

SCOAP³: Access Ouvert en Physique des Hautes Énergies

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Chair of the Governing Council of SCOAP³
Point Contact National pour SCOAP³ en France

Mathdoc: 30 Années au service de la communauté

15/10/2025

SCOAP³: un modèle pour accès ouverte

Sponsoring Consortium for Open Access Publishing in Particle Physics

Mission Statement:

A global consortium to convert Particle Physics articles in high-quality journals to Open Access, at no burden for authors, mostly re-using existing funds

discipline: physique des hautes énergies (HEP), physique des particules

date de début: 2014

nombre d'articles: 77.687 articles (Sept/2025) depuis 2014

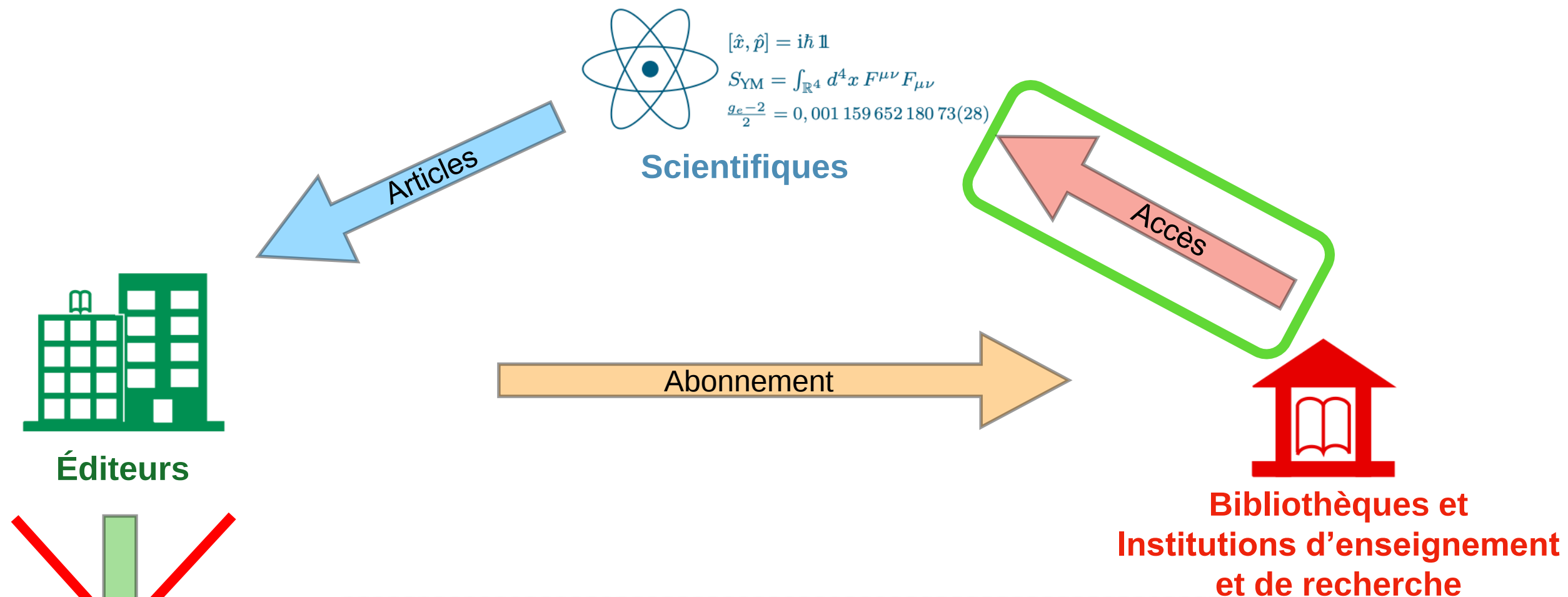
environ 7.500 articles/an (mondial)

environ 750 articles/an avec un auteur en France

Idée de base: Accès ouvert partout (read and write)

Sur la base de la réutilisation des fonds existants pour faire passer les revues en accès ouverte

