

EJC2016



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ORIGIN OF NUCLEI IN THE UNIVERSE

25TH TO 30TH SEPTEMBER 2016

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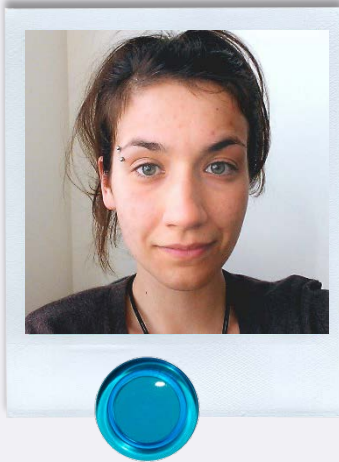
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Sofija ANTIC



I study the equation of state (EOS) of dense matter which is essential for modeling compact astrophysical objects and sets the conditions for creation of chemical elements in the universe. A variety of phenomenological models (eg. relativistic mean-field models) have been developed for this purpose whose adjustable parameters have to be determined by data. By taking into account new constraints coming from astrophysical observations and laboratory experiments we are able to provide a new and better set of parameters that can be further used in many studies, both for nuclear structure and astrophysical applications.

PhD student

GSI Helmholtz Center for Heavy Ion Research, Darmstadt, Germany



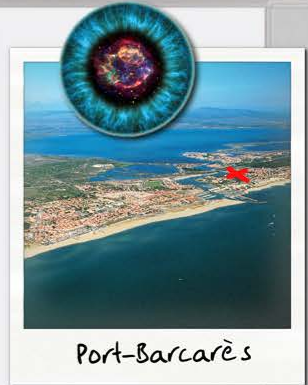
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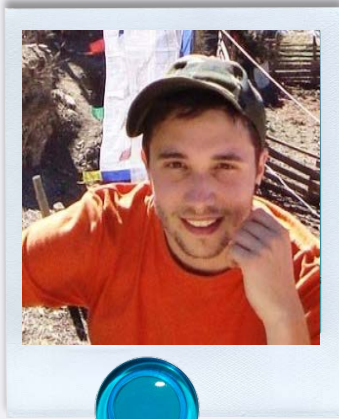


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Marco ANTONELLI



I'm a PhD student at Università degli Studi in Milan. The goal of my research project

is to improve the understanding of a phenomenon called "pulsar glitches", sudden spinups of a radio-pulsar.

This phenomenon is deeply related to the nuclear superfluidity at high densities but no detailed theoretical models exist to date: from the trigger mechanism of the glitch to the exact identification of the angular momentum reservoir there are still many obscure points that need to be investigated. Currently we are studying the relation between the amplitude of glitches and the mass (or the moment of inertia) of the underlying neutron star: the hope is to learn something about the nuclear equation of state by observing glitches.

*Università degli Studi di Milano and INFN
Italy*

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Nicolas BAILLOT D'ETIVAUX

First PhD on "constraining the equation of state for dense nuclear matter and X-rays observation of neutron stars"

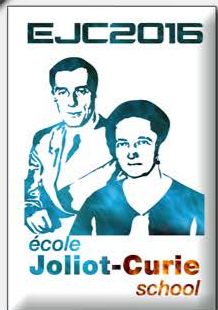
*PhD student
IPN Lyon, Villeurbanne, France*



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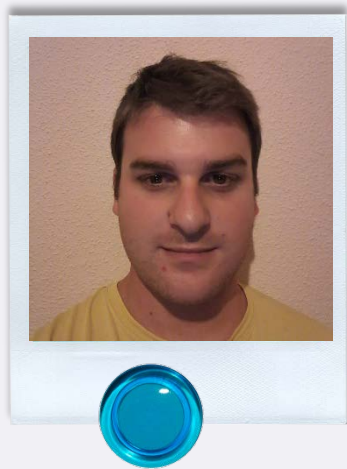


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Jaime BENITO GARCIA



I have been a PhD student in Madrid since October 2015. During the last year I have been working on the data analysis of the of neutron rich Mg isotopes near the N=20 "Island of inversion", produced in the ISOLDE facility at CERN, using gamma spectroscopy and the Fast Timing technique. The goal of my PhD will be the study of the doubly-magic nucleus ^{132}Sn and its 1 and 2 neutron particle or hole neighborhood isotopes using the same techniques.

PhD student
Universidad Complutense de Madrid, Madrid, Spain

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Florent BOULAY



I finished my PhD in experimental nuclear astrophysics at GANIL one year ago. It consisted on the measurement of ^{19}Ne spectroscopic properties in order to better constrain the gamma emission from ^{18}F during a nova explosion.

I am currently a post-doc at CEA-DAM in nuclear structure studies. We performed an experiment at RIKEN in order to measure the gyromagnetic factor of isomers in N=59 isotones. I am still keeping an eye on the astrophysical topics, this is the reason why I wanted to be present at this school.

Post-doc CEA DAM

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Jean-Baptiste BRIAND



I am PhD student at LPC Caen France in third year.
My doctoral advisor is Francesca Gulminelli.
My research topic is about the electron capture during the core collapse of massive stars and in proto neutron stars.

*PhD student
LPC Caen, France*

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Laetitia CANETE



Hei kaikiki! I started my PhD at the university of Jyväskylä (Finland) two years ago. I graduated from university Claude Bernard Lyon 1 in subatomic physics and astrophysics. I'm now working in a much more experimental area with the IGISOL group. My research focus on mass measurements of exotic nuclei for nuclear astrophysics using the double Penning-trap JYFLTRAP. When lab shifts are done, I enjoy playing saxophone, reading and practicing some very Finnish activities (picking up berries, walking in the forest, metal concerts, etc...)

