



FIELD

Activity Report 2017

Section Popularization

Edition: 2018-02-19

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AGORA Team

10.3. Popularization

- Walid Bechkit participated in the "Rencontres Inria Industrie 2017" - <https://www.youtube.com/watch?v=qKzubSkpvSk>
- Walid Bechkit, Ahmed Boubrima and Hervé Rivano participated in the documentary "Métropole intelligente" projected as part of the 1st edition of "Thematix - Les rencontres de la Métropole Intelligente".
- Walid Bechkit, Ahmed Boubrima and Hervé Rivano participated in the "Forum des interconnectés" - <http://www.interconnectes.com/>
- Hervé Rivano was interviewed by the press about future of IoT 04/17 and the Sense City EquipEx 08/17
- Hervé Rivano was animating the Twitter account of « En direct du Labo » for a week, 06/17
- Hervé Rivano gave a talk on IoT for sensing the environment at the Entretiens Jacques Cartier, Montreal, 10/17.
- Hervé Rivano gave a talk on Smart Cities to a workshop of sustainable urban spaces, Ministère Enseignement Supérieure, Recherche et Innovation, 10/2017

AIRSEA Project-Team

10.3. Popularization

M. Nodet and J. Erhel won the first prize of the second Imaginary Mathematics for Planet Earth competition with their web module entitled "Simulating the melting of ice caps" [26].

E. Blayo gave several outreach talks, in particular for middle school and high school students, and for more general audiences.

Ch. Kazantsev and E. Blayo are strongly involved in the creation of "La Grange des maths", a science center that will be located in Varces (south of Grenoble), which will offer a huge variety of mathematical hands-on exhibits. See <http://www.la-grange-des-maths.fr/>.

Ch. Kazantsev leads two IREM groups. One of them works in frames of the center "La Grange des maths" and prepares "The Mathematical box", a set of 23 games and mathematical activities designed to allow children to study mathematics in an original and autonomous way. Since October, these box are available to rent by secondary schools. Another group organizes "The Sunday Math Club" that teaches mathematics in a researchers way by proposing interesting mathematical problems to children from 10 to 17 years old.

M. Nodet and E. Arnaud co-organises a year-round weekly math club in two secondary schools, part of the national network "Math en Jeans", where pupils research open mathematical problems.

M. Nodet takes part in training modelling in mathematics to secondary school maths teachers through the regional "Maison pour la Science"

M. Nodet is in charge of an IREM group about building interdisciplinary projects for secondary school classes. Part of their work has been accepted for publication in the IREM national journal [28].

M. Nodet is a member of "Les Emulateurs", a group of Grenoble University professors meeting once a month around the subjects of innovative pedagogy and its applications to universities.

M. Nodet co-autored, with other Univ. Grenoble Alpes teachers, a paper at the Pedagogy conference QPES [27] and offered a 3h practical work session during this conference about "Peer assessment in education".

ARIC Project-Team

10.3. Popularization

Nathalie Revol is a member of the steering committee of the MMI: Maison des Mathématiques et de l'Informatique, and in particular she was involved in the creation of the *Magimatique* 2 exhibition. She presented some magic tricks at Bibliothèque Municipale de la Part-Dieu and at MMI for 3 classes during the Science Fair. She gave talks for a large audience during "Forum Maths Vivantes" and for "La tournée de Pi" (mathematical musical, around 600 attendees) (March 2017). As an incentive for high-school pupils, and especially girls, to choose scientific careers, she gave talks at Lycée Ella Fitzgerald (Saint-Romain-en-Gal) and Mondial des Métiers (in February 2017) and during "Journée Filles et Sciences" in Musée des Confluences and "Journée Filles" by INSA Lyon (above 550 attendees in total, March 2017). She co-organized for two "Coding gouters" organized by MixTeen. She co-organized two days on "Info Sans Ordinateur" gathering researchers interested in unplugged activities. She is a member of the editorial committee of Interstices: <https://interstices.info>. She taught how to disseminate (computer) science for PhD students in a 20h module of *Insertion Professionnelle*.

Bruno Salvy will give a talk at the Collège de France in December 2017 on methods of analytic combinatorics in random generation.

Damien Stehlé hosted a visit at ENS de Lyon by the regional winners of the Alkindi competition (midde highschool and highschool).

