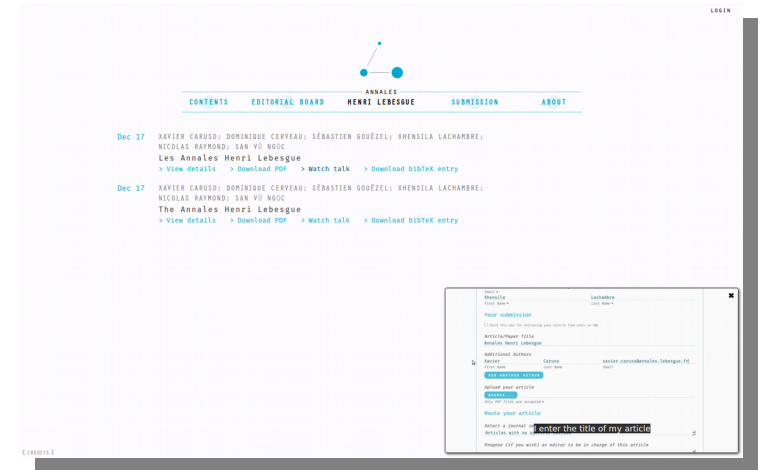
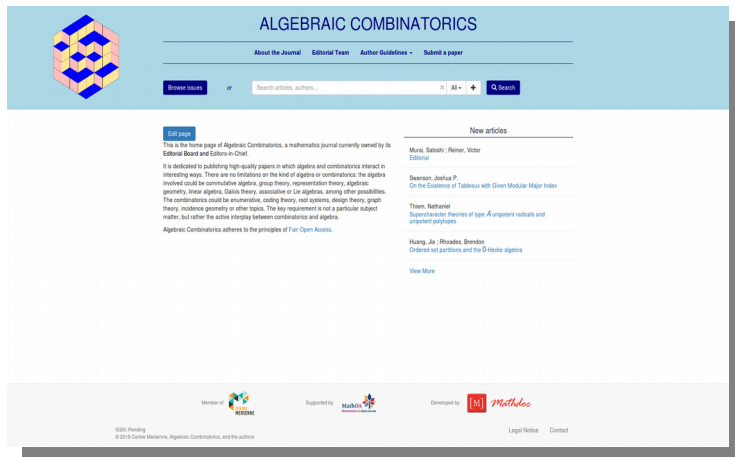
- A **team** lead by two mathematicians, comprising IT developers, LaTeX copy-editors, project coordinator and administrative staff
- 2 Governing bodies
 - **A scientific council**: evaluates the scientific relevance of publications willing to join Mersenne.
It is composed of 8 to 12 renowned scientists.
 - **A steering committee**: deliberates, makes decisions, advises, provides strategic oversight.
It is composed of representatives of our funding partners: the CNRS and of University of Grenoble Alpes.

Free Services

1st main set: **Online Publication & Dissemination**

For publication

- Personalised website creation
- Personalised LaTeX style



For dissemination and interoperability

- DOI (Digital Object Identifier)
- OAI-PMH server for data harvesting
- Support to indexation
- Crosslinking