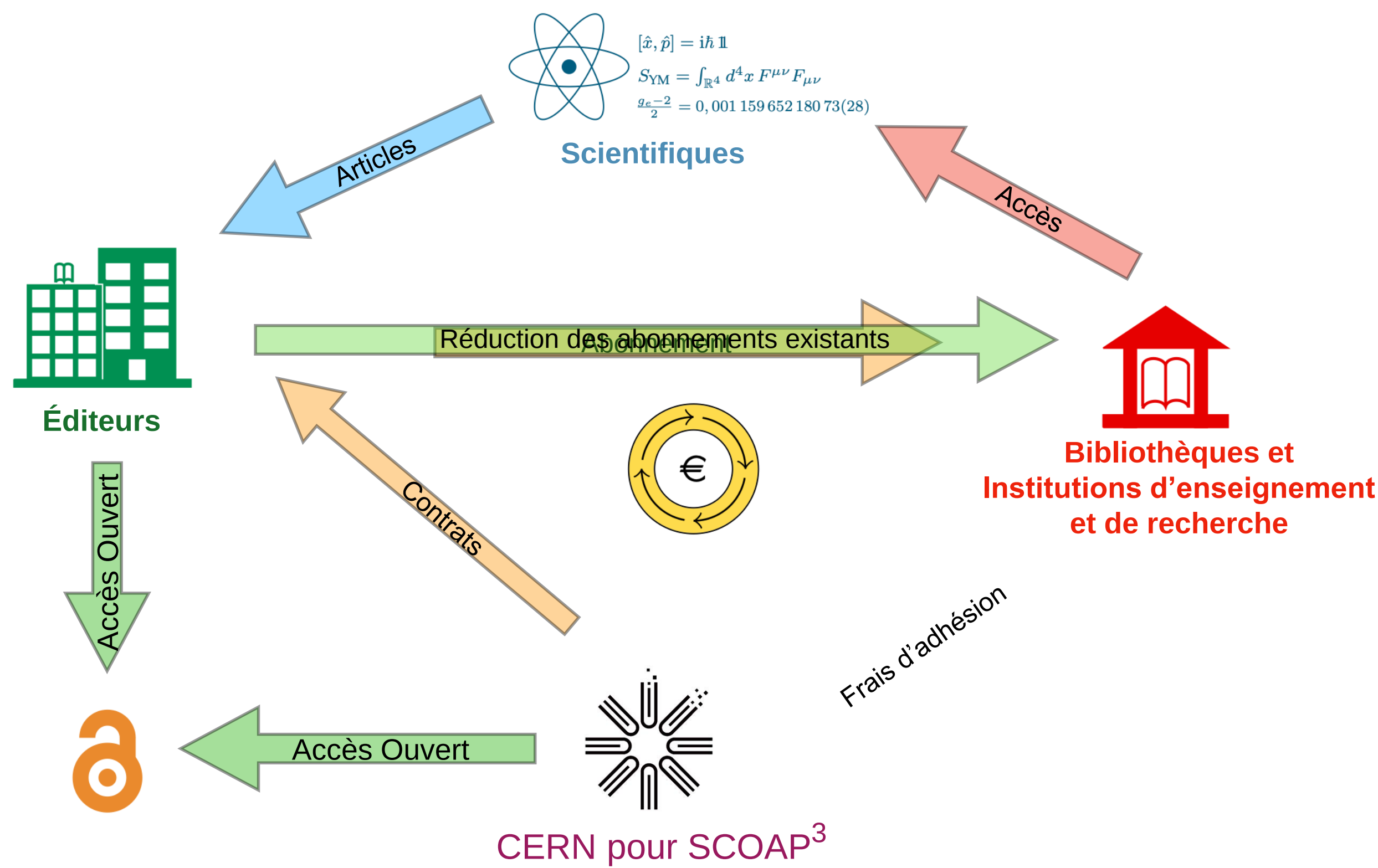
Modèle d'abonnement (typique avant 2014)



