



The centre Mersenne for Diamond Open Access

Evelyne Miot

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Submitted on 15 Jun 2023

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*The centre Mersenne
for Diamond Open Access: a summary
of five years of existence*

Evelyne Miot

Cellule Mathdoc
Université Grenoble Alpes & CNRS (France)

Masterclass: Open Science and Scientific Publishing
Formation du Collège Doctoral, UGA
June 14, 2023

Plan of the talk

- 1 The centre Mersenne
- 2 Staff & governance
- 3 Services
- 4 Business model
- 5 A focus on 2 examples
- 6 On-going projects & perspectives

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The centre Mersenne

The centre Mersenne is a public comprehensive **Diamond Open Access (free to read, no charge to publish)** publishing infrastructure for scientific publications.

It provides editorial teams with

- a **publishing platform** for hosting and dissemination of open access research publications;
- a range of **editorial and technical tools and services** to help to manage the journal workflow (peer-review process, publication...).

The centre Mersenne is developed by **Mathdoc**, a French Support and Research unit of Centre National de la Recherche Scientifique and Grenoble University.

The centre Mersenne has been launched in 2018 with 10 mathematics journals.

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Supporting institutions

The centre Mersenne is developed by **Mathdoc**



Mathdoc's mission is to develop services towards the scientific community:

- maker of **Numdam** (French digital mathematics library);
- maker of Cedram 1995-2018 (publishing platform for french mathematics journals, extended to the centre Mersenne)
- partner of **EuDML** (European digital mathematics library).

Centre Mersenne additional supports

- Grenoble IDEX (French funds for supporting excellence in universities)
- Fonds National pour la Science Ouverte (National funding for open access in France)
- Ministry of Higher education and research
- ...

The centre Mersenne

What kind of publications?

- Research journals and proceedings;
 - newly created or already existing; **flipping journals** are welcome
 - of all scientific disciplines in the fields of STEM (science, technology, engineering and mathematics), with an initial kernel in maths;
 - compliant with **best editorial practices**;
 - formatted with \LaTeX ideally;
 - published in **Diamond Open Access** (no charge to read, no charge to publish).
- The articles are distributed with a Creative Commons CC-BY licence.

The centre Mersenne

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- compliant with **best editorial practices**;
- formatted with **L^AT_EX** ideally;
- published in **Diamond Open Access** (no charge to read, no charge to publish).
The articles are distributed with a Creative Commons CC-BY licence.

Trajectory

- 2018 10 journals, 210 articles published (7 000 pages). *Mathematics*.
- 2019 13 journals, 270 articles published (9 000 pages).
+ *Geomechanics*
- 2020 21 journals, 600 articles published (12 700 pages)
+ *Chemistry, Physics, Biology, Earth Sciences* (= *Comptes Rendus de l'Académie des sciences*)
- 2021 22 journals, 884 articles published (17 834 pages) + *several scientific disciplines* (= *Peer Community Journal*)
- 2022 23 journals, 872 articles published (18 804 pages)
- 2023 \geq 24 revues, + *Computer Sciences*.

Thematic distribution

- *Maths* (15 journals + 1 book + 6 seminars)
- *AI* (1)
- *Physics* (1), *Mechanics* (1), *Geomechanics* (1), *Biology* (1), *Chemistry* (1), *Earth Sciences* (1)
- *Multi-disciplinary journal in Sciences and Techniques* (1).

The dissemination platform

centre-mersenne.org/en/

Numdam Mathdoc



ABOUT

OUR JOURNALS

OUR SERVICES

JOIN US

TOOLBOX

NEWS

Q

THE CENTRE MERSENNE ►

An open access publishing platform for scientific publications.

The centre Mersenne is a diamond open access scientific publishing infrastructure developed by [Mathdoc](#), a support and research unit of [CNRS](#) and [Université Grenoble Alpes](#). The centre Mersenne provides all the publishing tools and services that enable editorial teams to manage, produce and distribute their publications.

The journals, books, proceedings or seminars are from all scientific disciplines, composed in LaTeX and distributed in open access.



Some journals websites



Effects of Particle Shape on the Shear Wave Velocity and Shear Modulus of 3D Printed Sand Analogs

Armed, Shaah Sharif, Martinez, Alejandro

Isolating the effects of individual particle properties (e.g. shape, size, mineralogy, surface roughness) on...
Published: 2022-03-16 PDF

HOME ABOUT SUBMIT



Removal of the membrane penetration error from triaxial data

Niemunis, Andras; Kintzi, Lukas

Most triaxial tests are fraught with substantial membrane penetration errors. A simple correction...
Published: 2020-12-09 PDF



Finite hyperplasticity theory for crushable, granular materials

Chlysh, Kateryna; Tamagnini, Claudio

The work is focused on the formulation of a thermodynamically based...
Published: 2020-11-16 PDF

Home About Submit Instructions Privacy

Peer Community Journal

Search in titles, authors...

