

Lettre Mode, Juin 2020

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## Site officiel et twitter SMAI-MODE

<http://smαι.emath.fr/spip.php?article330>

[https://twitter.com/smai\\_mode](https://twitter.com/smai_mode)

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1) 2 PhD positions for young researchers in the domain of optimization, Poland

De : Michel Thera

The Systems Research Institute of the Polish Academy of Sciences offers 2 PhD positions for young researchers in the domain of optimization, theory and solution method in image processing:

Full-time employment contract for a period of three years.

Gross salary around 2.450€/month if the researcher has no family or a bit more if the researcher is married or has dependent children. It includes medical care coverage and retirement benefits.

Due to Covid-19 pandemia, the deadline for submissions is June, 1st, 2020.

The positions are funded by the Marie Skłodowska-Curie European Grant: Training Data Driven Experts in Optimization. The Training program offers a deep training in Optimization and secondments in business partners institutions.

Submission of applications: send an e-mail including CV and the names of two references to Professor Ewa Bednarczuk: ewa.bednarczuk+ITN@ibspan.waw.pl

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2) Full professor position in Computer Science at the Scuola Normale Superiore di Pisa

De : Rida Laraki

Lien : <https://wwwold.sns.it/bando/professore-universitario-di-prima-fascia-ssd-inf01-n1-permanent-position-full-professor-academic-field-01b1-acad>

Full professor position in Computer Science at the Scuola Normale Superiore di Pisa

The Scuola Normale Superiore is issuing a call for applications for a Full Professorship in Computer Science, with an emphasis on the fundamental aspects of Machine Learning including mathematical foundations, computational aspects, and applications. The appointment will be made within the framework of the "Department of Excellence" initiative in the Faculty of Science, which puts a strong emphasis on interdisciplinary collaboration among the existing groups in mathematics, physics, chemistry and biology.

The ideal candidate is expected to have an outstanding research and teaching record, with a high profile at the international level, and to be able to fruitfully interact with the existing research groups at the Scuola Normale.

The Scuola Normale Superiore has a long tradition of excellence in the exact sciences. Its students are selected through an extremely rigorous, strictly merit-based admission process and are among the best anywhere in the world. Complementing its traditional strength in pure mathematics, the Scuola Normale Superiore has recently opened up new research directions in fields like Quantitative

Finance, Probability Theory, and Numerical Analysis. There is also significant activity in the development of computational methods for the Physical and Life Sciences. The successful candidate will also have the opportunity to interact closely with researchers at the nearby University of Pisa (which has a strong tradition in Computer Science and was the first university in Italy to pioneer Computer Science as an academic discipline) and at the Scuola di Studi Superiori Sant'Anna, as well as with various research groups working in the Consiglio Nazionale delle Ricerche.

The application deadline is June 19, 2020. For additional information and instructions on how to apply, see the following link, both in Italian and English:

<https://wwwold.sns.it/bando/professore-universitario-di-prima-fascia-ssd-inf01-n1-permanent-position-full-professor-academic-field-01b1-academic-discipline>

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### 3) Position Tenure-Track Assistant Professor in Computational Machine Learning

De : Michel Thera

Lien : <https://www.kuleuven.be/personeel/jobsite/jobs/55579156?hl=en&lang=en>

#### Position Tenure-Track Assistant Professor in Computational Machine Learning

The Faculty of Engineering Science at KU Leuven is seeking to fill the position of a tenure-track assistant professor in "Computational Machine Learning". The successful candidate will join the STADIUS Center for Dynamical Systems, Signal Processing, and Data Analytics in the Department of Electrical Engineering (ESAT).

ESAT-STADIUS pursues excellence in an explicit and synergistic combination of fundamental and applied research. With core concepts from linear and multi-linear algebra, statistics, optimization, machine learning, and artificial intelligence, its fundamental research is focused on the development of mathematical engineering tools and numerical algorithms. Building upon this foundation, applied research aims to advance the current state of technology across a wide range of relevant application fields, including industrial automation and control, speech and audio signal processing, digital communications, biomedical data analysis and signal processing, bioinformatics and systems biology.