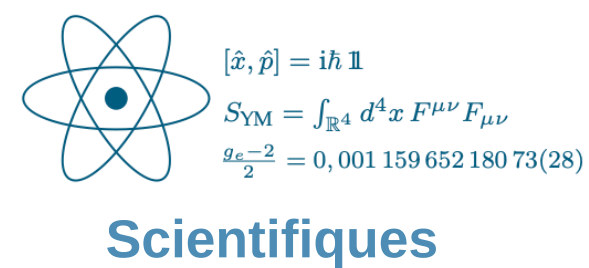
problèmes avec ce modèle:

- pas d'accès ouverte
payer pour lire; accès limité aux membres abonnés
- pas de possibilité de contrôler les coûts
contrats individuels/nationaux entre éditeurs et bibliothèques/institutions
conditions favorables pour les éditeurs
- cession des droits d'auteur (en général)

SCOAP³: Réorientation des Ressources



Domaine: physique des hautes énergies
physique des particules
(théorique + expérimental)



20.000 auteurs dans 100 pays, aujourd'hui ~7.500 articles/an
90% de la littérature dans la discipline/an

articles éligibles sont identifiés via la base de preprints **ArXiv**
(open-access dépôt de preprints électroniques; lancé en 1991)

c.à.d. soumis à l'une des quatre catégories hep :

- hep/th (theory)
- hep/ph (phenomenology)
- hep/exp (experiment)
- hep/lat (lattice)