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Pre- and post-exposition behavioural strategies to protect rigo against extreme winter cold in an insect with external care

Armed, Shaah Sharif, Martinez, Alejandro

Isolating the effects of individual particle properties (e.g. shape, size, mineralogy, surface roughness) on...
Published: 2022-03-16 PDF

Programmes Équipe Recherche Publications Articles

Rechercher des articles, documents...

Publication Volume 2 (2021) no. 1 p. 35-48

Traitement d'Images et Apprentissage Automatique pour la Vision de Précision

Lucas Mouton, Anne Chénouet, Marine Roudot, Mathias Roudot, François Miot, Nathalie Bouteau, Lucie Gauthier

Revue Journal

Avant de commencer, les chercheurs ont été au point des méthodes algorithmiques existantes pour aller des utilisateurs à résoudre leurs problèmes, principalement liés à la précision des rendements après la récolte. L'objectif de cet article est de résoudre les problèmes de traitement des images et d'apprentissage automatique pour l'analyse des rendements. Il s'agit de combiner des images RGB obtenues directement sur les parcelles, en utilisant différentes combinaisons d'algorithmes classiques de traitement d'images, et d'apprentissage automatique pour la précision des rendements. Les résultats algorithmiques sont évalués en termes de précision des rendements et de temps de calcul. Les résultats sont comparés à ceux des méthodes classiques, afin de montrer que les nouvelles méthodes sont plus précises et plus rapides. Les résultats sont comparés à ceux des méthodes classiques, afin de montrer que les nouvelles méthodes sont plus précises et plus rapides. Les résultats sont comparés à ceux des méthodes classiques, afin de montrer que les nouvelles méthodes sont plus précises et plus rapides.

Différent Expert Commentaire

News in: 2021-02-05

One website: les Annales de l'institut Fourier



ANNALES DE L'INSTITUT FOURIER

ABOUT THE JOURNAL EDITORIAL BOARD SUBMIT A PAPER SUBSCRIPTION

Articles to appear Browse issues Search articles, authors... All + Search

NOT Author -

All
Author
Title
Date
References
Full text

New article

Commutability of groups of trees
Carfite, Mathieu

Group orderings, dynamics, and rigidity
Marr, Kalleen; Pivas, Cristóbal

Diffraction of elastic waves by edges
Katsnelson, Vitaly

Invariants de Hodge pour 5-ordinaires [Simu
S-ordinary Hodge invariants]
Hernandez, Valentin

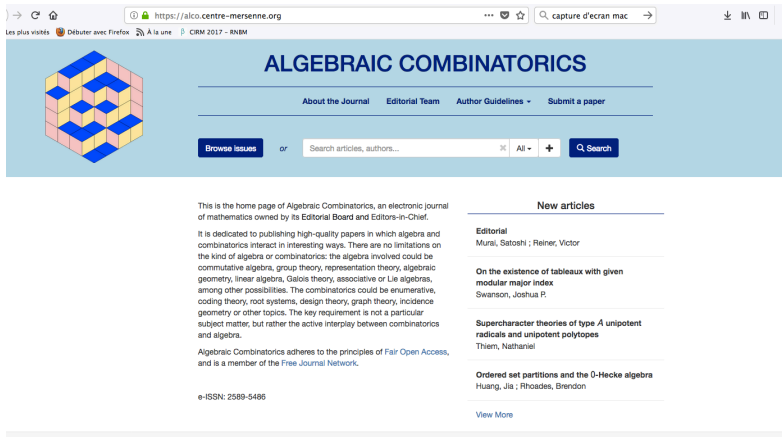
[View More](#)

Web publisher:  Kluwer

Supported by:  INSTITUT FOURIER

Developed by:  Mathdoc

Another website: Algebraic Combinatorics



The screenshot shows the homepage of the Algebraic Combinatorics journal website. The browser address bar displays the URL `https://alco.centre-mersenne.org`. The page features a light blue header with the journal title "ALGEBRAIC COMBINATORICS" in large, bold, dark blue letters. To the left of the title is a 3D geometric logo composed of blue, yellow, and pink cubes. Below the title, there are navigation links: "About the Journal", "Editorial Team", "Author Guidelines", and "Submit a paper". A search bar is located below these links, with a "Browse issues" button on the left and a "Search" button on the right. The main content area is divided into two columns. The left column contains a paragraph about the journal's focus on algebra and combinatorics, followed by a paragraph about its adherence to Fair Open Access principles and its membership in the Free Journal Network. The right column is titled "New articles" and lists three recent publications with their authors. At the bottom right of the page, there is a "View More" link.

https://alco.centre-mersenne.org

ALGEBRAIC COMBINATORICS

About the Journal Editorial Team Author Guidelines Submit a paper

Browse issues or Search articles, authors... All Search

This is the home page of Algebraic Combinatorics, an electronic journal of mathematics owned by its Editorial Board and Editors-in-Chief.