The candidate will establish an impactful mathematical engineering research programme focusing on computational and theoretical aspects of machine learning, further strengthening and complementing the current fundamental research activities within ESAT-STADIUS. His/her research programme will also be relevant to the range of application fields currently covered by ESAT-STADIUS, with preference given to applications in big data and e-health, e.g., clinical diagnostics, decision support and personalized medicine. The candidate will provide high-quality teaching in the Bachelor and/or Master programmes of the Faculty of Engineering Science, including mathematical engineering courses.

KU Leuven seeks to foster an environment where all talents can flourish, regardless of gender, age, cultural background, nationality or impairments.

For detailed information, please visit: <https://www.kuleuven.be/personeel/jobsite/jobs/55579156?hl=en&lang=en>.

Application deadline: August 15, 2020.

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#### 4) Postdoc opportunity in optimal control of MHD flows

De : Florence Marcotte

Lien : <https://jobs.inria.fr/public/classic/fr/offres/2020-02719>

We are hiring an ANR funded postdoctoral research assistant at INRIA in Nice, France, to work on optimal control and nonlinear stability of MHD flows (more details below).

The postdoc will join the INRIA team-project CASTOR and will be hosted at Laboratoire J.A. Dieudonné, located in Parc Valrose (Université Nice Sophia-Antipolis). Funding is secured for two years (one-year position renewable once). Applications will be accepted until the position is filled, preferably before July, 10th.

Please share this with any recent PhD or postdoc who might be interested.

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Project description: The considerable diversity of long-lived magnetic fields observed in the Universe raises fundamental questions regarding their origin. Although it is now widely accepted that such fields are sustained by a dynamo instability in the electrically conducting fluid layers of celestial bodies, understanding the conditions of nonlinear excitation and saturation of a dynamo instability in a swirling MHD flow remains an important challenge for the modeling of astrophysical magnetic fields. The project aims at developing the numerical tools required to achieve fully nonlinear optimal control of MHD flows. These tools will be used to identify "minimal dynamo seeds" in simple swirling flows relevant to stellar systems, i.e. challenge the stability of such flows with respect to initial magnetic fields of arbitrary amplitude and structure. Furthermore, nonlinear optimisation will be used as a physical diagnostic to gain novel understanding of the mechanisms that are most favorable to dynamo action in astrophysical systems. Original ideas and suggestions from the postdoctoral researcher will be encouraged.

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#### 5) Postdoc Position, Optimization with PDEs, WIAS, Germany

De : Didier Aussel

Lien : <https://short.sg/j/6874006>

WIAS invites in the Research Group "Nonsmooth Variational Problems and Operator

Equations” (Head: Prof. Dr. M. Hintermüller) applications for a Research Assistant Position (f/m/d) (Ref. 20/11). to be filled at the earliest possible date.

Field of work: Optimization with partial differential equations. The holder of the position is qualified in a modern field of optimization with partial differential equations. Of particular interest are non-smooth coupled systems and data-driven (e.g. machine learning) approaches to modeling and optimization or variational problems in mathematical image processing. In addition to analytical considerations, the development and implementation of numerical solution methods are of central importance.

Wanted: A motivated, outstanding young researcher with a very good degree and excellent doctorate in mathematics as well as previous experience in the fields mentioned above with the willingness to take on responsibility for interdisciplinary projects. Further experience within the framework of independent research in a postdoctoral phase as well as very good knowledge in the areas of

- Optimal control with partial differential equations and numerical solution methods,
- Quasivariation inequalities,
- Non-smooth variation problems, e.g. with applications in image processing as well as experience in the computer-aided realization of the associated numerical solution methods.

This position is associated with the production of publications in international peer-reviewed journals, presentation of the results at international conferences and co-support of students working at WIAS in this field as bachelors, masters or doctoral students.

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## 6) Annonces de séminaires

Une rubrique pour signaler quelques liens pour les séminaires ayant lieu ce mois-ci et organisés dans nos laboratoires.

