



2015

**University
Odyssey**



“When I grow up, I will build the world...”



Patrick CURMI,
President of Université
d'Evry-Val-d'Essonne

Each of us has dreams, and their nature varies according to our experiences. The Université d'Evry, just outside Paris, uses its scientific and educational expertise with the support of major research organisations, engineering and management schools, together with local and regional authorities to support our young students in achieving their ambitions. By creating a network covering a wide range of disciplines, our graduates and lecturer-researchers are building tomorrow's world in the fields of genomics and synthetic biology, from innovative biotherapies to industrial engineering, of computer science, mathematics, sociology, art and of public and private law. So, behind the doors of our laboratories, passionate women and men are working tirelessly on the theoretical foundations of their disciplines. They are also turning advances in fundamental research into dedicated industrial applications at Evry, including personalised medicine to the benefit of patients notably when disease have yet no treatment, and this is realized in conjunction with Genopole, thus providing an additional service to society which puts its trust in us.

“Each of us
has dreams”

The Université d'Evry is also a springboard for exceptional students. Cyprien VERSEUX certainly did not imagine that Université d'Evry would be one of the first steps in his progression to space. He is a young graduate of our mSSB* Master's programme and was chosen by NASA to partake in a new experiment. Our young recruit, as well as five other scientists, were isolated in a dome on a Hawaiian volcano for 365 days to simulate the conditions which could be those of life on Mars. When he leaved on 28 August 2016, he was delighted to have participated in the longest mission of this type ever undertaken by NASA.

It is with this ambition to create and to pass on knowledge that we are committed to everyone surpassing their expectations and improving their life in their own way.

With our feet planted firmly in science and our gaze turned towards the future and its infinite possibilities, let yourself be guided through the adventure of Université d'Evry by following the ochre which connects the symbolic bricks of Evry to the dust on Mars.

* mSSB : Master in Systems & Synthetic Biology.

1 A campus rich in young talent



NASA recruits a UEVE graduate

Cyprien VERSEUX, an astrobiologist and graduate of the mSSB* Master's programme, is among the six scientists who was included in an isolation dome built on a Hawaiian volcano on 28 August 2015 to simulate a journey to Mars.

It is the longest experiment of this type ever performed by NASA. The scientists' behaviour under extreme conditions was studied for 365 days. Their developments and performances were analysed using sensors, psychological and cognitive tests, and video-surveillance. At the same time, each one of them continued with their own research in their field. For Cyprien VERSEUX, this was to develop usable life support on Mars for a future mission; a mission which this time would no longer be limited to the boundaries of the real world.

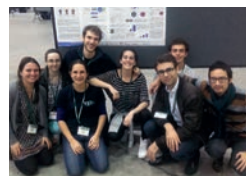
*Master in Systems & Synthetic Biology, designed and run by UEVE in 2013.

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Experience it by following Cyprien VERSEUX's blog : walking-on-red-dust.com

iGEM Evry silver medal in synthetic biology



Out of 250 universities and institutions throughout the world, the iGEM Evry team were awarded the silver medal at the iGEM Giant Jamboree grand finale, which was held at MIT (Massachusetts Institute

of Technology) in Boston from 24 to 28 September 2015. This prize was awarded to the project for using brewer's yeast which was genetically modified with sophisticated synthetic biology tools to modulate the immune response for therapeutic purposes, particularly in the treatment of cancer (immunotherapy).

Fakear, the fearless electro musician

2015 has been the year which established electro musician Fakear's reputation.

A year after signing a partnership agreement with *Universal Music Publishing Group*, he released a new EP ASAKUSA with *Nowadays Records* and started his national tour in autumn 2015 with a gig at the legendary Salle de l'Olympia in Paris.

Since his L3 degree in musicology at Université d'Evry, Fakear has been travelling to festivals and concert halls, involving his audience in the heady rhythms of an unusual electro with exotic sounds. His latest album, *Animal*, was released in June 2016.



© Nicolas LE GRUIEC

Festival du Bout du Monde, August 2015.



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PERSEUS reaches for the stars

The sky seems to have no limits for them!