It is dedicated to publishing high-quality papers in which algebra and combinatorics interact in interesting ways. There are no limitations on the kind of algebra or combinatorics: the algebra involved could be commutative algebra, group theory, representation theory, algebraic geometry, linear algebra, Galois theory, associative or Lie algebras, among other possibilities. The combinatorics could be enumerative, coding theory, root systems, design theory, graph theory, incidence geometry or other topics. The key requirement is not a particular subject matter, but rather the active interplay between combinatorics and algebra.

Algebraic Combinatorics adheres to the principles of [Fair Open Access](#), and is a member of the [Free Journal Network](#).

e-ISSN: 2589-5486

New articles

Editorial
Murai, Satoshi ; Reiner, Victor

On the existence of tableaux with given modular major index
Swanson, Joshua P.

Supercharacter theories of type A unipotent radicals and unipotent polytopes
Thiem, Nathaniel

Ordered set partitions and the \mathbb{O} -Hecke algebra
Huang, Jia ; Rhoades, Brendon

[View More](#)

Related editorial platforms in Diamond Open Access

- **Episciences** (épiMaths for mathematics), developed by the french unit CCSD, an **overlay journal platform** based on the open institutional repository HAL;
- **SciPost** (originally Physics);
- **OpenEdition** for social sciences/humanities, developed by CNRS & french institutions
- **SciELO**, Redalyc (mainly journals based in South America platform, all scientific disciplines), **eLibM** (supported by German institutions), ...

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The staff

The team is composed of Mathdoc staff $\simeq 15$ people $\simeq 10$ FTE dedicated to the centre Mersenne:

- 1 coordinator
- 1 editor
- 1 managing editor
- 2 typesetter \LaTeX /XML,
- 5 IT developers,
- + administrative support,
- scientifically led by 2 mathematicians.

10 members hold a permanent position.

(+ 2 freelances for part of the typesetting activity).

Governance

- The **scientific council**
 - evaluates candidate journals;
 - advises on orientations and priorities;
 - comprises 8 to 12 scientists (mainly mathematicians) assisted by a pool of experts.
- The **steering committee**
 - takes advice from the scientific council;
 - decides on priorities and allocates resources;
 - comprises Mathdoc directors and representatives of Mersenne's supporting institutions.

Plan of the talk

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Editorial services

The essential editorial services systematically provided:

- Online publication and dissemination of articles on the centre Mersenne platform:
 - creation of a specific and customised website for each publication
 - attribution of DOI (Digital Object Identifier) with Crossref
 - crosslinking with reference databases, interoperability, an OAI-PMH server...
 - long term preservation through CLOCKSS
 - plagiarism detection
 - Statistics "counter", cited-by tool
- Creation of a customised L^AT_EX template
- Installation and maintenance of Open Journal System (OJS):
 - customisation of a dedicated instance adapted to the editorial board's evaluation process;
 - maintenance and support;
 - documentation and training.

Optional services

- \LaTeX typesetting and layout editing;
- copyediting, proofreading
- managing editor, journal workflow assistance;
- printing (on demand or a posteriori);
- ...

Browsing

Browsing a journal website and accessing articles...

The sequence of screenshots illustrates the browsing process on the Algebraic Combinatorics journal website:

- Table of Contents:** The first screenshot shows the journal's homepage with a navigation bar and a 'Table of Contents' section. The table lists several articles, including 'A new approach to the study of the combinatorics of the symmetric group' by Barina, Barina, and Barina, dated 2019-01-01.
- Article Page:** The second screenshot shows the full article page for 'A new approach to the study of the combinatorics of the symmetric group'. It includes the article title, authors, and a detailed abstract.
- Article Page (Continued):** The third screenshot shows the continuation of the article page, displaying the full text of the article.

 **ALGEBRAIC
COMBINATORICS**

Barina, Barina & Barina
A new approach to the study of the combinatorics of the symmetric group

2019-01-01

10.1017/S0004972619000001

10.1017/S0004972619000001

10.1017/S0004972619000001

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Searching

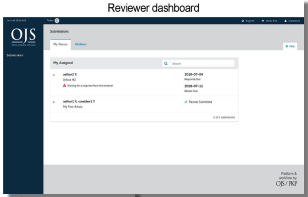
Searching articles in a journal website. . .