Long-term archiving
Through CLOCKSS solution



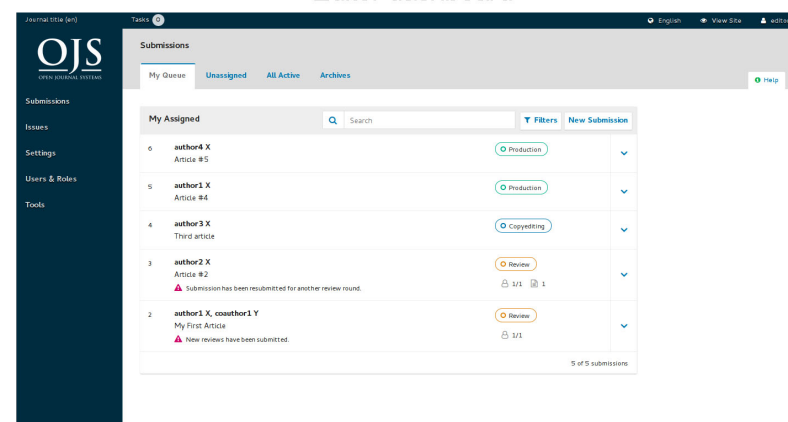
Free Services

2d main set: **Support to Editorial Process, via Open Journal System (OJS)**

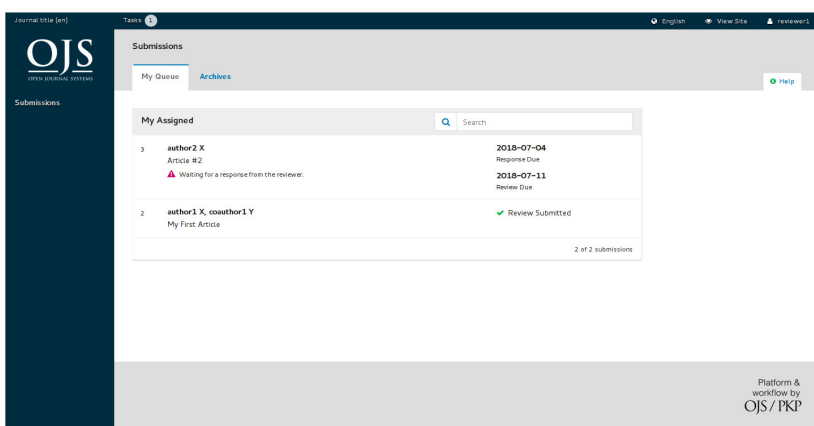
To manage the peer review process.

- Installation
- Customisation
- Hosting & maintenance
- Documentation & training

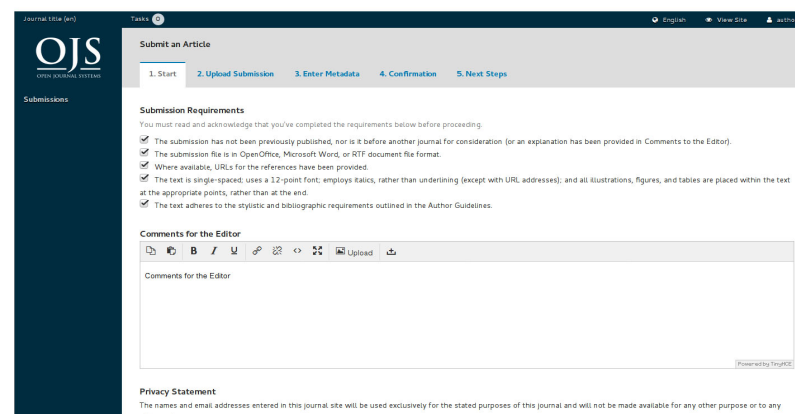
Editor dashboard



Reviewer dashboard



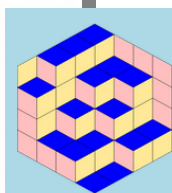
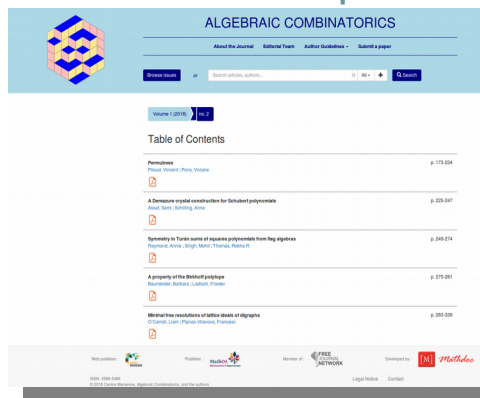
Author submission





Publication website

Publication Website
Browse per volume



ALGEBRAIC COMBINATORICS

About the Journal Editorial Team Author Guidelines Submit a paper

Browse issues or Search articles, authors... All

Previous Volume 1 (2018) no. 2 p. 249-274 Next

Display TeX source code

Symmetry in Turán sums of squares polynomials from flag algebras

Raymond, Annie; Singh, Mohit; Thomas, Rekha R.

Algebraic Combinatorics, Volume 1 (2018) no. 2, p. 249-274



Abstract

Turán problems in extremal combinatorics ask to find asymptotic bounds on the edge densities of graphs and hypergraphs that avoid specified subgraphs. The theory of flag algebras proposed by Razborov provides powerful methods based on semidefinite programming to find sums of squares that establish edge density inequalities in Turán problems. Working with polynomial analogs of the flag algebra entities, we prove that such sums of squares created by flag algebras can be retrieved from a restricted version of the symmetry-adapted semidefinite program proposed by Gatermann and Parrilo. This involves using the representation theory of the symmetric group for finding succinct sums of squares expressions for invariant polynomials. The connection reveals several combinatorial and structural properties of flag algebra sums of squares, and offers new tools for Turán and other related problems.