AVALON Project-Team

9.3. Popularization

Laurent Lefèvre has been:

- Participating to the "Nuit européenne des chercheurs - European night of researchers" : talk in the dark "Let's talk about Green IT in the dark" - Interview by Lyon Capitale and Radio Brume, Villeurbanne, September 29, 2017
- Interviewed for the paper "Réseaux, data centers et terminaux, sur les traces de notre empreinte environnementale numérique", Inriality, Pierre Guyot, February 14,2017
- Interviewed for the paper "Surfing is bad for the planet / Surfer nuit gravement à la planète", 01 Net, Number 859, February 15, 2017

BEAGLE Project-Team

8.3. Popularization

The subspace clustering algorithms developed by the team in the context of the EvoEvo project have been included in a software package (EvoMove) enabling real-time monitoring and clustering of a dancer movements. In interaction with the “Desoblique” dance company (Lyon, France), we used this system to interact with the dancers by triggering sounds following the moves of the dancers. This system has been used in the context of the dance performance “Meute” in which three dancers were equipped with inertial measurement units connected to EvoMove (see [2](#)). Meute has been played in public 8 times in the Auvergne-Rhône-Alpes region between January and July 2017



Figure 2. The EvoMove system has been used in the public performance “Meute” (here in “La Rotonde”, INSA Lyon in February 2017). Dancers: Claire Lurin, Jean Boulvert, Maxence D’Hauthuille. Sound: Jonas Abernot. Lights: Laurent Turpin. The EvoMove inertial measurement units are tied to the wrists of the dancers.

G. Beslon, together with Dominique Schneider (UGA, France) published an article entitled “Darwin, bit à bit . . .” in the blog “Binaire” on le-monde.fr (<http://binaire.blog.lemonde.fr/2017/11/24/darwin-bit-a-bit/>). This article describes the interdisciplinary view of evolution that the two authors are developing.

A. Denizot is member of association Demesures (demesures.jimdo.com). She organized and participated to scientific events: Geek Touch 2017, Pop Sciences 2017, Fete de la Science 2017 and interviewed researchers (<https://www.youtube.com/watch?v=qoKAwRYI48Q>).

E. Tannier gave a series of lectures (8h) on genetically modified organisms for Université Populaire de Lyon, for a large audience and gave a talk for the "Tour de science" 2017, in Lyon, a popularization event, for a public of interdisciplinary students.

BIPOP Project-Team**10.3. Popularization**

Alejandro Blumentals and Florence Bertails-Descoubes have participated in the new showroom “login”, by setting up a fiber demo. The demo allows a user to manipulate a real fiber by moving and twisting the ends, creating self-coiling structures called plectonema. In parallel to real manipulations, a simulation reproduces in real-time the deformations of a rod undergoing the same constraints, which reveals similar patterns compared to the real experiment. The simulation relies upon the optimal control framework set up by Alejandro Blumentals in his PhD thesis, which allows to simulate the quasistatic deformation of a thin elastic rod in the presence of self-contact.

CHROMA Project-Team

10.3. Popularization

- Laetitia Matignon participated to the « Fête de la Science » with a Turtlebot demonstration workshop (October 12th and 13th, Lyon, 2017).
- Olivier Simonin was invited by Université Populaire de Montelimar to give a talk about Autonomous Vehicles, on December 19.
- January 30, 2017,F. Jumel, Digital Summit, Hotel de Region Auvergne Rhone Alpes, Robotic Show
- February 2017, F. Jumel, FSM 2017, BU Sciences : Robotic Show : Dance with Baxter
- March 7,2017, F. Jumel, J. Saraydaryan FSM 2017, BU Sciences, Robotic show, Baxter and Co. (with R. Leber)
- June 9, 2017, F. Jumel, AGERA, “service robots, review of the state”
- October 10, 2017, F. Jumel , Conference IESF Lyon-RA , Where Artificial Intelligence Is Now (with L. Chen)
- November 9, F. Jumel, 2017 Scientific event of Open University of Lyon : “Intelligent robotics, between myth and reality”
- November 14, 2017, F. Jumel, IA event, IPL, “Presentation of Challenges of robocup”, (with P. Dominey, R. Lucaleau)
- November 23, 2017, F. Jumel, “Exposition Hello robots”, IUT Lyon 1 , “Smart robotic and Robocup”

CONVECS Project-Team

9.3. Popularization

H. Garavel participates to the program committee and organization committee of FMF (*Formal Methods Forum*)⁰, a series of industrial conferences on formal methods set up by the competitiveness clusters Aerospace Valley and Minalogic, with the support of Inria and many other partners. The 7th FMF conference, devoted to formal methods and cybersecurity, was held on January 31, 2017. The 8th FMF conference, devoted to formal methods and autonomous vehicles, was held on October 10, 2017. Both events gathered a large audience.