N'hésitez pas à l'alimenter, préférentiellement via un lien vers la page du séminaire. Pour cela, envoyez un mail à l'adresse [contact@lettremode.ovh](mailto:contact@lettremode.ovh).

- Séminaire Parisien d'Optimisation (IHP)  
<https://sites.google.com/site/spoihp/>
- Séminaire du programme PGMO  
<https://www.fondation-hadamard.fr/fr/pgmo-seminars/seminars>
- Groupe de Travail CalVa de Calcul de Variations (suivant les séances (lieu : voir site) :  
<https://www.ljll.math.upmc.fr/fr/seminaires/article/gdt-calcul-des-variations>
- Groupe de Travail Analyse Non-linéaire et EDP (ENS et UPMC)  
[http://www.math.ens.fr/-Seminaires-?id\\_seminaire=14](http://www.math.ens.fr/-Seminaires-?id_seminaire=14)
- Séminaire Pluridisciplinaire d'Optimisation de Toulouse (lieu : voir site)  
<http://projects.laas.fr/spot/>

- Séminaire SAMOCOD (séminaire Avignon Montpellier Optimisation Contrôle et Dynamique)  
[http://www.i3m.univ-montp2.fr/index.php?option=com\\_content&view=article&id=59&catid=19&sem=618](http://www.i3m.univ-montp2.fr/index.php?option=com_content&view=article&id=59&catid=19&sem=618)
- Séminaire hebdomadaire de l'équipe MOD de l'Université de Limoges  
<https://indico.math.cnrs.fr/categoryDisplay.py?categId=36>
- Séminaire Parisien de Théorie des Jeux (IHP, salle 05, 201 ou 314)  
<https://sites.google.com/site/theoriesdesjeux/>
- Séminaire de Mathématiques Discrètes, Optimisation et Décision, Centre d'Economie de la Sorbonne et Université Paris 1  
<http://ces.univ-paris1.fr/membre/seminaire/MDOD/>
- Séminaire de géométrie sous-riemannienne - IHP  
<http://webusers.imj-prg.fr/~davide.barilari/seminar.php>
- Séminaire de l'équipe Statistique, Probabilités, Optimisation et Contrôle (SPOC) - IMB  
<https://math.u-bourgogne.fr/spip.php?page=seminairespoc>

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## 7) Expert Sessions: Projection Methods in Feasibility, Superiorization and Optimization

De : Francisco Aragon

Expert Sessions: Projection Methods in Feasibility, Superiorization and Optimization – Theory and Practice

Due to the Corona pandemic we had to cancel our June 24-26, 2020 planned workshop on “Projection Methods in Feasibility, Superiorization and Optimization – Theory and Practice” organized by the division of Optimization of the Fraunhofer Institute for Industrial Mathematics (ITWM) in Kaiserslautern, Germany. In order to keep in touch with our friends and colleagues in the scientific community, we establish a weekly

Expert Session Webinar focusing on Projection Methods in Feasibility, Superiorization and Optimization - Theory and Practice.

For more details please visit our webpage:

<https://www.leistungszentrum-simulation-software.de/en/news-events/>

Fairs\_conferences\_and\_events/

2020/2020\_06\_Expert\_Sessions\_Projection\_Methods\_in\_Feasibility\_Superiorization\_and\_Optimization.html

We hope that this initiative will help to explore and discuss opportunities for joint

research projects. If you are interested please register at the above webpage to receive announcements and links of the talks.

Aviv Gibali, Dirk Lorenz, Francisco J. Aragón Artacho and Karl-Heinz Küfer  
(Organizers)

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#### 8) Variational Analysis and Optimisation Webinar

De : Michel Thera  
Lien : <http://www.mocao.org/va-webinar/>

Mathematics of Computation and Optimisation (MoCaO) group of the Australian Mathematical Society is pleased to announce a new project: Variational Analysis and Optimisation Webinar.

Many high quality online optimisation seminars have come to life recently. This is a positive by-product of the current unfortunate epidemiological situation. The series focusses on Variational Analysis, a key research interest for many Australian mathematicians. However, we are not going to erect walls and are happy to consider both variational analysis and theoretical optimisation broadly.