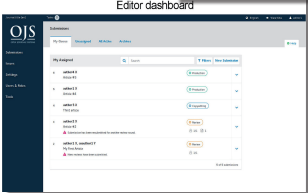
The screenshot shows the homepage of the Annales de l'Institut Fourier journal website. At the top, there is a navigation bar with links: ABOUT THE JOURNAL, EDITORIAL BOARD, SUBMIT A PAPER, and SUBSCRIPTION. Below this is a search bar with the text "Search articles, authors..." and a dropdown menu for "Author" with options: All, Author, Title, Date, References, and Full text. To the left of the search bar are buttons for "Articles to appear" and "Browse issues". To the right is a "Search" button. Below the search bar, there is a list of articles. The first article is "Commutability of groups of trees" by Girelle, Mathieu. The second article is "Group orderings, dynamics, and rigidity" by Marin, Kathryn; Pivas, Cristóbal. The third article is "Diffraction of elastic waves by edges" by Katanelson, Vitaly. The fourth article is "Invariants de Hasse S -modulaires" by Hernandez, Valentin. At the bottom, there is a footer with logos for Web publisher (Kluwer), Supported by (Institut Fourier), and Developed by (Mathdoc).

Managing submissions. . .

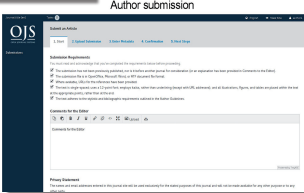
Reviewer dashboard



Editor dashboard



Author submission



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Average production cost of an article at centre Mersenne (2020 - 2021)

Production cost per article or page (estimate)

- **Production cost per article:** 810 € (all journals) / 780 € (when not including *Comptes Rendus*) / 140 € for *Peer Community Journal*
- **Production cost per page:** 41 € (all journals) / 28,5 € (when not including *Comptes Rendus*)

This does not take into account: volunteer work of researchers, editorial management,

Business model - general ideas

- Our model is **Diamond OA**: No fees for the authors, no fees for the readers.
- Our business model must be **scalable and sustainable** to welcome 1 to 3 new journals per year.
- So we need to **recover at least running costs** from the journal or from the organisations that support it.
- But our costs have to remain **very low, when not zero**, especially for the journals that have few financial means.

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Business model - structure of costs

- **General running of the infrastructure and essential publication services**
 - Almost completely supported by CNRS and Univ. Grenoble (staff, costs)
 - + a modest journal annual subscription (**not applicable for journals supported by CNRS**)
 - + funding from institutions, foundations, libraries;
- **Recurrent costs associated to optional services, proportional to the volume published:** covered by invoicing the journal or its supporting institution(s) at cost price or by specific institutional supports. (**not applicable for journals supported by CNRS**)

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A journal flipping: *Algebraic Combinatorics*

- **History and setting:** in 2018, almost all the editors of the *Journal of Algebraic Combinatorics* published by Springer **resign** from that journal.

They create and become editor of a new journal published by centre Mersenne, under the new name: *Algebraic Combinatorics*. Springer retains the property of the title *Journal of Algebraic Combinatorics*.

- **Volume:** 700 pages in 2018, more than 1300 pages in 2019, 2020, 1100 pages in 2021, 1400 in 2022
- **Legal publishers:** association MathOA until 2021, The Combinatorics Consortium since 2022.
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Another journal flipping: *Les Comptes Rendus de l'Académie des sciences*

- *Les Comptes Rendus de l'Académie des sciences* is the journal of the French Academy of sciences created in 1835 by the physicist François Arago. It is divided in seven titles: *Mathematics, Physics, Biology, Mechanics, Chemistry, Earth Sciences, Paleontology*.
- 1997-2019: Published by Elsevier.
- In 2020, under the initiative of Etienne Ghys, *Les Comptes Rendus de l'Académie des sciences* becomes a Diamond journal published by the centre Mersenne.
- **Volume:** around 5000 pages per year.
- **Legal publisher & owner of the title:** Académie des sciences
- **Financial support:** CNRS in 2020, Académie des sciences...

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A common challenge for Académie des sciences and centre Mersenne

- Doubling the publication volume of the centre Mersenne.
- New disciplines \rightsquigarrow new purposes, new formats (\LaTeX or word with HTML), indexation to new databases, new templates.
- New metadata: Orcid identifiers, Equal Contrib...
- For the centre Mersenne, need to scale-up our administrative and financial procedures (public markets for suppliers, diffusion agreements with journals, official pricing).
- For the Académie des sciences, need to find a recurrent funding for the production costs.
- This transition has revitalized the journal and led to new projects: semi-automatic translation, on-line comments (on-going)

The website of Comptes Rendus - Géoscience

Mathématique Mécanique Physique **Géoscience** Palevol Chimie Biologies



ACADÉMIE
DES SCIENCES
INSTITUT DE FRANCE

Comptes Rendus Géoscience *Sciences de la Planète*

À propos - Organisation Collections Soumettre un article -



Feuilleter

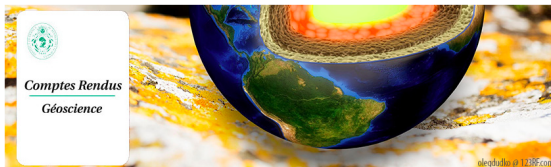
ou

Rechercher des articles, des auteurs...