*PhD student
University of Jyväskylä*

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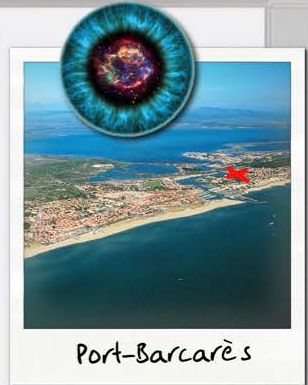
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Adrià CASANOVAS



I am a PhD student at the Institute of Energy Technologies (INTE), part of the Universitat Politècnica de Catalunya (UPC), and located in Barcelona. The main goal of my PhD is the determination of the neutron capture (n, g) cross-section of the radioactive thallium isotope $Tl-204$, which was measured, for the first time, during the summer of 2015 at the neutron time-of-flight facility n_TOF at CERN. This isotope is a branching point of the s -process of nucleosynthesis, and the knowledge of its neutron capture CS, apart from contributing to the better understanding of the s -process stellar conditions, could allow to make an estimation of the time elapsed since the last s -process events that contributed to the elemental composition of the Solar System.

*PhD student
UPC Barcelona, Spain*

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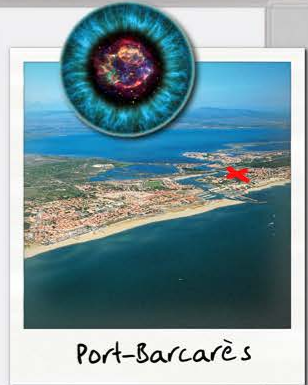
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Debarati CHATTERJEE



My expertise lies in formulating theories to describe cold and ultra-dense matter in neutron stars and to construct global models that can be compared with astrophysical observations. I use feedback from nuclear and particle physics to understand the physical processes that govern phenomena such as neutron star oscillations and emission of gravitational waves.

LPC Caen, ENSICAEN, France

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Arthur CHOPLIN



I started a PhD in september 2014 at the Geneva Observatory, in the stellar evolution group. My work deals with the nucleosynthesis in the first stellar generations. The first stars cannot be observed directly but it is believed that they have left some nucleosynthetic imprints on the second stellar generation in the Milky Way. The second stellar generation can be observed. I use it as an observational constraint to get some clues (mass, rotation...) on their progenitors, that are possibly the first stars. In addition to the first stars, I especially like volley ball, jazz and electronic music.

*PhD student
Observatoire de Genève*

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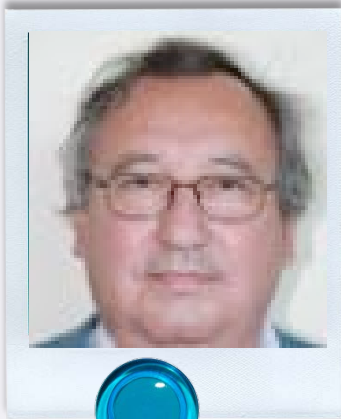
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Alain COC



Research fields: Study of nucleosynthesis in novae and big bang. Using stellar and, especially big bang nucleosynthesis, to constrain new physics (theories of gravity, variations of "constants", exotic particles,...). Measurements of nuclear reactions of astrophysical interest involving light nuclei related to primordial nucleosynthesis, nova nucleosynthesis and gamma ray emission. Evaluation of thermonuclear reaction rates for astrophysics.

*Directeur de recherche
CSNSM Orsay, France*

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Iulia COMPANIS



The modelization of nucleosynthesis and compact stellar objects requires accurate knowledge of exotic nuclei and nuclear matter under extreme conditions. Thanks to recent progress in production techniques of exotic nuclei using new facilities such as SPIRAL 2, experiments that were previously impossible can be achieved. The development of a physics generator to simulate the results of such experiments is mandatory.

Postdoc

Institut de Physique Nucléaire de Lyon, France



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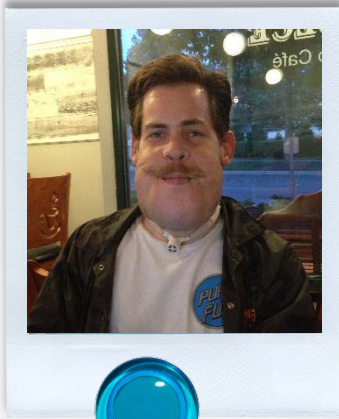


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Andrew COOPER



I am a PhD student at the University of North Carolina at Chapel Hill and the Laboratory for Experimental Nuclear Astrophysics (LENA), working under the guidance of professors Thomas B. Clegg and Arthur Champagne. In broad terms, my research concerns the development and application of high-current acceleration systems for the study of stellar nuclear processes. The accelerator instrumentation portion of my work has been focused on the design and construction of a new acceleration column for LENA's electron cyclotron resonance ion source. I will use the pulsed, high-intensity beams from this source to make precision measurements of reactions in the Ne-Na cycle at energies under 240 keV. In addition to my interests in accelerator design and nuclear astrophysics, I am also an avid amateur astronomer and skateboarder and I love traveling in pursuit of these wonderful activities.

*PhD student
University of North Carolina*

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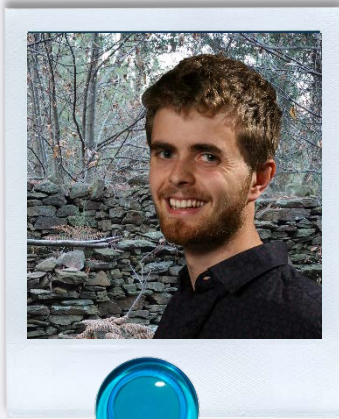
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Etienne DUPONT

For a few months, I've been studying at CSNSM some data from gamma spectroscopy to understand the alpha clusterisation in the nucleus of ^{212}Po . I will use the AGATA detector at GANIL and the TANDEM-ALTO facility in Orsay.

CSNSM Orsay, France



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Michael FOLEY



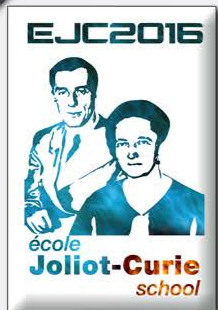
My research involves working to update the theory of Big Bang Nucleosynthesis in this era of precision cosmology. I have used new nuclear reaction rates, an updated neutron lifetime, and other revisions in a Monte Carlo analysis to constrain light element (specifically D, ^3He , ^4He , and ^7Li) abundances in BBN. However, there is a significant discrepancy between theoretical calculations of the lithium abundance and its determination through the observations of metal-poor stars; this is known as the lithium problem. I am interested in analyzing a primordial magnetic field as a possible theoretical solution to this problem.