After a decade of attempts which were repeatedly rewarded with prizes, the **Prix de la meilleure réalisation** (Prize for best project) and the **Prix du meilleur travail en équipe** (Prize for best team work) were awarded to students from the Octave association, a club for designing space technology in Evry, in January 2015, after presenting their research to the astronaut Claudie Haigneré at the 10th PERSEUS (Projet Étudiant de Recherche Spatiale Européen Universitaire et Scientifique) seminar for European University and Science Student Space Research Projects, held at the Palais de la Découverte in Paris. A project created at the initiative of the National Centre for Space Studies' (CNES) Launcher Directorate.



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Presentation of the Prix de l'Innovation (Prize for Innovation) by the astronaut Claudie Haigneré at the PERSEUS 2014 seminar.

The participants: Jennifer HORTA, Jacques SERNA-CHARPENTIER, Laurence VAPAILLE (lecturer responsible for selecting the participants), Alain DE SAINT GENOIS, Alicia LUGAT and Michel AMOUGOU (inset).

Our lawyers shine at the Constitutional Council

In this highly symbolic place, steeped in history, five Master 2 Law students won the final of the Georges VEDEL competition in the category of "Plaintiffs" on 23 April 2015. Awarded to the best argument about a priority preliminary ruling on the issue of constitutionality (QPC), the challenge they took up was a tall order: convincing the judges to change the law.



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Sustainable Design Prize for Disabled Access



Florian JARROT won the Prix du Design Durable 2015

(Sustainable Design Prize), organised by Coca-Cola France and the magazine Néoplanète on 23 June 2015, which rewards the design of an innovative object developed from recycled mass-market product packaging. This young Masters 2 Industrial Engineering Systems graduate submitted a project as innovative as it is indispensable: a portable ramp to facilitate the free movement of people in wheelchairs in public buildings, called OKI*.



“Design dedicated to everyone”

* OKI comes from Okinawa, the Japanese city where the nunchaku was created, which served as a model for the product.

Research in tune with our



Agility tests
(Robert BOBIN stadium, Bondoufle)

Football & Research: We're achieving our goals!

On 21 and 22 May 2015, Université d'Evry hosted the ninth edition of the international symposium Football & Research, co-organised with the Association des Chercheurs Francophones en Football (Association of French-speaking Football Researchers: ACFF).

This session placed great emphasis on an essential and often dramatic player, but sometimes unfairly considered as less interesting: the goalkeeper. Starting with agility tests conducted with several players from AJ Auxerre, the symposium continued with two half-days dedicated to papers of research studies and to comparisons with practices found across several continents (South America, Europe, and Africa) and team sports (handball). The mental preparation and training of professional goalkeepers have also been compared by specialists.

These interdisciplinary sessions have helped both sociological and physiological issues to be tackled in the presence of researchers and players, national trainers and coaches, who are the undisputed professionals of the goalkeeper's role; these permanent No.1s!

Combining sport and study: challenge met!

In this "Year of Sport from School to University" (ASEU), our high-level sporty students are the pride of all the Evry university community, with a fine record achieved during the last French and European university championships in 2015!



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8

- Emilie HERNANDEZ 1
- Bilal SHAHIN 2
- Laurine CHEVALLIER 3
- Naoufal HOUGGA (on the right) 4
- The Evry ASU futsal team 5
- Marlène ROBERT 6
- Doriane JANSEN 7
- Cécile DELWAIL (on the right) 8



Marie Curie *Changing Employment programme*

The Pierre Naville Centre (CPN), the Université d'Evry's sociology laboratory, has been selected by the European Commission and its Marie Curie ITN (Initial Training Network) programme to carry out a mapping programme on the changes in employment in Europe ("Changing Employment" programme). This project, which lasts over four years up to November 2016, is conducted in co-operation with numerous partners including eight European universities. The three main research topics focus on management and employees, integration and exclusion, and finally well-being and quality of life at work. Few social science programmes receive funding from the Marie-Curie Actions. This project on "The changing nature of employment in Europe in the context of challenges, threats, and opportunities for employees and employers," is one of them. Co-ordinated by the University of Strathclyde-Glasgow, it received € 4 060 000 in funding to boost this network of young researchers working on a doctoral and post-doctoral research programme supervised by high-level internationally-recognised universities.



