

(more information by clicking on the PhD subject)

| speciality          | N°Réf. | Subject                                                                                                                                         | keywords                                                                            | ED       | Thesis supervisor | Filled |
|---------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------|-------------------|--------|
| Accelerator physics | 59989  | <a href="#">Development of innovative systems for the real-time control and operation of the superconducting cavities in the PERLE project.</a> | Superconducting cavities, LLRF, Simulator, Embedded system, PERLE, ERL              | PHENIICS | STOCCHI Achille   |        |
| Accelerator physics | 65118  | <a href="#">Beam Manipulation for Next-Generation Compact Multi-Stage and Multi-Physics Accelerators</a>                                        | electrons, particle accelerator, dielectric waveguide, beam dynamics, optics, laser | PHENIICS | BRUNI Christelle  |        |
| Accelerator physics | 65480  | <a href="#">Fundamental studies of superconducting radiofrequency cavities [CNRS-UChicago Joint-PhD program]</a>                                | superconductor, radiofrequency, accelerator                                         | PHENIICS | MIYAZAKI Akira    |        |
| Accelerator physics | 65584  | <a href="#">Study of longitudinal beam dynamics effects on the PERLE energy recovery linear accelerator</a>                                     | Accelerator, Linac, Energy recuperation, Longitudinal, Beam dynamics                | PHENIICS | MICHAUD Julien    |        |

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| Accelerator physics                 | 65593 | <a href="#">Beam Halo Studies for the PERLE Energy Recovery Linac</a>                                                                             | Accelerator, Beam losses, Energy recovery, Linac, Beam dynamics, Beam collimation                      | PHENIICS | FOMIN Oleksiy      |     |
| Astroparticle Science and Cosmology | 59568 | <a href="#">Time-domain astronomy with the COMCUBE-S gamma-ray mission</a>                                                                        | astroparticules, mission spatiale, astronomie gamma, sursaut gamma, intelligence artificielle, CubeSat | PHENIICS | TATISCHEFF Vincent |     |
| Astroparticle Science and Cosmology | 59704 | <a href="#">Commissioning and characterization of variable finesse filter cavities for squeezing application in gravitational-wave detectors.</a> | Squeezing, Gravitational-wave detectors, Optical cavity, Variable finesse                              | PHENIICS | LARTAUX Angélique  |     |
| Astroparticle Science and Cosmology | 59910 | <a href="#">From slitless spectrophotometry to the equation of state for dark energy with the StarDICE and LSST experiments</a>                   | cosmology, dark energy                                                                                 | PHENIICS | NEVEU Jérémy       |     |
| Astroparticle Science and Cosmology | 60152 | <a href="#">GRANDMA, Vera Rubin and High Energy Astrophysical transient events</a>                                                                | transient sky, data science, compact objects, kilonova                                                 | PHENIICS | HELLO Patrice      | yes |

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| Astroparticle Science and Cosmology | 60238 | <a href="#">Dark Matter and Hidden Sector U(1): The DAMIC-M Experiment</a>                                                                                                                          | Dark Matter, Skipper CCD, astroparticle, cosmology, direct search                                                                                            | PHENIICS | BERTOU Xavier      | yes |
| Astroparticle Science and Cosmology | 60659 | <a href="#">Chasing gamma rays and neutrinos at EeV energies with the Perre Auger Observatory</a>                                                                                                   | ultra-high energy cosmic rays, photons and neutrinos, sources and propagation of cosmic rays, extensive air showers, super heavy dark matter, cosmic strings | PHENIICS | DELIGNY Olivier    | yes |
| Instrumentation physics             | 59496 | <a href="#">Machine learning algorithms for the analysis of time-of-flight mass spectra with a gold nanoparticle probe: Classification, quantification and identification of complex compounds.</a> | Ion-Matter Interaction, Mass Spectrometry, Surface Analysis, Artificial Intelligence, Deep Learning, Simulation                                              | PHENIICS | NAIMI Sarah        |     |
| Instrumentation physics             | 60058 | <a href="#">Direct dark matter detection based on innovative cryogenic devices for the TESSERACT project</a>                                                                                        | Ge cryogenic detectors, Dark matter                                                                                                                          | PHENIICS | MARNIEROS Stefanos |     |
| Instrumentation physics             | 60583 | <a href="#">Study of chlorine-containing elpasolite crystals for neutron and gamma spectroscopy</a>                                                                                                 | Neutron spectroscopy, Gamma spectroscopy, Neutron-gamma discrimination, Calorimetry                                                                          | PHENIICS | DELAFOSSE Clément  | yes |