*3rd-year Undergraduate Student
University of Notre Dame*



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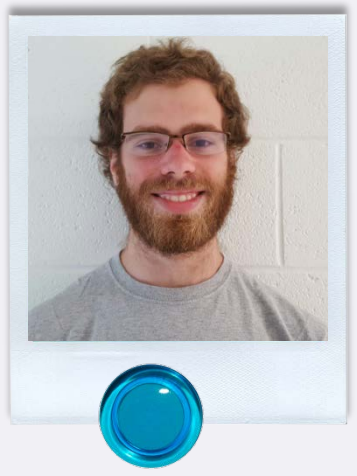


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Dustin FRISBIE



I am a Ph. D student at Michigan State University, entering his second year. I work Jaideep Singh in the Spinlab group at the National Superconducting Cyclotron Laboratory. Their research involves trying to optically detect single atoms in a frozen lattice of noble gas. This single atom microscope can be used as a highly sensitive detection tool for low cross section reactions. One reaction of note we are interested in is $^{22}\text{Ne}(\alpha, n)^{25}\text{Mg}$.

*PhD Student
Michigan State University*

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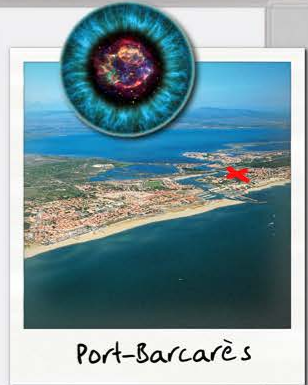
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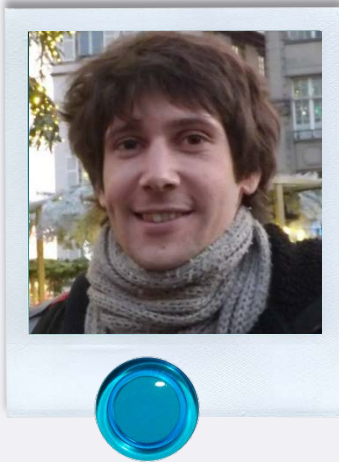
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Guillaume FRUET



I am currently a PhD student at IPHC-CNRS, Strasbourg. I am involved in the STELLA project (*STELLar Laboratory*), which aims to measure fusion cross sections at deep sub-barrier energies between light heavy ions like ^{12}C , ^{16}O or ^{20}Ne . For the moment, we focus on the $^{12}\text{C} + ^{12}\text{C}$ reaction, which plays a key role during C burning phase in several astrophysical scenarios. To measure fusion cross sections, we will use a particle-gamma coincidence technique, which allows sufficient background suppression and reliable selection of fusion events.

*PhD student
IPHC Strasbourg, France*

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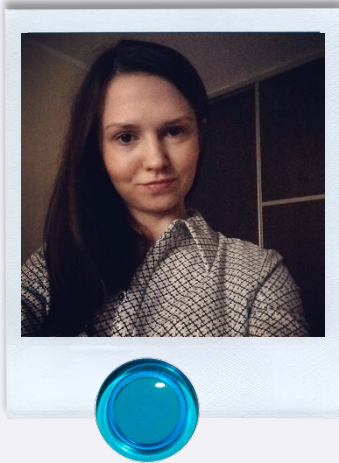


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Aleksandra GAWLIK



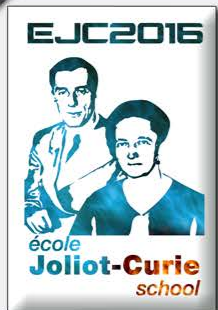
I'm a PhD student at University of Lodz (Poland) and I'm also a member of CERN's neutron Time Of Flight (nTOF) collaboration. The goal of my PhD work is to improve our knowledge about the Big Bang and paths of creation heavy elements in stars. My thesis is about neutron capture cross sections of $^{70}\text{Ge}(n,\gamma)$ at n_TOF CERN.

*PhD student (since October 2014),
Faculty of Physics and Applied Informatics,
University of Lodz, Poland*

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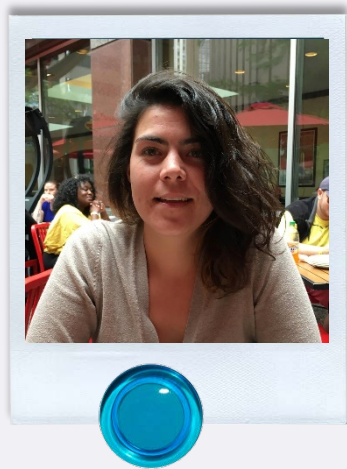


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Gwenaëlle GILARDY



I am a Ph.D. student of University of Bordeaux at University of Notre Dame, IN. I am studying (a; g) reactions throughout two different projects. My main project is to study ${}^7\text{Li}(a; g){}^{11}\text{B}$ which will contribute to constraint Big Bang nucleosynthesis model and (maybe) help solving the Li problem. I'm also working on the commissioning of St. George, a recoil mass separator, which will study (a; g) reactions happening in stars for low mass nuclei, up to $A=40$.

*PhD student
University of Notre Dame*

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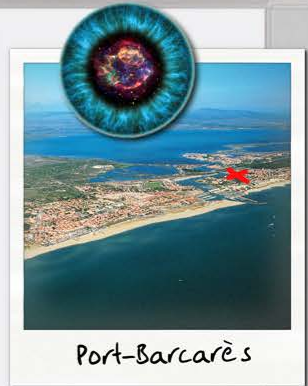
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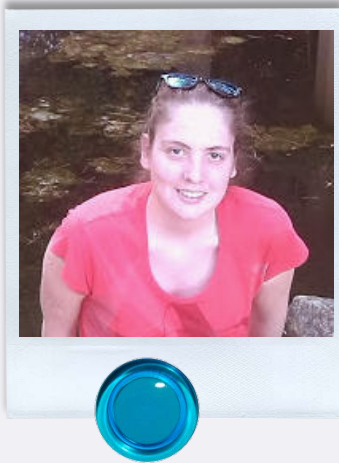


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Claudia GONZALEZ BOQUERA



I am a first year PhD student at the University of Barcelona. My research is mainly focused on neutron rich matter in atomic nuclei and neutron stars. Currently I am working on the study of symmetry energies at different orders of approximation and their influence in the transition between the core and the crust of neutron stars. Other topics in which my PhD is based on are, for example, the study of nuclear neutron skins and the study of the dependence of the density with the symmetry energies based on PVES (Parity Violating Electron Scattering) calculations.