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“ € 4 060 000 in funding to boost this network of young researchers ”

French Championship

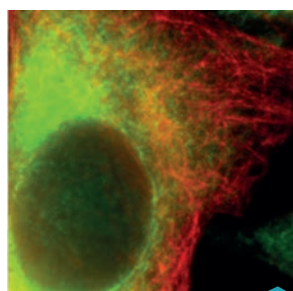
Boxing -69kg	Naoufal HOUGGA : French champion
RGS hoop and RGS ribbon	Laurine CHEVALLIER 3 rd place and 3 rd place
Judo -48kg	Marlène ROBERT : 3 rd place
Judo +78kg	Cécile DELWAIL : 2 nd place
Kayak single slalom	Émilie HERNANDEZ : 3 rd place
Swimming 100m butterfly	Bilal SHAHIN : 2 nd place
Swimming 100m freestyle	Doriane JANSEN : 3 rd place
Futsal (team)	Evry ASU men: runner-up

European Championship

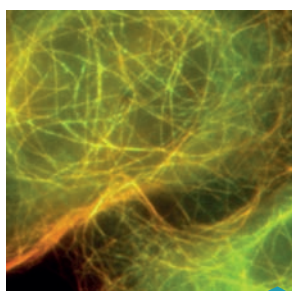
Futsal (team)	Evry ASU masculin: 6 th place
Judo -48kg	Marlène ROBERT: 3 rd place
Judo +78kg	Cécile DELWAIL : European Champion

During this season, no less than 40 students have brilliantly represented UEVE in ten individual sports (athletics, boxing, kayaking, cycling, golf, rhythm gymnastics, judo, swimming, synchronised swimming, and mountain biking) and a team sport (futsal), so the famous adage applies now more than ever: "Mens sana in corpore sano", a healthy mind in a healthy body.

Discoveries: sources of innovation



No interaction
© SABNP



Interactions
© SABNP

A promising method for studying protein interactions

A team of researchers from the Laboratoire Structure et Activités des Biomolécules Normales et Pathologiques (Structure and Activities of Normal and Pathological Biomolecules Laboratory: SABNP)* published in the journal *Scientific Reports* in November 2015 the results of an innovative method to observe and quantify interactions between proteins in real time, which are key phenomena in the function of living organisms, by using a natural structure in the cell: the microtubule network. This method, which is applicable to living eukaryote cells, suggests numerous applications. It will particularly enable the functional consequences of mutations involved in human diseases, such as cancer, to be explored and to screen new therapeutic molecules capable of correcting the effect of these mutations.

* UMR 1204 Inserm/Université d'Evry, supported by Genopole.

Valeria BANICA awarded the National Order of Merit



Valeria BANICA and Cédric VILLANI

A lecturer with authorisation to direct research (HDR) at the Université d'Evry and a member of the Laboratoire de Mathématiques et Modélisation d'Evry (Mathematics and Modelling Laboratory: LaMME), Valeria BANICA, was awarded the National Order of Merit on 2 October 2015. This prestigious award was

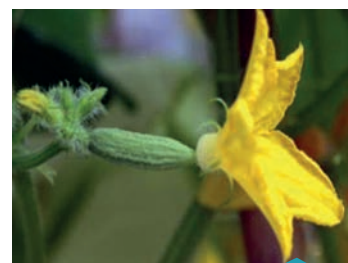
presented to her by the Fields Medal 2010 recipient, Cédric VILLANI, whose advice has marked her path since their meeting at the Ecole Normale Supérieure. This award is the culmination of years of research on SCHRÖDINGER type equations, particularly focused on the evolution of vortex filaments.

Already in 2014, Valeria BANICA stood out, along with her collaborator, Luis VEGA of the University of Basque Country and BCAM (Spain) for their studies on the "Stability of self-similar dynamics of vortex filaments."

Squashes to feed the planet

A consortium of researchers at the Institut des Plantes de Paris-Saclay (Paris-Saclay Plant Institute: IPS2), led by Dr Abdelhafid BENDAHMANE from Université d'Evry, has managed* to identify an important gene responsible for changing sex in cucurbits. A significant discovery which has made it possible to understand how male and female flowers co-exist on cucurbits, and paves the way for improving production of hybrid seeds, as well as yields.

This discovery was made following a long process that has been running for 10 years. The next step will focus on the secondary genes, capable of increasing the production of sex hormones in plants that are rarely studied, and the transfer of this discovery to other crop species of agricultural interest. These results were published in the magazine *Science* in November 2015.



Female cucumber flower

*In collaboration with a pharmacy laboratory at CNRS and Université René Descartes and Bar-Ilan University (Israel).