L. Marsso, R. Mateescu, and Olivier Clozeau (Innovista Sensors) participated to the “*Forum 5i*” held on June 1st, 2017 at Grenoble (World Trade Center), where they held a stand dedicated to the results of the Bluesky project⁰.

R. Mateescu gave a lecture entitled “*Validation d'applications embarquées par des jumeaux numériques formels*” at the *Journée thématique Minalogic sur la modélisation des systèmes cyber-physiques* held in Grenoble on November 16, 2017.

⁰<http://projects.laas.fr/IFSE/FMF>

⁰<http://www.minalogic.com/en/project/bluesky>

CORSE Project-Team (section vide)

CTRL-A Project-Team (section vide)

DANTE Project-Team**10.3. Popularization**

Isabelle Guérin Lassous is the managing director of the Foundation Blaise Pascal. The objectives of the foundation are to promote mathematics and computer science and to attract young people to scientific fields like computer science and mathematics. The actions of the FBP focus on:

- a support to actors that promote mathematics and computer science via allocated funding based on call of proposals;
- a structuring of actors to increase the impacts of their actions, to coordinate the efforts and to share experiences;
- a development of innovative experiences via summer camps and clubs of mathematics and computer science.

DATAMOVE Project-Team**10.3. Popularization**

Responsible of the workshop *Proof without Words* and participation to the *CS-Unplugged* workshop, Inria, Fête de la Science 2017.

DATASPHERE Team (section vide)

DRACULA Project-Team**8.3. Popularization**

- Thomas Lepoutre is coorganizer of the scientific exhibition Mathalyon.
- Samuel Bernard: Conference “L’âge de nos cellules par tests nucléaires”, Université Ouverte Lycée Charles Foucault, Lyon, January 23, 2017.
- Olivier Gandrillon participated in the Declics 2017 activities (Lycée Jean Perrin and Lycée Juliette Récamier).
- Laurent Pujo-Menjouet: Conferences “Les langues en danger: les maths sur le bout de la langue”, Lycée Jean Puy, Roanne, March, 16, 2017; “Epidémies, quand les maths viennent en aide” , St Bonnet le château, April, 10, 2017; “Mathématiques et relations amoureuses: les jeux de l’amour sans le hasard, St Bonnet le château, April, 10, 2017; “Espèces en danger: quand les maths viennent à la rescousse”, Université ouverte, Lyon, January, 5, 2017; Animation of a stand on the “Salon des jeux mathématiques, Paris, May 27 to 30, 2017.

ERABLE Project-Team (section vide)

IBIS Project-Team (section vide)

IMAGINE Project-Team

9.3. Popularization

Starting in May 2017, our recent work on "3D animation by gesturing and drawing" has been featured in a live demo open to the general public in the new Espace Login at Inria in Montbonnot.

On November 8 and 9, that same demo was presented at Studio 104 in Paris during the celebration of Inria's 50th anniversary, to an audience of several hundred people.

Rémi Ronfard gave presentations on

- Directing virtual worlds, Ministère de la Culture, January 2017.
- Eyetracking and the arts, Institut d'Art Contemporain, Lyon, April 2017.
- Sketch-based character animation, CITIA, Annecy, May 2017.
- Computer science and theatre, ENSATT Lyon, December 2017.

Marie-Paule Cani was invited by France Inter's Dorothée Barba on December 25, 2016 to speak about the Imgine team and the future of cinema. A podcast of the the program (Demain la veille: cinema futurismo) can be obtained from <https://www.franceinter.fr/emissions/demain-la-veille/demain-la-veille-25-decembre-2016>.

MAVERICK Project-Team

9.3. Popularization

Every year, "MobiNet" (see section 4.5) classes are conducted with high school pupils of the large Grenoble area to practice initiation and intuition on Computer Science, Maths and Physics. Depending on the year, we have 2 to 4 groups in the scope of INP-Grenoble "Engineering weeks", and 0 to 2 groups in the scope of Math-C2+ operations.