*PhD student
University of Barcelona, Spain*

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Wenjia HUANG



The Atomic Mass Evaluation(AME) focuses on the evaluation and interpretation of atomic masses. The particularity of AME is that any mass measurement basically establishes a relation between two or more nuclides, resulting in an entangled network for all nuclides involved. I have been working on AME for two years and will continue to do so in the future.

CSNSM Orsay, France

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Tijani ID BARKACH



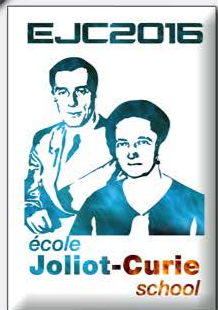
My name is Tijani Id barkach and I am a first year PhD student. The aim of my project is to study the high energy collision between molecules and atoms. I will work with a new accelerator called ANDROMEDE at IPN. Using the AGAT detector, we want to know more about fragmentation and collision.

*PhD student,
IPN Orsay, France*

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Yung Hee KIM



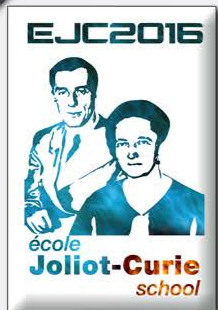
I'm finishing my first year working as a post Doc at VAMOS spectrometer group in GANIL, France.
I received my PhD August last year with topic of "The multi-nuclei transfer reaction of $^{136}\text{Xe}+^{198}\text{Pt}$ above the Coulomb barrier".
I'm doing preparation, execution and analysis of several experiments in AGATA-VAMOS campaign. I developed delayed gamma-ray detection system for the VAMOS to study isomer state from reaction fragments. My current research interest is to create and study the structure of neutron rich around $N=126$ magic number.

*Post-doc
GANIL Caen, France*

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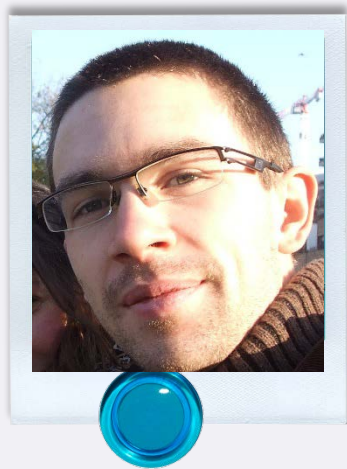


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Loïc LE MEUR



I am a 2nd year PhD student in the Subatech laboratory (Nantes, France). The aim of my thesis is to study the beta decays with the TAS (Total Absorption Spectroscopy) method. This technique allows to directly access the beta feeding to the daughter nucleus, which is related to the beta strength. The TAS allows to correct the Pandemonium effect, which affects some nuclei in nuclear databases, and which consists in a bias of the beta feeding measurements performed with Germanium detectors in the case of decays of nuclei exhibiting large Q_{β} values. After the analysis of an experiment performed in Jyväskylä (Finland) in 2014, my work will be focused on nuclei of interest for nuclear astrophysics : the vicinity of doubly magic nucleus ^{132}Sn , and particularly the study of Pygmy resonances via beta-decay.

*PhD student
Subatech Nantes, France*

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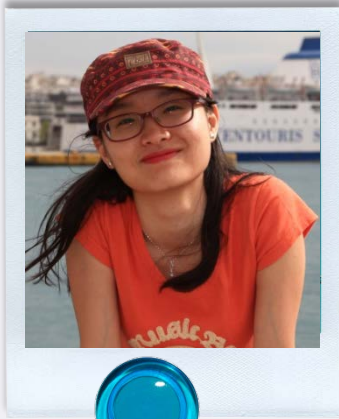
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Hongjie Li



My postdoctoral work is about pulse shape analysis of the new generation HPGe detector AGATA (Advanced GAMMA Tracking Array) in GANIL. I am interested in gamma-ray spectroscopy to study nuclear structure. I got my PhD degree from Sweden in 2015. The title of my PhD thesis is "Collective Excitation in Transitional Nuclei Studied by Means of gamma-ray Spectroscopy and Lifetime Measurements".

*Post-doc
GANIL Caen, France*

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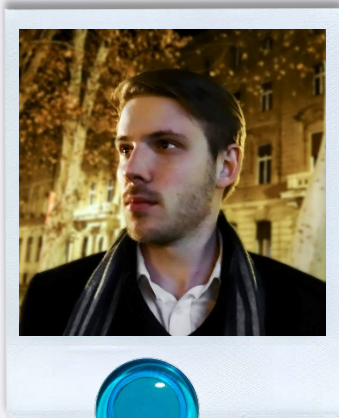
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Petar MAREVIC



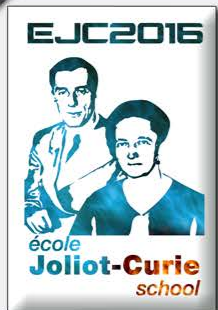
Originally from Croatia, I have started my PhD at Université Paris-Sud in November 2015. As a part of my PHD thesis, we are currently developing a theoretical model based on the relativistic mean-field theory and the generator coordinate method. This model can be applied in study of different nuclear structure phenomena, such as the octupole deformation or properties of cluster states in atomic nuclei.