The Evry Genoscope and Tara Oceans are sailing for the planet

The Tara Océans¹ expedition started in 2009 with the departure of the schooner Tara for a round-the-world voyage. Scientific equipment was on board, and the researchers decided to explore the oceans' plankton by collecting samples and simultaneously measuring environmental parameters. The Genoscope² and its UMR³ are actively participating in this scientific adventure with the object of deciphering the DNA and RNA of plankton in more than 35 000 samples. The main distinctive feature of the project is in its scale: it is no longer a question of understanding a specific group of organisms, but of describing and understanding an ecosystem in its entirety. The first results were published in the prestigious scientific journal *Science* in May 2015.

Three articles describe the different-sized plankton communities (viruses, bacteria, and eukaryotes) bringing hundreds of thousands of totally unknown species to light and profoundly changing our image of microbial diversity. Two others are striving to understand the dynamics of these communities.

1 - The Tara Oceans expedition was followed in 2013 by Tara Oceans Polar Circle, a journey around the North Pole and from 2016 Tara Pacific, an exploration of coral reefs.

2 - The Genoscope is the Centre National de Séquençage (National Sequencing Centre). It is part of the CEA Institut de génomique (Genomics Institute: IG), with the Centre National du Génotypage (National Genotyping Centre).

3 - "Metabolic genomics" UMR at the CEA Institut de Génomique (Genomics Institute).

The Centre National du Génotypage (National Genotyping Centre: CNG) purchased a HiSeq X Five Illumina platform capable of producing 9 000 human "whole genomes" per year, thus giving France unique capacities for the development of precise genomic medicine.

Wiskott-Aldrich Syndrome: is there finally a cure?



The INSERM UMRS 951* unit, led by Anne GALY, has developed a treatment for Wiskott-Aldrich Syndrome which has been tested on seven patients in therapeutic trials conducted by Généthron. This very rare genetic disease (around two births per year in France) presents with repeated microbial infections, bleeding and outbreaks of eczema, sometimes cancer and auto-immune symptoms. Without treatment, the life expectancy of an affected person does not exceed 20 years. The genetic therapy procedure used consisted of collecting patient's blood stem cells to integrate the identified therapeutic gene into them in the laboratory, thus enabling the patient's cell function

to be restored. The trial has shown very encouraging clinical results, enabling the number of infections to be reduced, eczema to be eradicated, and bleeding problems to be improved, freeing patients from their need for platelet transfusions. The results of these studies were published in April 2015 in the prestigious American journal *JAMA (Journal of the American Medical Association)*.

*Affiliated to Université d'Evry, INSERM, Ecole Pratique des Hautes Etudes and to Généthron.

Fermentation of plant biomass: towards new biofuels and probiotics

The Génomique Métabolique* (Metabolic Genomics) laboratory has recently discovered new enzyme cocktails capable of breaking down plant biomass, a source of the most abundant bioenergy on earth, hence paving the way for the production of new biofuels and probiotics. Research has focused on the molecular biology of *Clostridia*, a group of bacteria that are found abundantly in the ground, as well as in our intestines. The team's objective is to understand how the *Clostridia* degrade and ferment the biomass, in order to translate this knowledge into applications for renewable energies and human nutrition.

*Under the supervision of Université d'Evry, CEA, CNRS and Genopole.

Joint projects selected for ANR funding

Each year, the Agence Nationale de la Recherche (National Research Agency: ANR) selects a series of projects with various topics.


In 2015, Université d'Evry was involved in four of them:

Project	UEVE Laboratory involved	Research topics
VIROLO ++	IBISC	Intelligent transport systems, motorcycle cornering, driver behaviour
OATA	IBISC	Online algorithms, mathematical programming
MEM	iSSB	Synthetic biology, flavonoids, automation
FIRE	EPEE	Macroeconomics, monetary and fiscal policy, share price, asset prices

This significant result of four selections indicates the undeniable scientific value of the research projects conducted by our University. These selections will entail total funding of the project management by the ANR (excluding the costs of permanent staff): equipment purchase, recruitment of doctoral or post-doctoral personnel, and job expenses.



See the full results at:
bit.ly/1jARK1D

 **Université d'Evry International**
Agreements on 05/01/2016



Université d'Evry ERASMUS
Agreements on 09/03/2016



Major publications 2015

GENOMICS-POST-GENOMICS / STEM CELLS / BIOTECH

Genomics-post-Genomics

A. CHATAGNON *et al.*, « RAR/RXR binding dynamics distinguish pluripotency from differentiation associated cis-regulatory elements », *Nucleic Acids Research*, 2015.