Fabrice Neyret published a popularization article "Maths in special effects" in the magazine "Tangentes" #178 (sep-oct 2017).

Fabrice Neyret maintains the blog shadertoyunofficial (<https://shadertoyunofficial.wordpress.com/>) and various shaders examples on Shadertoy site (<https://www.shadertoy.com/>) to popularize GPU technologies as well as disseminates academic models within computer graphics, computer science, applied math and physics fields.

MISTIS Project-Team (section vide)

MOEX Project-Team

6.3. Popularization

- Jérôme Euzenat gave a talk to the local #FranceIA day “Intelligence artificielle et communication”, Grenoble (FR), 2017-03-02
- Manuel Atencia animated the workshop “Modéliser les ontologies: cas d’application d’une ontologie pour l’annotation de photos” at the 4th Journées du développement logiciel (JDEV), Marseille (FR), 2017-07-06
- Jérôme David animated the workshop “Comment faire une application avec des données liées: annotation de photos en utilisant les technos du web sémantique avec Jena” at the 4th Journées du développement logiciel (JDEV), Marseille (FR), 2017-07-06
- Jérôme Euzenat gave an interview “Dans 50 ans, les ordinateurs écriront des succès littéraires?” for the Inria web site, Montbonnot (FR), 2017-10-24

MORPHEO Project-Team (section vide)

NANO-D Project-Team

7.3. Popularization

- Sergei Grudinin co-advised the team of high-school student "Cantor se Gauss d'un Poincare'" in the team competitions "Tournoi Français Des Jeunes Mathe'maticiens" (TFJM).
- NANO-D was involved in several popularization activities, including a participation to Fete de la Science, and a participation to the GameLab project in Grenoble, where SAMSON modules were developed for high school students.
- Leonard Jaillet was involved in the development of a demonstration of SAMSON in the Inria showroom. Several scenarii were proposed where the user can interact with molecular systems and test different possible applications of the SAMSON software platform.

NECS Project-Team

9.3. Popularization

The GTL webpage (<http://gtl.inrialpes.fr/status>) is public in November: more generally the traffic activities have been popularized via the following public talk.

- G. Casadei, V. Bertrand, DEMO on the GTL at the “Rencontres Inria Industrie”, Inria, Paris, Oct. 2017

NUMED Project-Team (section vide)

PERCEPTION Project-Team (section vide)

PERVASIVE INTERACTION Project-Team (section vide)

POLARIS Team

10.3. Popularization

The POLARIS team is actively involved in various scientific popularization activities. In addition to participating in the Fête de la Science (Guillaume Huard, Florence Perronnin, Jean-Marc Vincent), the POLARIS team also participates in the organization of the “Conference Inria”. Jean-Marc Vincent has also organized (and/or participated in) several training courses for computer science teachers (at a high school level) and has supervised several MathC2+ trainees.

- Vincent Danjean and Florence Perronnin have participated to the “fête de la Science” on the *unplugged computer science* stand. Florence Perronnin was involved in the meeting days between industry and education, organized by the “Maison pour la Science”.
- E. Veronica Belmega: "Introduction à la theorie des jeux et ses applications en communications", invited talk, Lycée Chrestien de Troyes, France, Nov. 2017.

PRIVATICS Project-Team

9.3. Popularization

9.3.1. Hearings

- D. Le Métayer at the French National Assembly about the implementation of the General Data Protection Regulation (Jan. 2017).
- D. Le Métayer at the Conseil national du numérique (CNNum) about the regulation of algorithms (Jul. 2017).
- M. Cunche at le Comité Consultatif National d’Ethique (CCNE)⁰ (Mar. 2017).