Tout +

Rechercher



]

Journal layout: Physics



INSTITUT DE FRANCE
Académie des sciences

Comptes Rendus Physique

Yusef Nir and Vincenzo Vagnoni

CP violation in B decays

Volume 21, Issue 1 (2020), p. 61–74

<https://doi.org/10.5802/crphys.11>

Part of the Thematic Issue: A perspective of High Energy Physics from precision measurements

Guest editors: Stéphane Morel (Clermont Université, CNRS/IN2P3, Clermont-Ferrand) and Mario-Hélène Schme (Université Paris-Saclay, CNRS/IN2P3, Orsay)

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<http://creativecommons.org/licenses/by/4.0/>



Les Comptes Rendus. Physique sont membres du
Centre Mersenne pour l'édition scientifique ouverte
www.centre-mersenne.org

Yusef Nir and Vincenzo Vagnoni

65

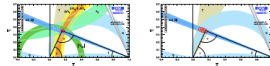


Figure 1. The constraints in the (β, η) plane from (left) all relevant processes, and (right) from CP-violating asymmetries in B decays only [31].

4. The CKM mechanism and CP violation in beauty

The three-generation SM violates CP. Among the parameters of the SM Lagrangian, there is a single phase (or, equivalently, a single imaginary parameter), which appears in V , the CKM matrix that parametrises the W^\pm interactions with $\bar{u}_i d_j$ pairs (where $u_{1,2,3} = u, c, t$, and $d_{1,2,3} = d, s, b$)

$$\mathcal{L}_{W,q} = -\frac{g}{\sqrt{2}} \bar{u}_i V_{ij} V_j^\dagger d_j + \text{h.c.} \quad (12)$$

The CKM matrix depends on three real and one imaginary parameters. The Wolfenstein parametrisation is particularly useful

$$V = \begin{pmatrix} 1 - \frac{1}{2}A^2 & A & A\lambda^3(p - i\eta) \\ A\lambda^3(1 - \rho - i\eta) & 1 - \frac{1}{2}A^2 & A\lambda^2 \\ A\lambda^3 & A\lambda^2 & 1 \end{pmatrix}. \quad (13)$$

The fact that all quark flavour-violating processes and all CP-violating processes depend on only three real (λ, A, ρ) and one imaginary (η) parameters makes the CKM mechanism of flavour and CP violation subject to stringent tests. Here, CP-violating processes play a special role. The fact that CP is a good symmetry of the strong interactions implies that CP asymmetries dominated by interference of decays with and without mixing are subject to a uniquely clean theoretical interpretation. Thus, for example, within the SM

$$\mathcal{S}(\text{Br}(A_q \epsilon_q)) = \frac{2\eta(1-\rho)}{\eta^2 + (1-\rho)^2}, \quad (14)$$

with hadronic uncertainties entering only at the level of a few per cent corrections.

In the literature, one often defines $\beta + i\eta = -(V_{ub}V_{cb}^*)/(V_{ud}V_{cd}^*)$ which is valid to all orders in λ . The parameters ρ and η approximate β and η to order λ^2 . The various constraints in the (β, η) plane are presented in Figure 1. CP asymmetry in B decays are playing a major role, $\mathcal{A}_{CP}^{\text{tree}}$, $\mathcal{A}_{CP}^{\text{box}}$ and the CP asymmetry in $B \rightarrow DK$ decays constrain with impressive accuracy the angles

$$\alpha = \arg\left(\frac{V_{td}V_{ub}^*}{V_{ud}V_{ub}^*}\right), \quad \beta = \arg\left(\frac{V_{td}V_{cb}^*}{V_{ud}V_{cb}^*}\right), \quad \gamma = \arg\left(\frac{V_{ub}V_{cb}^*}{V_{ub}V_{cb}^*}\right), \quad (15)$$

respectively. As there is a region in the (β, η) plane that is consistent with all measurements, the CKM mechanism of flavour violation and the CKM mechanism of CP violation provide a consistent explanation of all data.