M. HEINONEN *et al.*, « Detecting time periods of differential gene expression using Gaussian processes: An application to endothelial cells exposed to radiotherapy dose fraction », *Bioinformatics*, 31(5):728–735, 2015.

E. MASSOURIDÈS *et al.*, « Dp412e: a novel human embryonic dystrophin isoform induced by BMP4 in early differentiated cells », *Skelet Muscle*, 2015

D. LAUSTRIAT *et al.*, « In Vitro and In Vivo Modulation of Alternative Splicing by the Biguanide Metformin » *Molecular Therapy - Nucleic Acids*, 2015

Z. KELEMEN *et al.*, « Analysis of the DNA-Binding Activities of the Arabidopsis R2R3-MYB Transcription Factor Family by One-Hybrid Experiments in Yeast », *PLoS One*, 2015

R. ZAAG *et al.*, « GEM2Net: from gene expression modelling to -omics networks, a new CATdb module to investigate Arabidopsis thaliana genes involved in stress response », *NAR*, 2015

A. RAU *et al.*, « Co-expression analysis of high-throughput transcriptome sequencing data with Poisson mixture models », *Bioinformatics*, 2015

A.E. MARTÍNEZ DE ALBA *et al.*, « In plants, decapping prevents RDR6-dependent production of small interfering RNAs from endogenous mRNAs », *Nucleic Acids Res.* 2015

A. LO CICERO, X. NISSAN. « Pluripotent stem cells to model Hutchinson-Gilford progeria syndrome (HGPS): Current trends and future perspectives for drug discovery », *Ageing Research Reviews*, 2015

D.A. KRETOV *et al.*, « mRNA and DNA selection via protein multimerization : YB-1 as a case study », *NAR*, 2025

E.E. ALEMASOVA *et al.*, « Poly(ADP-ribosyl)ation as a new posttranslational modification of YB-1 », *Biochimie*, 2015

J. COSETTE *et al.*, « Single Cell Dynamics Causes Pareto-Like Effect in Stimulated T Cell Populations », *Scientific Reports*, 2015

M.V. SUKHANOVA *et al.*, « Single molecule detection of PARP1 and PARP2 interaction with DNA strand breaks and their poly(ADP-ribosyl)ation using high-resolution AFM imaging », *NAR*, 2015

A. BOUALEM *et al.*, « A cucurbit androecy gene reveals how unisexual flowers develop and dioecy emerges », *Science*, novembre 2015.

S. SUNAGAWA *et al.*, « Ocean plankton. Structure and function of the global ocean microbiome », *Science*, 22 mai 2015.

E. VILLAR *et al.*, « Ocean plankton. Environmental characteristics of Agulhas rings affect interocean plankton transport », *Science*, 22 mai 2015.

J. R. BRUM *et al.*, « Ocean plankton. Patterns and ecological drivers of ocean viral communities », *Science*, 22 mai 2015.

C. DE VARGAS *et al.*, « Ocean plankton. Eukaryotic plankton diversity in the sunlit ocean », *Science*, 22 mai 2015.

G. LIMA-MENDEZ *et al.*, « Ocean plankton. Determinants of community structure in the global plankton interactome », *Science*, 22 mai 2015.

S. HACEIN-BEY ABINA *et al.*, « Outcomes Following Gene Therapy in Patients with Severe Wistott-Aldrich », *JAMA*, 21 avril 2015.

Stem cells

Y. MAURY *et al.*, « Combinatorial analysis of developmental cues efficiently converts human pluripotent stem cells into multiple neuronal subtypes », *Nature Biotechnology*, 2015

C. VALLOT *et al.*, « Erosion of X Chromosome Inactivation in Human Pluripotent Cells Initiates with XACT Coating and Depends on a Specific Heterochromatin Landscape », *Cell Stem Cell*, 2015

J. ALLOUCHE *et al.*, « In vitro modeling of hyperpigmentation associated to neurofibromatosis type 1 using melanocytes derived from human embryonic stem cells », *PNAS U S A*, 2015