Since the organisers reside in Australia, our targeted time zones are different from those covered by the existing online optimisation seminars: afternoon in Australia, New Zealand and most of Asia, and morning in Europe. We apologise to our colleagues in North and South America.

Please visit the webinar's webpage: <http://www.mocao.org/va-webinar/> and join the mailing list. We are going to use Zoom. Participants login via a link that will be sent by e-mail. No Zoom license is required. Please keep your microphones muted except for the time you ask a question.

Organisers:  
Hoa Bui [bth.hoa92@gmail.com](mailto:bth.hoa92@gmail.com)  
Minh Dao  
Matthew Tam  
Alex Kruger  
Vera Roshchina

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#### 9) Disparition de Marc-Olivier Czarnecki

De : T rence Bayen

Le 26 mai, nous avons appris la disparition de notre coll gue de Montpellier, Marc-Olivier Czarnecki.

Depuis d but mars, Marco effectuait un s jour scientifique aux Etats-Unis. Le

vendredi 22 mai, Marco serait allé faire une sortie en kayak au nord de la péninsule de Cape Cod (Massachusetts). Le corps de la personne qui l'accompagnait a été retrouvé le lendemain sur une plage. Voici les dernières nouvelles dont nous disposons à ce sujet :

<https://provincetownindependent.org/news/2020/05/28/kayaking-excursion-ends-in-nurses-death/>

Un espace slack pour échanger autour de Marco a été créé par Jean-Michel Marin ([jean-michel.marin@umontpellier.fr](mailto:jean-michel.marin@umontpellier.fr)), directeur du laboratoire de Mathématiques de Montpellier. Tous les collègues qui le souhaitent peuvent envoyer un email à Jean-Michel pour s'inscrire.

Marco a fait partie du comité de liaison du groupe MODE entre 2005 et 2013.

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10) Humour en mathématiques... Blagues, bons mots et historiettes sur les mathématiques et ceux qui les pratiquent

De : Jean-Baptiste Hiriart-Urruty  
Lien : [https://www.amazon.fr/dp/2957186802/ref=cm\\_sw\\_em\\_r\\_mt\\_dp\\_U\\_SHI7EbJPDC0H0](https://www.amazon.fr/dp/2957186802/ref=cm_sw_em_r_mt_dp_U_SHI7EbJPDC0H0)

Titre : « Humour en mathématiques... Blagues, bons mots et historiettes sur les mathématiques et ceux qui les pratiquent »

[https://www.amazon.fr/dp/2957186802/ref=cm\\_sw\\_em\\_r\\_mt\\_dp\\_U\\_SHI7EbJPDC0H0](https://www.amazon.fr/dp/2957186802/ref=cm_sw_em_r_mt_dp_U_SHI7EbJPDC0H0)

Ouvrage de 130 pages, auto-édité, imprimé et diffusé à la demande par Amazon.

Format : 15,2 cm par 22,9 cm, épaisseur 0,8 cm.

Prix : 10 euros TTC.

Il peut être livré chez vous par Amazon au prix de 10,01 euros.

Les bénéfices engendrés par la vente de ce livret sont intégralement versés à l'Association Fermat Science (Beaumont-de-Lomagne, Tarn-et-Garonne), qui, depuis 1995, s'occupe de la promotion et de la diffusion de la culture mathématique.

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11) Prix de thèse AMIES, mathématiques en entreprise

De : Thierry Horsin  
Lien : <https://www.agence-maths-entreprises.fr/a/?q=fr/prix-de-these>

Les candidatures pour le prix de thèse AMIES, pour promouvoir les thèses de



mathématiques en entreprise, sont ouvertes jusqu'au 3 juillet 2020. Ce prix s'adresse à toute personne ayant soutenu une thèse de mathématiques en 2019, réalisée pour partie en collaboration avec une entreprise. Ce prix est parrainé par la SFdS, la SMAI et la SMF . Pour plus d'informations : <https://www.agence-maths-entreprises.fr/a/?q=fr/prix-de-these>.

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Fin de la lettre MODE  
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