*PHD student
IPN Orsay, France*



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Nassurlla MARZHAN



I live in Almaty, Kazakhstan.
I am PhD student (3th year) in Al-Farabi Kazakh National University in Kazakhstan where I graduated the bachelor and master degree in nuclear physics.
I am 26. I study nuclear physics in area of heavy ion collisions in order to obtain cross section and optimal parameters of the reaction.

PhD student
Al-Farabi Kazakh National University, Kazakhstan

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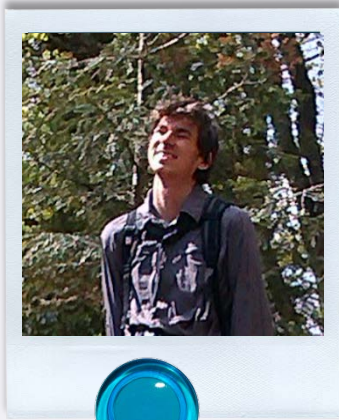


Port-Barcarès

Benoît MAUSS

I'm starting my second year as a PhD student in GANIL. My work concerns the search for cluster states in 10B, using the demonstrator of the active target ACTAR TPC. Apart from that, hiking is one of my favorite way to pass time.

*Phd student
GANIL Caen, France*



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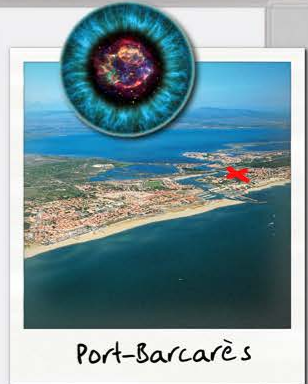
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Anne MEYER



Primitive meteorites contain several types of dust grains of presolar origin, identified by their anomalous isotopic abundances. To determine the stellar sources where these grains come from, stellar models are developed, where nuclear reaction rates are a crucial ingredient and may have a strong impact on yields predictions. During my pre-thesis internship, I studied the $^{13}\text{N}(\alpha, p)^{16}\text{O}$ reaction, which plays an important role in recent explosive He shell models in massive stars. The goal of my PhD thesis is to reduce the nuclear uncertainties associated to the $^{30}\text{P}(p, \gamma)^{31}\text{S}$ reaction, which has a strong impact on classical novae model predictions.

*PhD student since September 2016
IPN Orsay, France*



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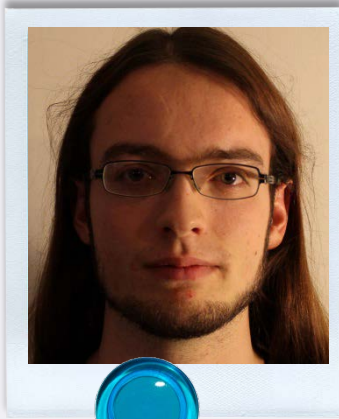


ORIGIN OF NUCLEI IN THE UNIVERSE

25TH TO 30TH
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PORT BARCARES
FRANCE



Bruno PAGANI



I am a french PhD student, formerly from ENS Lyon and Observatoire de Paris–Meudon.

My work is about the asymmetric aspect of core-collapse supernovæ. Especially, I try to figure out the role of the SASI and low T/W instabilities in the explosion mechanism, as well as the links between those instabilities. This involves theoretical calculus and numerical simulations, also guided by an analogical SWASI device, the “supernovæ fountain”.

*PhD student
CEA Saclay, France*

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Port-Barcarès

Thanassis PSALTIS



I'm a second year Master's Student at McMaster University in Canada, planning to move into a PhD this winter. For my PhD project I will perform the first measurement of the $7\text{-Be}(\alpha,\gamma)11\text{-C}$ reaction rate in inverse kinematics using the DRAGON facility at TRIUMF. The results will shed light on the Nuclear Physics uncertainties of the νp -process and, by extension, on the daunting puzzle of the origin of the astrophysically interesting p -nuclei.

Beyond that, I am a presenter/producer in W.J. McCallion Planetarium and I participate in several science communication initiatives worldwide.

*Master Student
McMaster University, Canada*



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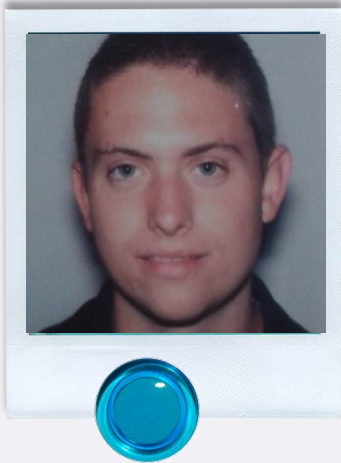
25TH TO 30TH
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Xavier RAYMOND

I am 25 and I am starting my second year as a PhD student in Bordeaux. I am working on measurements of nuclear excitation cross sections by inelastic scattering of electrons. These electrons are extracted from a laser-produced plasma.

*PhD Student
CENBG Bordeaux, France*



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Moritz REICHERT



I am finishing my master thesis (TU Darmstadt) about nucleosynthesis in core-collapse supernovae.

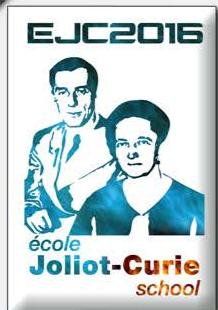
I have constructed a reduced nuclear reaction network that is valid for large range of hydrodynamical conditions and numerically very efficient. It is thus ideal to be coupled within supernova codes. For my Ph.D., starting next month, I will continue implementing my new network into a supernova code and I will further investigate different nucleosynthesis processes that produce the heaviest elements in the universe.

TU Darmstadt, Germany



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Aldric REVEL



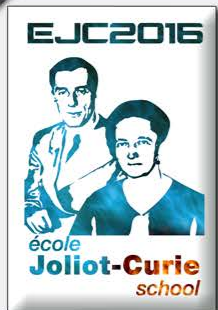
I'm about to start my second year of PhD at GANIL and LPC. I'm working on both the analysis of data from GSI in which I'm looking for two-neutron decay correlations and on the analysis of data from an experiment performed last november at RIKEN in order to look at the structure of the unbound ^{28}F nucleus. I'm therefore interested on the structure of light neutron rich nuclei along the drip-line. Apart from physics, I'm also interested by sports in general and especially rugby and surfing that I practice.