5. Probing new physics with CP violation in B decays

The consistency of the measured CP violation in B decays with the SM predictions leads to strong constraints on new physics. In the previous section, we assumed that the various flavour-violating and CP-violating observables are accounted for by the CKM matrix, and tested the

Journal layout: Chemistry



INSTITUT DE FRANCE
Académie des sciences

Comptes Rendus Chimie

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Optical and photoelectronic properties of a new material:
Optoelectronic application

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Table 3. Electrical parameters of the (TbO/PS/Al) system

Complex	I_0 (A)	Φ_b (V)
$[\text{Zn}(\text{TMPP})(4,4'-\text{bipy})-2](4,4'-\text{bipy})-2\text{H}_2\text{O}$	6.027×10^{-8}	1.2353

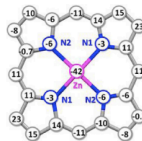


Figure 4. Schematic representation of the porphyrin macrocycle of the $[\text{Zn}(\text{TMPP})(4,4'-\text{bipy})]$ complex showing the displacements of each atom from the 24-atom mean plane in units of 0.01 Å.

$[\text{Zn}(\text{TMPP})(\text{HMTA})]$, we note that our complex (I) has a high barrier height Φ_b compared to the related zinc-IMETA derivative. This is most probably due to the aromatic ligand 4,4'-bipy for (I), which can prevent the distribution of the charge contrary to the case of the related species containing the non-aromatic ligand HMTA.

It is the same for the saturation current 6.027×10^{-8} for our zinc(II)-4,4'-bipy derivative, which is very low compared to that of the related $[\text{Zn}(\text{TMPP})(\text{HMTA})]$ complex whose value is equal to 6.57×10^{-5} . These results show that the nature of the axial ligand plays a very important role in the optoelectronic properties for this type of porphyrin compound.

The variation of I as a function of V has been represented in a log-log plot to better study the mechanism of electrical conduction across the junction (Figure 6).

For complex (I), as shown by this figure, there are different regions where the current varies as a function of the potential according to the relation $I = V^m$, where m represents the slope for each region and provides information about the type of conduction mechanism.

The slope value is close to unity at low voltage defining the ohmic region. In this region, the presence of a small amount of interface barrier hinders charge injection. In this case, the density of thermally excited load carriers is insufficient and trap levels are empty [32]. The current density is given by (2):

$$J_0 = q \cdot p_0 \cdot \mu \cdot \frac{V}{d} \quad (2)$$

Here q is the electronic charge, μ is the charge mobility, p_0 is the free carrier density, d is the film thickness and V is the applied voltage.

The slope value is approximately 1.6 at medium voltage in the case of our zinc porphyrin complex, where the voltage follows the power law dependence ($I-V$), which is related to the space-charge limited current mechanism (SCLC). Moreover, the density of the injected charges from electrodes increases. Since the applied voltage passes through the transition voltage $V = 0.53$ V, the density of the injected charges will dominate the transport capacity of the $[\text{Zn}(\text{TMPP})(4,4'-\text{bipy})-2](4,4'-\text{bipy})-2\text{H}_2\text{O}$ complex. In this regime, the current density varies following equation (3):

$$J_{\text{SCLC}} = \frac{9}{8} \epsilon_0 \mu_0 \frac{V^2}{d^2} \quad (3)$$

Here ϵ_0 is the material permittivity (assumed to be $4\epsilon_0$, where ϵ_0 is the vacuum permittivity) and μ_0 is the effective carrier mobility equal to $q\mu$, which is the free charge fraction with $q = p/(p + p_0)$. Parameters p and p_0 represent the free and trapped charge carrier densities, respectively, d is the film thickness and V is the applied voltage.

According to the SCLC model (3), μ_0 for the film containing complex (I) was calculated with a value of $0.45 (10^{-3} \text{ cm}^2/\text{Vs})$. This result is comparable to the literature value of about $10^{-3} \text{ cm}^2/\text{Vs}$ for the 2,7-disubstituted benzene p -type species [33–35].

Plan of the talk

- 1 The centre Mersenne
- 2 Staff & governance
- 3 Services
- 4 Business model
- 5 A focus on 2 examples
- 6 On-going projects & perspectives**

Centre Mersenne: On-going projects

- **Full-text for all articles:** \LaTeX \rightarrow HTML online. Should be available by the end of 2023.
- **Semi-automatic translation of articles:** an online interface enabling scientists or professional translators to translate automatically and post-edit articles of the *Compte Rendus de l'Académie des sciences*. Available by mid-2023 for Chemistry, Biology, Earth sciences. See next slide.
- **Comments online:** platform enabling authenticated scientists to post comments on articles. Should be available by the end of 2023 for the *Comptes Rendus de l'Académie des sciences*.