choix fait par les auteurs eux-mêmes

en France: auteurs dans 80 institutions, 750 articles/an

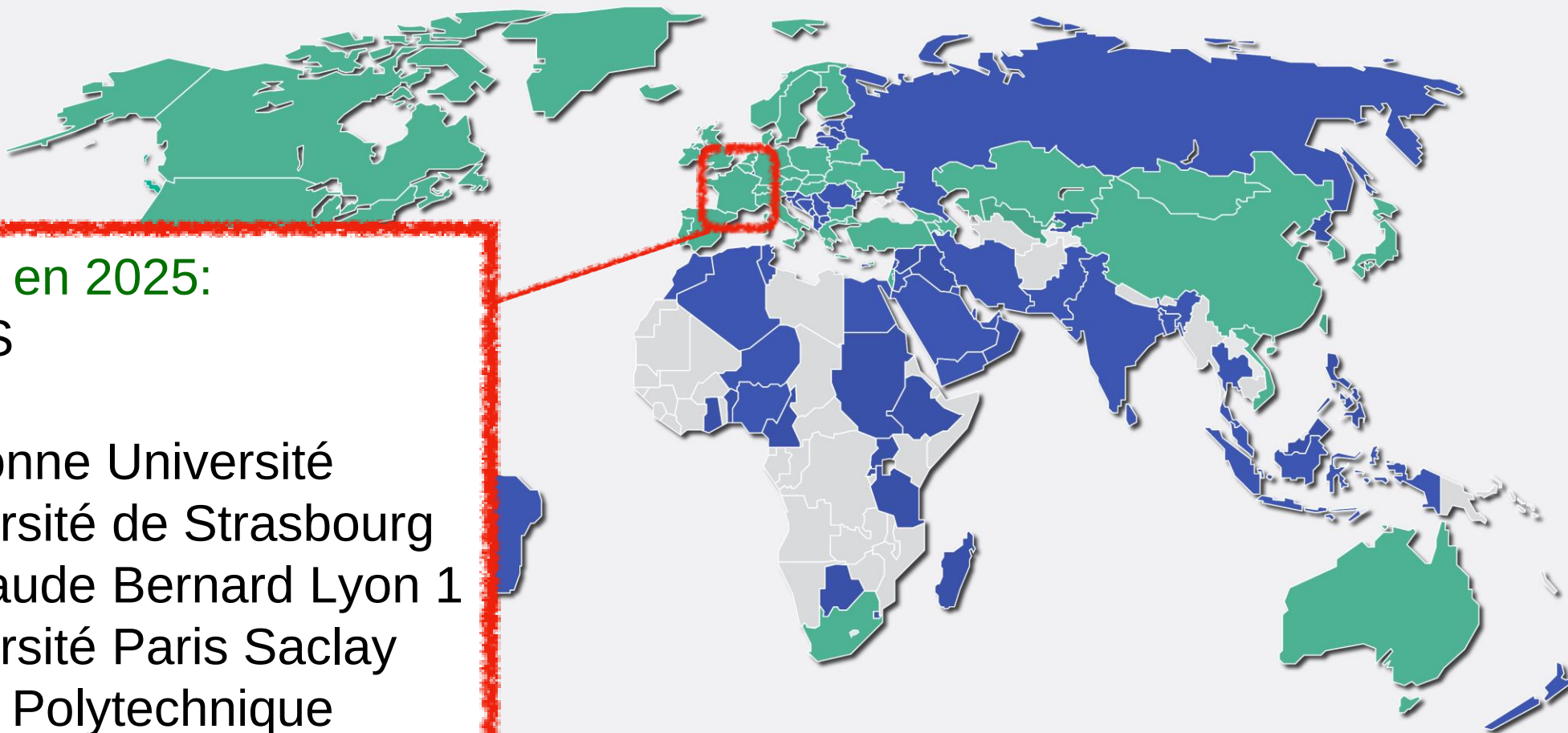
SCOAP³: Implementation

SCOAP³ est un consortium mondial:

GLOBAL PARTNERS

Partners in the SCOAP³
Collaboration

Countries/regions/territories
with at least one SCOAP³ author



France en 2025:

- CNRS
- CEA
- Sorbonne Université
- Université de Strasbourg
- U. Claude Bernard Lyon 1
- Université Paris Saclay
- École Polytechnique
- Université Grenoble Alpes
- Université d'Orléans

source: SCOAP3, 2022

3000 bibliothèques et Instituts de recherche (47 pays)

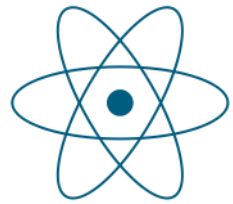
SCOAP³: Revues (depuis 2014)



Editeur	Revue	% HEP	Articles publiés (30/09/2025)
APS (American Physical Society) (since 2018)	Physical Review C	9%	692
	Physical Review D	56%	17.590
	Physical Review Letters	13%	2.279
Elsevier	Nuclear Physics B	100%	3.778
	Physics Letters B	100%	9.689
Hindawi	Advances in High Energy Physics	68%	1.135
IOPp/DPG	New Journal of Physics (until 2016)	2.7%	25
IOPp/SISSA	Journal of Cosmology and Astroparticle Physics (until 2016)	31%	654
IOPp/CAS	Chinese Physics C	44%	941
Jagiellonian U.	Acta Physics Polonica B	36%	193
Oxford U. Press	Progress in Theoretical and Experimental Physics	51%	1.016
Springer/SIF	European Physical Journal C	100%	11.917
Springer/SISSA	Journal of High Energy Physics	100%	27.778

Total: 77.687

SCOAP³: Avantages

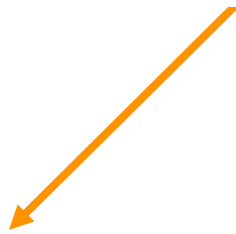


$$[\hat{x}, \hat{p}] = i\hbar \mathbb{1}$$

$$S_{\text{YM}} = \int_{\mathbb{R}^4} d^4x F^{\mu\nu} F_{\mu\nu}$$

$$\frac{g_{e-2}}{2} = 0,001\,159\,652\,180\,73(28)$$

Scientifiques



Auteurs

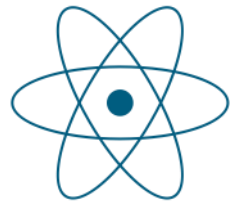
libre de publier
dans la revue de
qualité de son
choix dans la
discipline

non cession des
droits d'auteur

visibilité élargie

- la publication dans des revues est un élément clé de l'**évaluation** des chercheurs
(*en train d'évoluer*)
- chercheurs peuvent se concentrer sur la recherche
- **plus d'équité**: le choix de la revue n'est pas dicté par les frais de publication et tout le monde peut y publier modulo le peer-review
- des procédures de soumission simplifiées