*PhD student
GANIL Caen, France*

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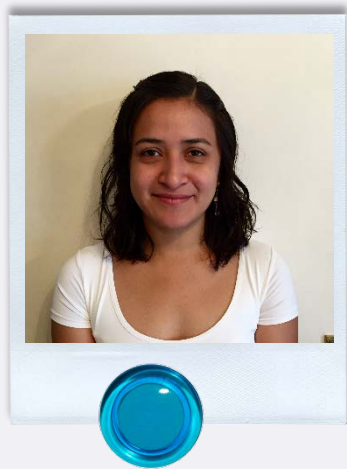


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Elisa ROMERO-ROMERO



I am a PhD student of the University of Tennessee, Knoxville. My thesis project is the development of ultrasensitive analytical techniques to detect trace elements in material used to construct detectors for ultra low background experiments. I am part of the Majorana Demonstrator (MJD) collaboration which has as goal to measure the neutrinoless double beta decay of the isotope 76Ge . We have evaluated Accelerator Mass Spectroscopy (AMS) for the applications of detecting uranium and thorium impurity levels in the high purity copper materials used for the MJD experiment.

*PhD student
University of Tennessee*

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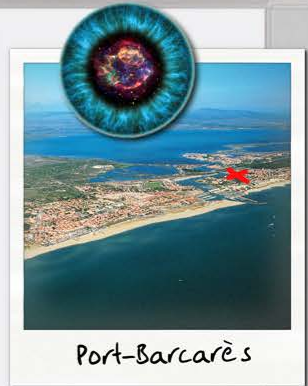
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Shahab SANJARI



My primary fields of research are design of non-destructive electromagnetic detectors and their applications in heavy-ion storage ring experiments for nuclear astrophysics experiments. These include mass and lifetime measurements of short-lived exotic radioactive ion species.

Post-Doctoral position

GSI Helmholtz Center for Heavy Ion Research, Darmstadt, Germany

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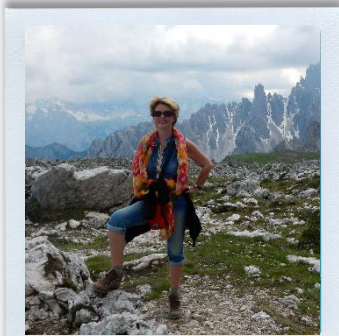


Port-Barcarès

Elisabeth VANGIONI

Champs de recherche : astrophysique des hautes énergies (nucléaire, astroparticules), nucléosynthèse primordiale, évolution cosmique des éléments, évolution des premières structures de l'Univers.

Institut d'Astrophysique de Paris, CNRS



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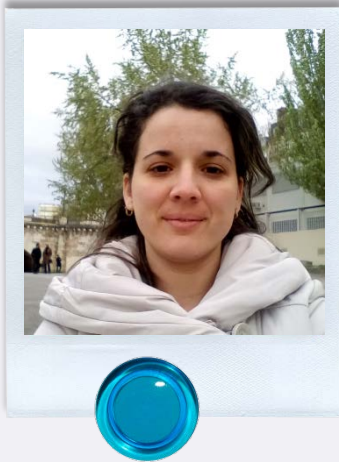
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Port-Barcarès

Liss VASQUEZ RODRIGUEZ



My name is Liss Vazquez Rodriguez. I am PhD student at Institute of Nuclear Physics, Orsay. The aim of my thesis is to measure the hyperfine structure (HFS) and isotope shift (IS) of Tin and Silver isotopes and to establish laser-spectroscopy capabilities at ALTO. (Accélérateur Lineaire et Tandem a Orsay). The technique of choice is collinear laser spectroscopy. In this method a continuous-wave laser beam is overlapped with the radioactive beam and at a precise set of laser frequencies the atoms fluoresce in the transitions of their hyperfine structure.

*PhD student
IPN Orsay, France*

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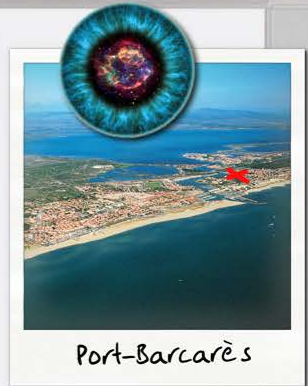
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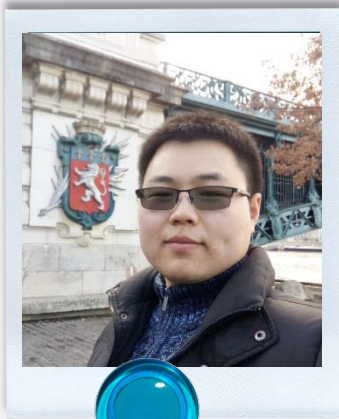


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Qiang ZHAO



I am a Ph.D. student of University Lyon 1 (France) and Lanzhou University (China). I am in the Theory Group of Institut de Physique Nucléaire de Lyon. The aim of my PhD work is to build relativistic Lagrangians based on meson exchange framework, which can be applied to describe Nucleon-Nucleon (NN) scattering and few-body clusters, as well as nuclear matter and finite nuclei.

*PhD Student
IPN Lyon, France*

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Zizhao ZONG



I'm a PhD student majoring in astro-particle physics. During the last two years, I have been working for two projects: LHAASO and Auger. In the LHAASO project, which is under constructing in China, I have been working on the simulation of LHAASO-WFCTA, which is the telescope array for atmospheric Cherenkov detection in the LHAASO project. And in Auger, I have been working for the Auger Prime surface scintillator detectors as a member in the experimental group.

*PhD student
IPN Orsay, France*

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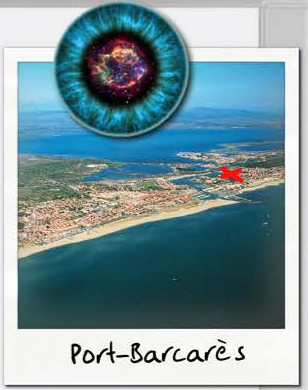
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Valérie FROIS



I'm in charge of communication department at the Institut de Physique Nucléaire, Orsay . The activities of the department also cover the area of internal and external scientific events (workshops , seminars, international conferences) headed by the laboratory. I am involved for many years in several organizing committees of scientific events for the physic's community.