Article information

BibTeX How to cite

Received : 2017-08-24

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DOI : <https://doi.org/10.5802/alco.5>

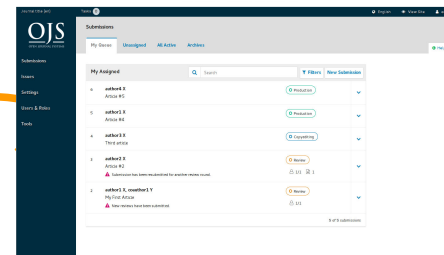
Classification: 05D99, 12D15, 90C22

Keywords: sums of squares, semidefinite programming, flag algebras, extremal combinatorics, symmetry

References

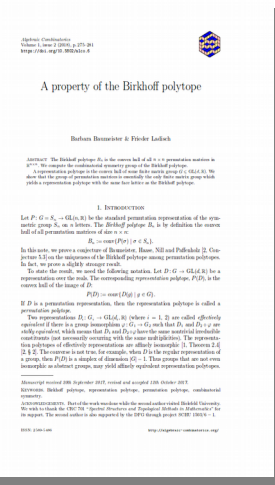
- [1] BACHOC, C.; GUSWIT, D. C.; SCHRUEVER, A.; VALLENTIN, F. Invariant semidefinite programs, *Handbook on Semidefinite, Conic and Polynomial Optimization*, Springer, New York (Internat. Ser. Oper. Res. Management Sci.) Volume 166 (2012), pp. 219-269 | [Article](#) | [MR 2894697](#) | [Zbl 1334.90097](#)
- [2] BLEKHERMAN, G.; PARRILO, P. A.; THOMAS, R. R. Semidefinite Optimization and Convex Algebraic Geometry, Society for Industrial and Applied Mathematics (SIAM), Philadelphia, PA; Mathematical Optimization Society, Philadelphia, PA, *MOS-SIAM Series on Optimization*, Volume 13 (2013), 476 pages | [MR 3075433](#) | [Zbl 1260.90006](#)
- [3] CHUNG, F.; LU, L. An upper bound for the Turán number $t_3(n, 4)$, *J. Combin. Theory Ser. A*, Volume 87 (1999) no. 2, pp. 381-389 | [Article](#) | [MR 1704268](#) | [Zbl 0946.05063](#)
- [4] DE KLERK, E.; DE OLIVEIRA FILHO, F. M.; PASECHNIK, D. V. Relaxations of combinatorial problems via association schemes, *Handbook on Semidefinite, Conic and Polynomial Optimization*, Springer, New York (Internat. Ser. Oper. Res. Management Sci.) Volume 166 (2012), pp. 171-199 | [Article](#) | [MR 2894695](#) | [Zbl 1334.90100](#)
- [5] ERDŐS, P.; STONE, A. H. On the structure of linear graphs, *Bull. Amer. Math. Soc.*, Volume 52 (1946) no. 3, pp. 1087-1091 | [Article](#) | [MR 18807](#) | [Zbl 0063.01277](#)

OJS Instance



Article Page

Article in LaTeX style



Download



Charged Services

3rd main set: **Editing**

For a better formatted document.

- Typesetting
- Copy-editing
- Proofreading

Additional services

- Plagiarism detection
- Print-on-demand
- Managing Editor



Business Model

Aim: to build up a sustainable and scalable business model

On a basis of 4 to 6 new publications/year

The Centre Mersenne's main costs

1. Infrastructure development & maintenance
2. Initial set-up per publication (Publication and OJS services)
3. Training of teams and staff
4. Running costs depending on each publication (e.g. editorial organization and volume published)

Funding Sources

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Journals → supporting institutions (university, learned society...)
Fees based on cost.

Other fundings are being considered to be able to welcome more publications and lower fees: donations, support by library consortium...



Centre Mersenne's publications

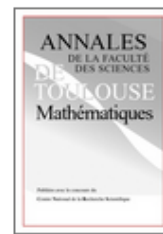
Journals



Algebraic Combinatorics



Annales Henri Lebesgue

Annales de la faculté des sciences de
Toulouse

Annales de l'institut Fourier



Annales mathématiques Blaise Pascal



Confluentes Mathematici



Journal de l'École polytechnique



Journal de théorie des nombres de Bordeaux



MathS In Action



Publications Mathématiques de Besançon



SMAI Journal of Computational Mathematics



Thank you for your attention !

www.centre-mersenne.org

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