SCOAP³: Avantages



$$[\hat{x}, \hat{p}] = i\hbar \mathbb{1}$$

$$S_{\text{YM}} = \int_{\mathbb{R}^4} d^4x F^{\mu\nu} F_{\mu\nu}$$

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Scientifiques

Auteurs

libre de publier
dans la revue de
son choix de qualité
dans la discipline

non cession des
droits d'auteur

visibilité élargie

Lecteurs

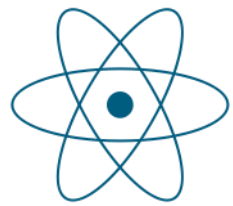
**accès immédiat et
ouvert** à la littérature
évaluée par les pairs

**simple exploration
de données** (text and
data mining)

amélioration de la
qualité des
publications/services
pour les lecteurs

- pas de **paywalls** (freins à la lecture)
- pas d'**embargo** (freins à la publication)
- aucun login institutionnel n'est requis
- **qualité des publications** fait partie des contrats avec les éditeurs (notamment en phase 4)

SCOAP³: Avantages



$$[\hat{x}, \hat{p}] = i\hbar \mathbb{1}$$

$$S_{\text{YM}} = \int_{\mathbb{R}^4} d^4x F^{\mu\nu} F_{\mu\nu}$$

$$\frac{g_e - 2}{2} = 0,001\,159\,652\,180\,73(28)$$

Scientifiques



Auteurs

libre de publier
dans des revues de
haute qualité dans la
discipline

non cession des
droits d'auteur

visibilité élargie

Lecteurs

**accès immédiat et
ouverte** à la littérature
évaluée par les pairs
par les voies établis

**simple exploration
de données** (text and
data mining)



**Bibliothèques et
Institutions d'enseignement
et de recherche**

**soutenir science
ouverte** en fonction de
leurs taux de
publication ('fair share')

simple moissonnage
(‘harvesting’) d'articles
dans des **dépôts
institutionnels**

Stable (faibles) coûts
(autour 1.200
Euro/article)

négociation centrale
et contrôle de la
conformité des articles



Éditeurs

**critères de
conformité** cohérents

stabilité des contrats

**faibles coûts de
gestion** (après la mise
en place initiale)

utilisation accrue des
articles

Pourquoi/comment cela fonctionne-t-il ?

Le modèle est basé sur un certain nombre de particularités :

- **CERN:**

- organisation internationale de recherche fournissant des infrastructures
- mise en commun des ressources financières et **couverture des déficits**

- **discipline de physique des hautes énergies:**

- discipline 'mature' avec un nombre stable d'articles/an (légère croissance $>1\%$)
- périmètre bien défini, avec un nombre restreint (et stable) de revues de haute qualité

- **arXiv (green open access):**

- (presque) toute la littérature est disponible sous forme de preprints

- **portée mondiale du consortium:**

- 3000 institutions et bibliothèques travaillant ensemble au niveau mondial pour un objectif commun
- d'un point de vue économique, il n'y a pas d'autres acheteurs sur le marché des publications scientifiques de la HEP

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Toward exotic 6D supergravities

Yannick Bertrand (IP2I, Lyon), Stefan Hohenegger (IP2I, Lyon), Olaf Hohm (Humboldt U., Berlin), Henning Samtleben (ENS, Lyon, Lab. Phys.)

Jul 22, 2020

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Report number: HU-EP-20/08

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Citations per year

Year	Citations
2020	3
2021	3
2022	4
2023	2
2024	1

arXiv

Article from SCOAP³

supergravity theories in 6D with maximal (4,0) and (3,1) supersymmetry, which were conjectured by Hull to exist and to describe strong coupling limits of N=8 theories in 5D. These theories involve exotic gauge fields with nonstandard Young tableaux representations, subject to (self-)duality constraints. We give novel actions in a 5+1 split of coordinates whose field equations reproduce those of the free bosonic (4,0) and (3,1) theory, respectively, including the (self-)duality relations. Evidence is presented for a master exceptional field theory formulation with an extended section constraint that, depending on the solution, produces the (4,0), (3,1) or the conventional (2,2) theory. We comment on the possible construction of a fully nonlinear master exceptional field theory.