Semi-automatic translation: focus on the project

Project sponsored by the French Ministry of Higher Education and Research and the French Ministry of Culture. Two-fold objective:

- Establishing a **bilingual scientific corpus** that could be utilized as a dataset to train an AI;
- Developing a **comprehensive computer-assisted translation software** set up on the publication website of the *Comptes Rendus de l'Académie des sciences*.

Features

- Principle: machine translation via DeepL possible, and systematically followed by human voluntary or professional post-editing of articles.
- Pivot format: HTML.
- Publication of the translation in PDF (via an intermediate \LaTeX format) and HTML with a CC-BY licence next to the original work.

Means: 1 professional translator and 1 IT developer during 12 months, 1 freelance translator, + Mersenne staff

Outcome after 12 months: 25 articles translated and the interface being tested on a test site.

Difficulty: math formulas are usually not handled by computer-assisted translation softwares.

Figure: Authentication, automatic translation then human post-editing

Start a new translation

Article DOI

10.5802/crmes.133

The DOI is visible in the metadata section of the article.

Target language

French

☒ I agree to make my translation public and that it may be reused by other users.

Start

☐ Translating the text...

1. Introduction

Mayotte Island is one of the four islands of the Comoros volcanic archipelago. It is located in the Indian Ocean in the Musandiq Channel between Madagascar and Africa. Mayotte Island shows marked volcanic geomorphology. Volcanism in Mayotte started about 18 to 15 Mya ago (Ludwig et al. 2020). The volcano continued erupting in Quaternary, with the last volcanic eruption occurring 7000 years ago (Zobele et al. 2021). The source of volcanic activity in Mayotte is still debated. Enwez and Ducous (1982) suggest that the origin of the archipelago is a hotspot, while Vignier et al. (1988) proposed that the volcanism corresponds to the reactivation of old and deep lithospheric fractures. Michon (2001) also rejects the idea of a hotspot and proposes that the Comoros archipelago volcanic activity can be explained by lithospheric deformation related to the southern extension of the East-African rift.

In general, the archipelago of Comoros is considered a moderately seismic region. However, since May 18, 2020, unusual seismicity has been observed in the east of Mayotte Island. From May 18, 2018 to July 31, 2019 about 2000 events with local magnitude M_{L} 3.5, were recorded (REVUSOMA-VPZ 2021). The largest earthquake occurred on May 15, 2019, with a magnitude of M_{L} = 5.5. After July 2019, the number of earthquakes decreased, showing less than a hundred earthquakes with magnitude M_{L} 3.5 per month (REVUSOMA-VPZ 2021). Sautel et al. (2021). Although the most significant earthquakes occurred at the beginning of the crisis, the seismic intensity active in 2021 with 141 M_{L} 2.5 Volcano-Tectonic (VT) earthquakes located in December 2021 (REVUSOMA-VPZ 2021). Geodetic data recorded in Mayotte show transient displacements of approximately 15–20 cm in the east and subsidence of 8 to 15 cm

1. Introduction

L'île de Mayotte est l'une des quatre îles de l'archipel volcanique des Comores. Il se situe dans l'océan Indien dans le canal du Musandiq entre Madagascar et l'Afrique. L'île de Mayotte présente une géomorphologie volcanique marquée. Le volcanisme à Mayotte a commencé il y a environ 18 à 15 ans (Ludwig et al. 2020). Ce volcanisme s'est poursuivi pendant le Quaternaire, avec la dernière éruption volcanique survenant il y a 7000 ans (Zobele et al. 2021). La source de l'activité volcanique à Mayotte est encore débattue. Enwez et Ducous (1982) suggèrent que l'origine de l'archipel est un point chaud, tandis que Vignier et al. (1988) proposent que le volcanisme correspond à la reactivation de fractures lithosphériques anciennes et profondes. Michon (2001) rejette également l'idée d'un hotspot et propose que l'activité volcanique de l'archipel des Comores puisse s'expliquer par une déformation lithosphérique liée à l'extension sud de la rift africain.

En général, l'archipel des Comores est considéré comme une région modérément sismique. Cependant, depuis le 18 mai 2020, une sismicité inhabituelle a été observée dans l'est de l'île de Mayotte. Du 18 mai 2018 au 31 juillet 2019, près de 2000 événements de magnitude M_{L} 3.5, ont été enregistrés (REVUSOMA-VPZ 2021). Le plus grand tremblement de terre s'est produit le 15 mai 2019, avec une magnitude de M_{L} = 5.5. Après juillet 2019, le nombre de séismes a diminué, montrant moins d'une centaine d'événements de magnitude M_{L} 3.5 par mois (REVUSOMA-VPZ 2021). Sautel et al. (2021). Bien que les séismes les plus importants se soient produits au début de la crise, la sismicité reste active en 2021 avec des tremblements de terre "Volcano-Tectoniques" (VT) de 141 M_{L} situés en décembre 2021 (REVUSOMA-VPZ 2021). Les données géodétiques enregistrées à Mayotte montrent des déplacements transients d'environ 15 à 20 cm vers l'est et une subsidence de 8 à 15 cm.