Communication

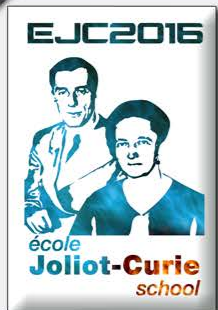
(secretary of Joliot-Curie School since 2014)

IPN Orsay, CNRS-IN2P3 / Paris Sud University, France

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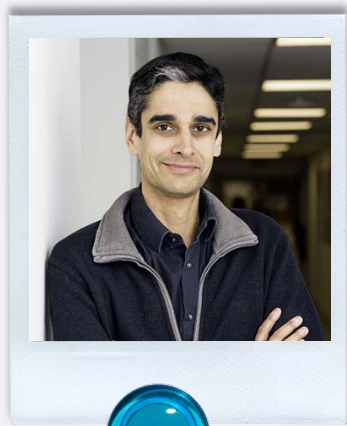


Committee

Elias KHAN

Theoretical and experimental approaches in nuclear structure : excitations in exotic nuclei, astrophysical applications, cluster states, etc.

*Professor, Head of EJC school
IPN Orsay, France*



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Miguel MARQUES

My group explores the limits of neutron binding in nuclei and the potential new phenomena that may arise. We started this research at GANIL, with experiments probing the neutron dripline and beyond up to Beryllium, and a few years ago we moved to RIKEN in order to extend our search to the highest masses available in the world, from Boron to Fluorine.

*Staff researcher
Member of EJC2016 Scientific Committee
LPC Caen, France*



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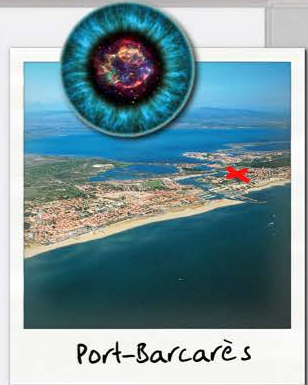
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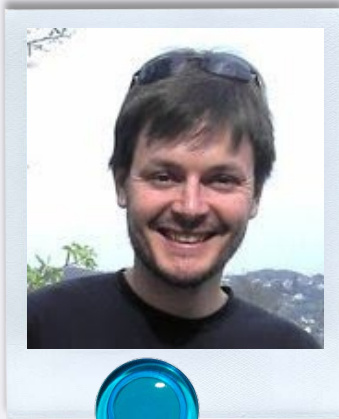


Committee

Jérôme MARGUERON

Mon domaine de recherche concerne l'étude théorique des étoiles à neutrons et des supernovae à travers la modélisation des processus nucléaires, comme par exemple l'équation d'état de la matière nucléaire, les propriétés thermodynamique de la matière dense et chaude, les processus d'émission neutrinos, etc...

*Researcher
IPN Lyon, France*



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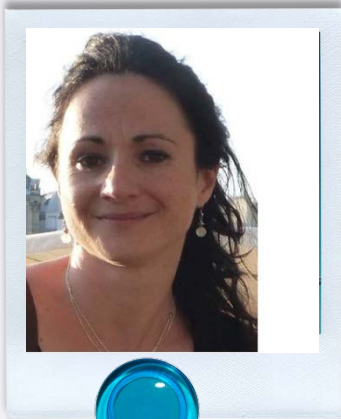
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Nicoleta PAUNA

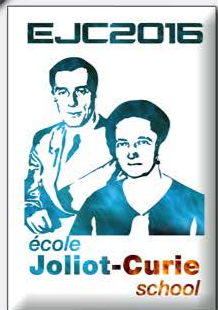
My research activity concerns particle physics applied to hadrontherapy (a technique applied in cancer tumors treatment when the irradiating beams are made of charged particles: protons and other ions, such as carbon). I'm mainly focused on real time control of the dose distribution during ion therapy.

*Member of EJC2016 Scientific Committee
LPC Clermont, France*

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Olivier SORLIN

Presently working at the GANIL facility in France, I am in charge of the LISE spectrometer, that allows the production and selection of radioactive nuclei, with various fields of applications such as shell evolution, nuclear astrophysics, soft and giant excitations, halo and cluster nuclei. I am mainly working on the shell evolution towards the nuclear drip line (with underlying forces) and on consequences in the r-process nucleosynthesis. I have been mainly involved in experiments at various facilities worldwide, such as LISE/GANIL, NSCL/MSU, GSI and RIKEN, using various experimental techniques as coulomb excitation, nucleon transfer or knockout, beta and isomer decays.

*Director of Research
GANIL, France*

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Vincent TATISCHEFF

I work in nuclear astrophysics at Centre de Sciences Nucléaires et Sciences de la Matière in Orsay (CSNSM-IN2P3-CNRS / Univ. Paris-Sud / Univ. Paris-Saclay). More specifically I use data from X- and gamma-ray space telescopes to study various high-energy processes occurring in the cosmos: synthesis of nuclei in stars, acceleration of particles in shock waves of stellar explosions, gamma-ray emission from nuclear reactions induced by cosmic rays in the interstellar medium etc..

*Centre de Sciences Nucléaires et Sciences de la Matière in Orsay
CSNSM Orsay, France*

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Speakers



Denis ALLARD

Research fields :

High energy astrophysics : ultra-high-energy cosmic-ray phenomenology ,
multimessenger (cosmic-rays, neutrinos, photons) astrophysics.