9.3.2. Interviews

- M. Cunche by Valentine Faure in Glamour, Donner ses données, juin-juillet 2017.
- M. Cunche by Martin Untersinger in lemonde.fr, Apple donne à nouveau des gages en matière de vie privée, 27/09/2017, http://www.lemonde.fr/pixels/article/2017/09/27/apple-donne-a-nouveau-des-gages-en-matiere-de-vie-privee_5192469_4408996.html
- M. Cunche by Arnaud Devillard in Sciences et Avenir, Même coupé, le Wi-Fi sous Android peut suivre le téléphone, Oct. 2017, https://www.sciencesetavenir.fr/high-tech/meme-coupe-le-wi-fi-sous-android-peut-suivre-le-telephone_116061
- M. Cunche by Camille Gruhier in Que-choisir, Smartphones Android Même une fois le Wi-Fi désactivé, vous êtes pisté, Oct. 2017 <https://www.quechoisir.org/actualite-smartphones-android-meme-une-fois-le-wi-fi-desactive-vous-etes-piste-n46076/>
- M. Cunche by Emilie Brouze in Rue89 - L'Obs, Tu es resté 22 minutes chez l'opticien jeudi. Le centre commercial le sait, le 12 juillet 2017, <http://tempsreel.nouvelobs.com/rue89/rue89-nos-vies-connectees/20170711.OBS1939/vous-etes-reste-22-minutes-chez-l-opticien-jeudi-et-le-centre-commercial-le-sait.html>
- M. Cunche by ZDnet.fr, <http://www.zdnet.fr/actualites/android-desactiver-le-wi-fi-n-empeche-pas-d-etre-espionne-39856640.htm>
- M. Cunche by 01Net, <http://www.01net.com/actualites/sur-android-le-wi-fi-peut-vous-tracer-meme-s-il-est-desactive-1245292.html>
- M. Cunche by l'informaticien, <https://www.linformaticien.com/actualites/id/44894/desactiver-le-wifi-pour-eviter-le-flicage-une-protection-illusoire.aspx>
- M. Cunche by Nextinpact, <https://m.nextinpact.com/news/105038-suivi-clients-dans-magasins-question-wi-fi-nest-pas-seule-a-se-poser.htm>
- C. Lauradoux by Sophie Eremian in Inriality, Quand l'énergie devient intelligente, Oct. 2017, <https://www.inriality.fr/environnement/quand-lenergie-devient-intelligente/>.

9.3.3. Press articles

- D. Le Métayer in Slate, *Designing, explaining and controlling algorithms*, in Presidential election, 100 proposals from the research community (Mar. 2017).
- D. Le Métayer in Le Monde, *Gouverner les algorithmes pour éviter qu'ils nous gouvernent*, (Nov. 2017).
- C. Castelluccia and D. Le Métayer in Inria Analysis note, *Secure electronic documents: is the centralisation of biometric data really inevitable?*, (Feb. 2017).

9.3.4. Conferences

⁰<http://www.ccne-ethique.fr/fr>

M. Cunche and C. Matte, *le traçage cyberphysique via Wi-Fi*, Exposition Terra Data at Cité des Sciences et de l'Industrie, Apr. 2017.

M. Cunche and C. Matte, *le traçage cyberphysique via Wi-Fi*, Fête de la science at Cité des Sciences et de l'Industrie, Oct. 2017 (broadcasted by Science et Vie TV and animated by l'Esprit Sorcier).

C. Lauradoux, *Email et vie privée: pourquoi utiliser GPG ?*, Cours Master 2, Nov. 2017.

C. Lauradoux, *Mathématiques et la protection de la vie privée*, Olympiades académiques de Mathématiques, May 2017.

C. Lauradoux, *Cryptographie visuelle*, Collège/Lycée Jean Prévost, 01/06/2016.

C. Lauradoux, *Cryptanalyse*, stage MathC2+, 06/2017.

ROMA Project-Team (section vide)

SOCRATE Project-Team (section vide)

SPADES Project-Team (section vide)

STEEP Project-Team

9.3. Popularization

9.3.1. Conferences “*Understanding and Acting*” :

Saving Civilization is not a spectator sport
Lester Brown

Following a dynamics of exponential growth in a finite world, humanity today faces a number of unprecedented and tightly interlinked challenges. With a growing number of environmental limits being largely and irreversibly exceeded (GHG concentrations in the atmosphere, biodiversity loss, soil erosion, freshwater shortages...), social, economic, geopolitical, humanitarian (etc.) consequences are becoming more urgent than ever to address, while the threat of an uncontrolled global collapse is now more than a prospect. It is urgent to initiate deep, structural, socioeconomic changes on virtually all aspects of our increasingly global societies (economics, industrial and agricultural production, consumption, education, all requiring major new local and global policies).