D. PERIC *et al.*, « Cytostatic Effect of Repeated Exposure to Simvastatin: A Mechanism for Chronic Myotoxicity Revealed by the Use of Mesodermal Progenitors Derived from Human Pluripotent Stem Cells », *Stem Cells*, 2015

P. GEORGES *et al.*, « Protein Kinase-A Inhibition Is Sufficient to Support Human Neural Stem Cells SelfRenewal », *Stem Cells*, 2015

Biotechnology

B. RASOLONJATOVO *et al.*, « Poly(2-methyl-2-oxazoline)-b-poly(tetrahydrofuran)-b-poly(2-methyl-2-oxazoline) amphiphilic triblock copolymers: synthesis, physicochemical characterizations, and hydrosolubilizing properties », *Biomacromolecules*, 2015

A. CLEMENTE *et al.*, « Eliminating anti-nutritional plant food proteins: the case of seed protease inhibitors in pea », *PLoS One*, 2015

A. EL AMRANI *et al.*, « "Omics" Insights into PAH Degradation toward Improved Green Remediation Biotechnologies », *Environmental Science and Technology*, 2015

J. MUSSO *et al.*, « Biomarkers probed in saliva by surface plasmon resonance imaging coupled to matrix-assisted laser desorption/ionization mass spectrometry in array format », *Analytical and Bioanalytical Chemistry*, 2015

S. PATRA *et al.*, « Design of metal organic framework-enzyme based bioelectrodes as a novel and highly sensitive biosensing platform », *Journal of Materials Chemistry B*, 2015

H. MAMAD-HEMOUCH *et al.*, « Biomimetic Nanotubes Based on Cyclodextrins for Ion-Channel Applications », *Nano Letters*, 2015

M. BOCA *et al.*, « Probing protein interactions in living mammalian cells on a microtubule bench », *Scientific Reports*, 2015

H. EIDI *et al.*, « Fluorescent nanodiamonds as a relevant tag for the assessment of alum adjuvant particle biodisposition », *BMC Medicine*, 2015

G. CRÉPEAUX *et al.*, « Highly delayed systemic translocation of aluminum-based adjuvant in CD1 mice following intramuscular injections », *Journal of Inorganic Biochemistry*, 2015

SCIENCE AND TECHNOLOGY / MODELLING

Science and Technology

A. CHELLALI *et al.*, « Preliminary Evaluation of the Pattern Cutting and the Ligating Loop Virtual Laparoscopic Trainers », *Surgical Endoscopy*, 2015

D. ICHALAL AND S. MAMMAR. « On Unknown Input Observers for LPV Systems », *IEEE Transactions on Industrial Electronics*, 2015

M. LIU *et al.*, « A polynomial-time heuristic for the quay crane double-cycling problem with internal-reshuffling operations », *Transportation Research Part E: Logistics and Transportation Review*, 2015

Y. LYU *et al.*, « High-performance scheduling model for multisensor gateway of cloud sensor system-based smart-living », *Information Fusion*, 2015

R. MAALLAWI *et al.*, « A comprehensive survey on offload techniques and management in wireless access and core networks », *Communications Surveys and Tutorials, IEEE Communications Society*, 2015

C. NGUYEN VAN AND G. DAMM. « MIMO conditional integrator control for unmanned air launch », *International Journal of Robust and Nonlinear Control*, 2015

N.-T. TRAN *et al.*, « A robust framework for tracking simultaneously rigid and non-rigid face using synthesized data », *Pattern Recognition Letters*, 2015

Z. YACINE *et al.*, « Takagi-Sugeno Observers: Experimental Application for Vehicle Lateral Dynamics Estimation », *IEEE Transactions on Control Systems Technology*, 2015

P. KUMAR *et al.*, « CFD simulation of short-range plume dispersion from a point release in an urban like environment », *Atmospheric Environment*, 2015

Z. CHEN *et al.*, « Anisotropic hyperelastic behavior of soft biological tissues Computer Methods in Biomechanics and Biomedical Engineering », *Taylor & Francis*, 2015

S. KUMAR SINGH AND R. RANI. « Assimilation of concentration measurements for retrieving multiple point releases in atmosphere : A least-squares approach to inverse modelling », *Atmospheric environment*, 2015

N. BEKKA *et al.*, « Aeroelastic stability analysis of a flexible over-expanded rocket nozzle using numerical coupling by the method of transpiration », *Journal of Fluids and Structures*, 2015