Lecturer EJC2016

*Researcher (CNRS) at the laboratory AstroParticule et Cosmologie (APC) since
2006.*

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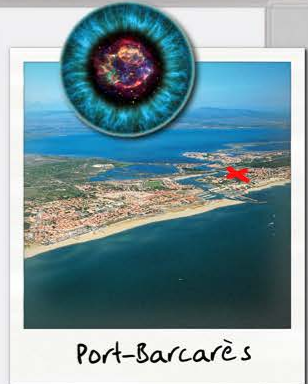
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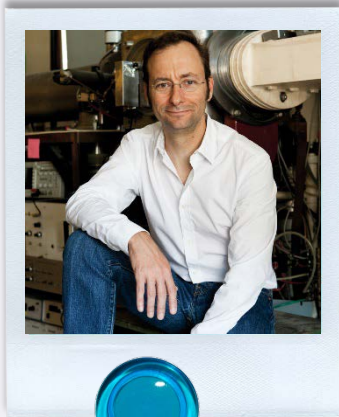
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Jean DUPRAT

Speakers



I work on analysis of extraterrestrial sample mainly on micrometeorites. Micrometeorites are interplanetary dust particles that survive atmospheric entry. We collect these particles in ices and snow of Antarctica. Some of these samples are originating from the surface of comets and provides information on the solar system formation and early evolution. The chemical and isotopic analysis on these particles is performed by means of electron microscopy, infra-red spectroscopy and secondary ion mass spectrometry. With colleagues from Institute of Nuclear Physics Orsay, we study the possibility to find a global scenario that may account for the presence of short lived radio-nuclei in the proto-solar nebulae.

CSNSM Orsay
CNRS-IN2P3 / Univ. Paris-Sud / Univ. Paris-Saclay, France
Lecturer EJC2016

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Speakers



Thierry FOGLEZZO

My research is focused on supernova physics, shock dynamics and instabilities.
I use the complementarity between analytical, numerical and experimental tools.

*Astrophysicist at CEA Saclay, France
Head of the laboratory LMPA for the theoretical modeling of astrophysical plasmas
Lecturer EJC2016*

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Speakers



Stéphane GORIELY

My field of interest:

- Stellar nucleosynthesis, including in particular the s-, r- and p-processes;
- Nuclear physics for astrophysical applications, including in particular the determination of nuclear structure and interaction properties in the framework of microscopic models;
- Nucleocosmochronology.

Lecturer EJC2016

Institut d'Astronomie et d'Astrophysique, Université Libre de Bruxelles, Belgium

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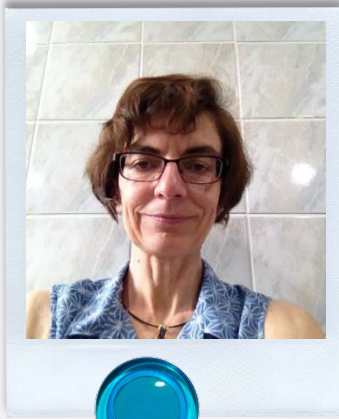
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Francesca GULMINELLI

Speakers



I am a professor at the University of Caen and a nuclear theorist. My current research interests are focused on the modelling of dense matter, such as it can be found in core-collapse supernova and neutron stars. I am using different effective models to span the wide range of densities, temperatures and proton fractions of these astrophysical objects: density functional theory, effective lagrangians, semiclassical cluster theories, statistical approaches. I am especially interested in exploring the influence of nuclear physics laboratory data on the theoretical predictions for the compact objects.

Lecturer EJC2016

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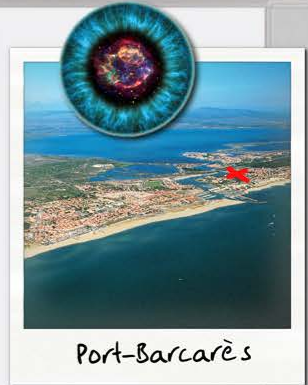
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Faïrouz HAMMACHE

Speakers



My main research activity is nuclear astrophysics, whose objective is the understanding of stellar evolution and the synthesis of elements present in the Universe. My work consists in studying experimentally the cross sections of key reactions of astrophysical interest. These last years, I worked on important reactions involved in the so-called ${}^7\text{Li}$ cosmological problem, in AGB and massive stars and in novae. These reactions and the spectroscopy of the involved nuclei were studied by using indirect methods such as transfer reactions, charge-exchange reactions and inelastic scattering reactions. The experiments were performed at different beam facilities, Tandem of ALTO for stable beams and GANIL at Caen for radioactive beams and using different experimental setups, magnetic spectrometers (Split-Pole and Q3D), silicon detector array (MUST2) for charged particles and gamma ray detectors (EXOGAM).

Lecturer EJC2016
IPN Orsay, France

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Speakers



Georges MEYNET

My main research activity is the study of stellar physics and to explore the consequences for various astrophysical problems like the nucleosynthesis associated to the first stars, the nature of the progenitors of core collapse supernovae and Gamma Ray Bursts, the star-planet interactions, the stellar populations in galaxies and starbursts. Our research team explored also some more speculative fields as the effects of WIMPS in stars or the impact of change with time of physical constants on the nucleosynthesis of the first stars.

Lecturer EJC2016

Département d'Astronomie de l'Université de Genève, Switzerland

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Speakers



Pierre PIZZOCHERO

I am a theoretical physicist who studied at Stony Brook under the invaluable mentoring of Gerry Brown and Hans Bethe. I have worked in different areas of physics: quantum field theory, neutrino astrophysics, hadron to quark-gluon transition, supernova explosions, compact star cooling. More recently I have been involved with the theory of pulsar glitches and nucleon superfluidity both microscopically (vortex pinning) and astrophysically (realistic hydrodynamical modelling of glitches and comparison with observations).

Lecturer EJC2016

Professor of Relativistic Astronuclear Physics

Theoretical Physics Group, Physics Departement, Università degli Studi di Milano, Italy

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Speakers



Natalie WEBB

My research is centred on the study of compact objects, including multi-wavelength observations of neutron stars to understand their nature. This includes X-ray and optical observations of old neutron stars as well as radio, X- and gamma-ray observations of pulsating neutron stars (pulsars) to constrain, amongst other parameters, the mass and the radius, to gain insight into the equation of state of the matter composing these "cold", dense objects.

*Astronome Adjoint
Institut de Recherche en Astrophysique et Planétologie (IRAP), France*

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