Note: 30 pages

String theory

quantum gravity

gauge/gravity duality

approximation: strong coupling

supergravity: 8

exceptional

self-duality

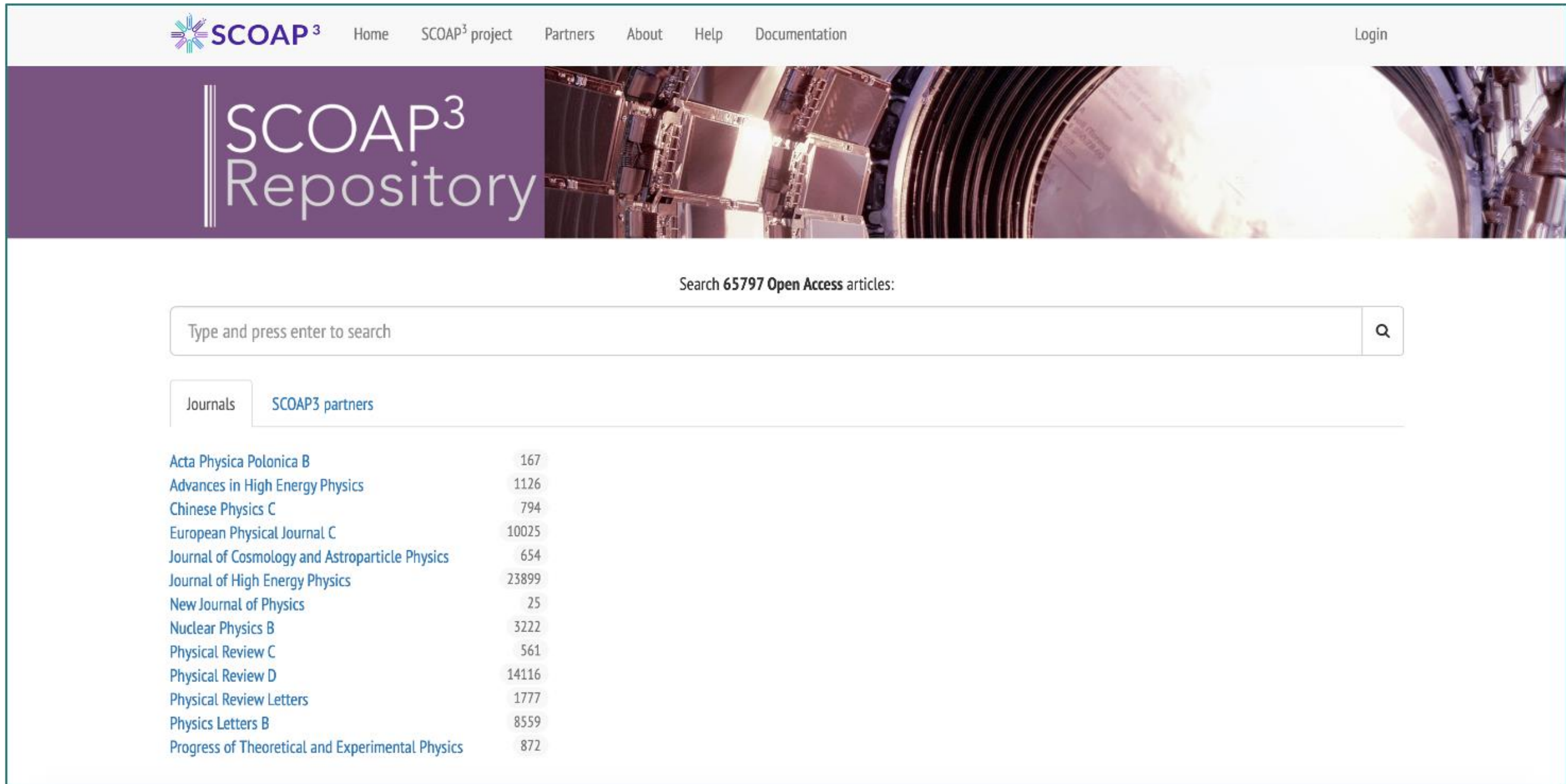
boson: field theory

supersymmetry: 4

group: representation

Show all (12)