In view of these facts, the STEEP research team has initiated in 2016 a series of conferences-debates entitled “*Understanding & Acting*” (“Comprendre et agir”) that examines these issues in order to help researchers and citizens to increase their awareness of the various issues at stake in order to initiate relevant individual and collective actions. From now on, the scientific community at large must realize that its duty also lies in helping citizens to better understand these issues. If the fraction of people in society whose privilege is to be paid to think about society’s problems do not seize this opportunity in the critical times we face, who will? Researchers must become more involved in the search of socioeconomic alternatives and help citizens to implement them. The interactions between researchers and citizens must also to be reinvented.

The presentations of this series of conferences typically last between 30 to 45 minutes; they are followed by a 45 minute public debate with the audience. The presentations are captured on video and then made directly accessible on the YouTube Channel “*Comprendre et Agir*”. At the end of 2017 the YouTube channel reached almost 45,000 views with a rate of integral viewings remaining at above 25%.

Examples of conferences given in 2016-2017:

- “Why and how to recognize money as a common good?” by Jean-Michel Servet, Graduate institute of international and development studies (IHEID) at Genève.
- “What alternative to the crisis of representation?” by Loic Blondiaux, University of Paris I Panthéon-Sorbonne.
- “Reinventing agriculture and food in the 21st century?” by Gilles Billen, CNRS.
- “Can the commons movement re-activate democracy? by Christian Laval, University of Paris Ouest Nanterre La Défense.
- “Limiting climate change: Why do we not do it?” by Denis Dupré, University of Grenoble Alpes.
- “Understanding society collapses. What future for ours?” by Emmanuel Prados, Inria.
- “Environment, economy, collapse: squaring the circle?” by Pierre-Yves Longaretti, CNRS.

Link to the web page of the series [program, abstracts, dates, complements etc.]:

<https://team.inria.fr/stEEP/les-conferences-debats-comprendre-et-agir/>

Link to the YouTube channel :

https://www.youtube.com/channel/UCJbcXCcOA63M8VMysAbmt_A

9.3.2. Other popularization activities :

- Emmanuel Prados gave a conference entitled “Understanding society collapses. What future for ours?” at the series of conferences “Understanding and Acting” (Grenoble, France, 9th of February, 2017). The video of the conference has been posted on the video-sharing website, YouTube. The conferences received around 30 000 YouTube views in 10 months.
<https://www.youtube.com/watch?v=1dgjIeR5DBY>
- Pierre-Yves Longaretti gave a conference entitled “Environment, economy, collapse: squaring the circle?” at the series of conferences “Understanding and Acting” (Grenoble, France, 3rd of March, 2017). The video of the conference available on YouTube. The conferences received around 1700 views in 9 months.
<https://www.youtube.com/watch?v=0T8SP5jb3aI>
- Emmanuel Prados participated in the round table “How to manage territories with the help of numerical models” held for the celebrated days for the 50th birthday of Inria (Paris, France, November 7th, 2017).
- Denis Dupré gave a conference entitled “Can ethical finance prevent from our civilization collapse ?” at the department of banking and finance of the University of Zurich (Zurich, Switzerland, the 29th of September 2017). The video of the conference available on YouTube. <https://www.youtube.com/watch?v=JhFiks0RbMU>
- Denis Dupré gave a conference entitled “How finance can help to manage vital goods in the coming collapse?” at the “Change Finance Forum” organized by Financewatch (Brussels, Belgium, 5th december 2017). The video of the conference available on YouTube. <https://www.youtube.com/watch?v=3RyJTn0a-ZA>
- Denis Dupré gave an interview at France Info, December 11, 2017. France Info is the radio network operated by the French public service radio broadcaster Radio France which provides continuous live news and information. Interview available online :
<https://team.inria.fr/stEEP/denis-dupre-dec-11-2017/>

THOTH Project-Team**10.3. Popularization**

- J. Mairal est intervenu lors du cycle de conférences ISN, à destination des professeurs de lycée.
- J. Mairal a co-publié un article dans ERCIM news, avec Gaël Varoquaux, Bertrand Thirion et Arthur Mensch.
- C. Schmid a co-publié un article “Extraction d’informations à partir des images”. Les Big Data à Découvert. Editions du CNRS, 2017

TYREX Project-Team (section vide)