Y. LIU *et al.*, « PCLab - A software with interactive graphical user interface for Monte Carlo and finite element analysis of microstructure-based layered composites », *Advances in Engineering Software*, 2015

M. BOUAFIA *et al.*, « Non-Boussinesq convection in a square cavity with surface thermal radiation », *International Journal of Thermal Sciences*, 2015

M. SELLAM *et al.*, « Assessment of gas thermodynamic characteristics on fluidic thrust vectoring performance: Analytical, experimental and numerical study », *International Journal of Heat and Fluid Flow*, 2015

Y. ROUIZI *et al.*, « Experimental assessment of the fluid bulk temperature profile in a mini channel through inversion of external surface temperature measurements », *International Journal of Heat and Mass Transfer*, 2015

Z. CHEN *et al.*, « Female patient-specific finite element modeling of pelvic organ prolapse (POP) », *Journal of Biomechanics*, 2015

S. KUMAR SINGH *et al.*, « Reconstruction of an atmospheric tracer source in Fusion Field Trials : Analyzing resolution features », *Journal of Geophysical Research : Atmospheres, American Geophysical Union*, 2015

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M. SELLAM AND A. CHPOUN. « Numerical simulation of reactive flows in overexpanded supersonic nozzle with film cooling », *International Journal of Aerospace Engineering*, 2015

S. HAMIMID *et al.*, « Numerical simulation of combined natural convection surface radiation for large temperature gradients », *Journal of Thermophysics and Heat Transfer, American Institute of Aeronautics and Astronautics*, 2015

Modelling

M.-P. GAIGÉOT AND R. SPEZIA, « Theoretical methods for vibrational spectroscopy and collision induced dissociation in the gas phase », *Topics in Current Chemistry*, 2015

M. SOROKINA *et al.*, « A new network representation of the metabolism to detect chemical transformation modules », *BMC Bioinformatics*, 2015

V. KLJASHTORNY *et al.*, « The Cold Shock Domain of YB-1 Segregates RNA from DNA by Non-Bonded Interactions », *PLoS One*, 2015

MATHEMATICS

V. BANICA AND L. VEGA, « The initial value problem for the binormal flow with rough data », *Annales scientifiques de l'Ecole Normale Supérieure*, 2015

S. CRÉPEY, « Bilateral counterparty risk under funding constraints. Part I: Pricing, followed by Part II : CVA », *Mathematical Finance*, 2015

C. DALMASSO *et al.*, « Patterns of chromosomal copy-number alterations in intrahepatic cholangiocarcinoma », *BMC Cancer*, 2015

Major books 2015

Brigitte GAUTHIER (sous la direction de), *Hybrid Arts*, L'Entretemps, décembre 2015, 196 pages.

Gaëtan FLOCCO, *Des dominants très dominés. Pourquoi les cadres acceptent leur servitude*, Editions Raisons d'Agir, décembre 2015, 144 pages.

David FONSECA, *Du néant sarkozyen au vide hollandien. Généalogie de l'art de gouverner sous la Vème République*, L'Harmattan, novembre 2015, 276 pages.

Réjane HAMUS-VALLÉE, Caroline RENOUDARD (sous la direction de), *Superviseur des effets visuels pour le cinéma*, Editions EYROLLES, « Collection Ciné métiers », octobre 2015, 160 pages.

Véronique BILLAT, *Entraînement pratique et scientifique de la course à pied*, Ed. De Boeck, « Collection Sciences et pratiques du sport », septembre 2015, 128 pages.

Inès TAILLANDIER-GUITTARD (sous la direction de), *Métaphore et musique*, Presses Universitaires de Rennes, « Collection Interférences », août 2015, 226 pages.

William A. BARNETT, Fredj JAWADI, *Monetary Policy in the Context of the Financial Crisis: New Challenges and Lessons*, Emerald Group Publishing Limited, juin 2015, 400 pages.

Réjane HAMUS-VALLÉE, Caroline RENOUDARD (sous la direction de), *Les métiers du cinéma à l'ère du numérique*, Editions Charles CORLET, mai 2015, 192 pages.

Marie-Pierre GAIGÉOT, Riccardo SPEZIA, « Theoretical Methods for Vibrational Spectroscopy and Collision Induced Dissociation in the Gas Phase », in *Gas-Phase IR Spectroscopy and Structure of Biological Molecules*, Springer, mars 2015, Pp.99-151.

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