Accès aussi via SCOAP³ repository:



SCOAP³ Repository

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Journals SCOAP3 partners

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Advances in High Energy Physics	1126
Chinese Physics C	794
European Physical Journal C	10025
Journal of Cosmology and Astroparticle Physics	654
Journal of High Energy Physics	23899
New Journal of Physics	25
Nuclear Physics B	3222
Physical Review C	561
Physical Review D	14116
Physical Review Letters	1777
Physics Letters B	8559
Progress of Theoretical and Experimental Physics	872

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exemple: HAL



HAL open science

Files and preview ▾

Fichier principal



hal-02911964.pdf (794.56

Ko)



PHYSICAL REVIEW D **103**, 046002 (2021)

Toward exotic 6D supergravities

Yannick Bertrand^{1,*}, Stefan Hohenegger^{1,2}, Olaf Hohm^{2,3} and Henning Samtleben^{3,5}

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We investigate exotic supergravity theories in 6D with maximal (4,0) and (3,1) supersymmetry, which were conjectured by Hull to exist and to describe strong coupling limits of $\mathcal{N} = 8$ theories in 5D. These theories involve exotic gauge fields with nonstandard Young tableaux representations, subject to (self-)duality constraints. We give novel actions in a $5 + 1$ split of coordinates whose field equations reproduce those of the free bosonic (4,0) and (3,1) theory, respectively, including the (self-)duality relations. Evidence is presented for a master exceptional field theory formulation with an extended section constraint that, depending on the solution, produces the (4,0), (3,1) or the conventional (2,2) theory. We comment on the possible construction of a fully nonlinear master exceptional field theory.

DOI: 10.1103/PhysRevD.103.046002

I. INTRODUCTION

Among the surprising features of string/M-theory is the possible existence of exotic superconformal field and gravity theories in six dimensions, which display generalizations of electric-magnetic duality. Specifically, the supermultiplets of these theories are such that the corresponding fields must be subject to (self-)duality constraints, some of which involve exotic Young tableaux representations. In this paper our focus will be on a conjecture by Hull [1,2] according to which there are strong coupling limits of $\mathcal{N} = 8$ theories in five dimensions that are given by

(5D) theories with maximal supersymmetry (32 real supercharges) were classified by Strathdee [6] and further clarified by Hull in [7]. The 5D superalgebra reads

$$\{Q_\alpha^a, Q_\beta^b\} = \Omega^{ab}(\Gamma^\mu C)_{\alpha\beta} P_\mu + C_{ab}(Z^{\mu\nu} + \Omega^{\mu\nu} K), \quad (1.1)$$

where $\alpha, \beta, \dots = 1, \dots, 4$ are the space-time spinor indices and $a, b, \dots = 1, \dots, 8$ are $\text{USp}(8)$ R -symmetry indices. This superalgebra features 27 central charges Z^{ab} , satisfying $Z^{ab} = -Z^{ba}$, $\Omega^{ab} Z_{ab} = 0$, and a singlet central charge K . The short (or BPS after Bogomol'nyi-Prasad-Sommerfield) multiplets of this superalgebra describe the

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Service Elements phase 4

1) Integration et Adaption d'ORCiD

This element seeks to promote the use of persistent identifiers (PIDs) for identifying researchers. ORCiD is deemed as the gold standard of author-related PIDs. In order to successfully enable the promotion of author-PIDs, **journals need to systematically collect and maintain ORCiDs for all co-authors at all stages of the manuscript production process**, and secondly, authors need to submit ORCiDs for all co-authors consistently. The second requires journal editors and publishers to actively promote the use of ORCiDs and make it mandatory or create other incentives for authors to follow.