En résumé, l'archipel des Comores est généralement considéré comme une région modérément sismique. Cependant, depuis le 18 mai 2020, une sismicité inhabituelle a été observée dans l'est de l'île de Mayotte. Du 18 mai 2018 au 31 juillet 2019, près de 2000 événements de magnitude M_{L} 3.5, ont été enregistrés (REVUSOMA-VPZ 2021). Le plus grand tremblement de terre s'est produit le 15 mai 2019, avec une magnitude de M_{L} = 5.5. Après juillet 2019, le nombre de séismes a diminué, montrant moins d'une centaine d'événements de magnitude M_{L} 3.5 par mois (REVUSOMA-VPZ 2021). Sautel et al. (2021). Bien que les séismes les plus importants se soient produits au début de la crise, la sismicité reste active en 2021 avec des tremblements de terre "Volcano-Tectoniques" (VT) de 141 M_{L} situés en décembre 2021 (REVUSOMA-VPZ 2021). Les données géodétiques enregistrées à Mayotte montrent des déplacements transients d'environ 15 à 20 cm vers l'est et une subsidence de 8 à 15 cm.

Figure: Compilation, cover sheet and publication

Les traductions des Comptes Rendus Géoscience
Sciences de la Planète

Exploration du lien entre les grands séismes et le transport magnétique au début de la crise volcanico-sismique de Mayotte.

Traduction **FR** → **EN**

Avant-propos : cette traduction est mise à disposition du public dans un but d'accessibilité mais a été soumise à une validation scientifique avant publication. Préférez la version originale pour un travail de référence.

Exploration du lien entre les grands séismes et le transport magnétique au début de la crise volcanico-sismique de Mayotte.

Titre original: Exploring the link between large earthquakes and magma transport at the onset of the Mayotte volcano-seismic crisis

Catullus Monod-Vincent^{1,*,†} ; Zacharie Duprat^{1,*,†} ; Loïc Rinaut^{1,*,†}

Comptes Rendus. Géoscience, Tome 354 (2022) no. 52, pp. 137–152.

Article de recherche thématique : La crise sismo-volcanique de 2018–2021 de Mayotte dans l'archipel des Comores (Cristal du Musandiq)

Traduit par : Oliver Laube^{2,*,†}

Résumé

L'archipel des Comores est généralement considéré comme une région modérément sismique. Cependant,

Conclusion: Main challenges for the centre Mersenne

- Face the **increasing volume of publication** since 2018.
- **Adapt to new editorial practices** because new scientific disciplines involved \rightsquigarrow specific adaptations on OJS and on the platform.
- **Adapt our platform to new formats** (not all the journals in \LaTeX).
- Develop **efficient and ethical services** (semi-automatic translation, full-text...). Improve quality, and avoid relying on bibliometric indicators.
- Achieve the administrative and financial procedures and contracts taking into account the public administration constraints.
- Hire and form people, minimize the outsourcing for typesetting.
- **Convince the community that the centre Mersenne is a nice, reliable and long-term publishing solution to create or to flip journals in open access.**

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Thanks!



Why Mersenne?

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A quotation (Baillet, 1691)

“Mersenne s'estoit rendu comme le centre de tous les gens de lettres par le commerce continuel qu'il entretenoit avec tous, et tous avec luy. C'estoit a luy qu'ils envoyoient leurs doutes et leurs difficultez pour estre proposees par son moyen a ceux dont on attend les solutions ; et lorsqu'il les avoit reçues, il les leur renvoyoit faisant a peu pres dans le corps de toute la republique des Lettres la fonction que fait le coeur dans le corps humain a l'egard du sang. [...] Les Italiens le regardoient aussi bien que nous comme le grand negociant des Lettres, qui fournissoit les provisions aux autres, et qui scavoit exiger d'eux ce qu'ils estoient capables de produire.”

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“Mersenne was like the center of all scholars by the continual commerce he maintained with all, and all with him. It was to him that they sent their doubts and their difficulties to be proposed by his means to those whose solutions were awaited; and when he had received them, he sent them back to them, having almost in the body of the whole Republic of Letters the function which the heart makes in the human body with regard to blood. The Italians regarded him, as we do, as the great mediator of the Letters, who furnished provisions to others, and was able to demand of them what they were capable of producing.”

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A portrait



Source: gallica.bnf.fr / Bibliothèque nationale de France