2) Integration et Adaption de ROR

This element aims to promote the use of PIDs for identifying institutions in the author affiliations. SCOAP3 deems ROR, due to its open-source nature, as the optimal PID for identifying scientific institutions. **Journals are expected to use ROR in the article metadata consistently for all institutional affiliations of all authors**. For publishers using their own proprietary institutional identifiers, a mapping towards ROR is encouraged by this element. Publishers are encouraged to actively register new RORs for institutions that are not yet covered.

3) Public/Open peer review

In recent years, experimental efforts have been made to make the peer-review process more transparent, either through a public peer-review process where the discussion between authors and referees happens in public or through making peer-review reports transparently available and citable (by assigning DOIs) and therefore available as an integral part of the overall scientific discourse. **This element encourages journals to continue experimenting with new transparent peer-review models** in order to facilitate a transition towards such models.

4) Liens aux données et software

This element aims to promote publicly accessible links to datasets and software that are relevant to the scientific publication, such as data tables to reproduce plots, raw data and associated analysis software, etc. **Journals should actively promote making such additional research results publicly available and adequately referenced in the scientific publication, without requiring the use of proprietary services to store them**. This requires transparency around the applied practice through data and software policies, and secondly, authors need to make datasets and software available and link them through references in their scientific articles. The second requires journal editors and publishers to actively promote sharing datasets and software through direct discussions with authors during the editorial process.

5) Métadonnées sur CrossRef

Discoverability and interoperability of different open science tools, such as preprint- or data repositories, is a critical aspect of open science. To support this, rich and widely consistent metadata to scientific records is important. The central CrossRef service already serves this goal by collecting standardized metadata and allowing its use through APIs. **This OS element aims to increase the granularity of metadata that are deposited to CrossRef.** This will allow downstream services such as institutional repositories or the INSPIREhep aggregator to harvest such data centrally and enrich their own metadata for better interoperability and searchability of HEP articles. In turn, there will no longer be the requirement for a complete metadata delivery to the SCOAP³ Repository.

6) Excellence en matière d'accessibilité

This element aims to increase the accessibility of digital content, i.e. online versions of scientific articles, for researchers with disabilities. The most common accessibility standard is the **Web Content Accessibility Guidelines (WCAG)** issued by the World Wide Web Consortium (W3C), and the OS element is therefore assessed with reference to this standard.

7) Divulcation des valeurs 'SCOAP3'

The SCOAP³ community has defined a **list of values that it deems important qualitative elements in scholarly publishing** that it wishes to encourage transparency around through this element. Journals are not penalised for non-compliance with these specific values, but full transparency is encouraged and incentivised.

- **Diversity, Equity & Inclusion:** in aspects ranging from the profile of authors/first-time submitters; diversity in career stages; geographical diversity (in publishing and editorial practices); gender equity; etc.
- **Sustainability:** adopting practices to reduce their carbon emissions and address sustainability issues within their operations towards becoming net-zero businesses
- **Data privacy:** adopting practices to protect the privacy of users consistent with the European Union's General Data Protection Regulation (GDPR)
- **Financial Transparency:** engaging in emerging price transparency frameworks
- **Referee Recognition/Compensation:** demonstrating transparency in how the work of referees is acknowledged/recognized/compensated.

Budget: Fair-Share

Le budget annuel de SCOAP³ est réparti entre tous les pays participant au consortium.

La contribution de chaque pays ('country share') est calculée en fonction de son taux de publication

- Les country shares restent fixe pour une période de typiquement 3 ans ('phase')
- Le taux de publication est calculé par une analyse des données de publication au cours d'une période de référence de deux ans, deux ans avant le début de chaque phase.
- Le taux de publication est calculé par une analyse des données de publications au cours d'une période de référence de 2 ans, 2 ans avant le début de chaque phase.
- Chaque article est compté en fonction de la fraction d'auteurs affiliés à chaque pays