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| Instrumentation physics | 60685 | <a href="#">Feasibility Study of Electron Scattering on Rare Isotopes at the PERLE Facility</a>                                                              | Electron scattering, rare isotopes, PERLE, numerical simulation, ion traps                            | PHENIICS | NAIMI Sarah      | yes |
| Instrumentation physics | 66458 | <a href="#">Development of PicoCal, electromagnetic calorimeter for the Upgrade II of the LHCb experiment at CERN</a>                                        | Electromagnetic calorimeter, particle physics, simulation, reconstruction                             | PHENIICS | ROBBE Patrick    |     |
| Medical imaging physics | 55652 | <a href="#">Development and implementation of ion beam monitoring tools for the BioALTO preclinical irradiation platform</a>                                 | Beam monitoring, Dosimetry, Pré-clinical irradiation platform, Nuclear Instrumentation, hadrontherapy | PHENIICS | LANIECE Philippe | yes |
| Material science        | 59648 | <a href="#">Understanding cavity swelling under irradiation in advanced vanadium alloys</a>                                                                  | irradiation, vanadium, MET                                                                            | PHENIICS | GENTILS Aurélie  |     |
| Material science        | 64005 | <a href="#">Behavior of Metallic and Superconducting Surfaces Under Electron Bombardment at Very Low Temperature: Implications for Particle Accelerators</a> | electron irradiation, accelerator, materials surface                                                  | PHENIICS | SATTONNAY Gaël   | yes |

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| Material science     | 65390 | <a href="#">Effects of ion irradiation on the microstructural evolution of AlN</a>                                                       | Ion irradiation, microstructure, Defects, X-ray diffraction, RBS/C, Transmission electron microscopy | PHENIICS | JUBLOT-LECLERC Stéphanie |
| Material science     | 66304 | <a href="#">Development of a process for the chemical treatment of gaseous fission products produced in molten-salt nuclear reactors</a> | molten salts, electrochemistry, analytical chemistry, thermodynamic, nuclear energy, gas treatment   | PHENIICS | DELPECH Sylvie           |
| Nuclear Astrophysics | 59677 | <a href="#">Quasiparticle properties in neutron-star matter</a>                                                                          | neutron stars, ab-initio approach, effective mass, Landau parameters                                 | PHENIICS | URBAN Michael            |
| Nuclear Physics      | 59242 | <a href="#">Lifetimes of excited states in neutron-rich copper isotopes</a>                                                              | gamma spectroscopy, nuclear structure, exotic nuclei                                                 | PHENIICS | FRANCHOO Serge           |
| Nuclear Physics      | 59260 | <a href="#">Does tetraneutron, a 4 neutron nucleus, exist ? Search for its isobaric analog state in <math>4\text{H}</math></a>           | nuclear structure, neutral nuclei, superfluidity, direct reactions, particle gamma coincidence       | PHENIICS | ASSIÉ Marlène            |

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| Nuclear Physics | 59426 | <a href="#">Non-equilibrium dynamics in strongly entangled systems described with quantum computers</a>                                                            | Quantum computers, Many-body problems, Quantum Information theory, atomic nuclei, Neutrinos   | PHENIICS | LACROIX Denis         |
| Nuclear Physics | 59546 | <a href="#">Structure of heavy nuclei, SIRIUS@S3 commissioning and SIRIUS upgrade</a>                                                                              | nuclear structure, alpha, gamma, electron spectroscopy, X-ray spectroscopy, nuclear reactions | PHENIICS | LOPEZ-MARTENS Araceli |
| Nuclear Physics | 59628 | <a href="#">Transfer Learning Approaches Leveraging Nuclear Ab Initio Reaction Models</a>                                                                          | IA, ab initio methods, reactions                                                              | PHENIICS | HUPIN Guillaume       |
| Nuclear Physics | 59749 | <a href="#">Taiwan: Study of Quantum Chromodynamics using Silicon Photo-Multipliers and Artificial Intelligence algorithms at the future Electron-Ion Collider</a> | Quantum Chromodynamics, Silicon Photo-Multipliers, Artificial Intelligence                    | PHENIICS | MUNOZ CAMACHO Carlos  |
| Nuclear Physics | 59764 | <a href="#">Mapping the tower of nuclear effective field theories</a>                                                                                              | ab initio method, effective field theory, structure, structure                                | PHENIICS | VAN KOLCK Ubirajara   |

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| Nuclear Physics | 59776 | <a href="#">Systematic study of matter produced in heavy-ion collisions at few GeV energy through electromagnetic probes</a>        | hadronic matter, QCD, data analysis, dileptons                                        | PHENIICS | RAMSTEIN Béatrice      |
| Nuclear Physics | 59996 | <a href="#">Accelerated Adiabatic quantum computation for strongly entangled systems</a>                                            | Quantum computers, Many-body problems, Quantum Information theory, atomic nuclei      | PHENIICS | LACROIX Denis          |
| Nuclear Physics | 60007 | <a href="#">Study of the Heavy Fragment survival in Multi Nucleon Transfer reactions</a>                                            | nuclear reactions, Multi nucleons transfert , GANIL                                   | PHENIICS | GHEORGHE IULIAN STEFAN |
| Nuclear Physics | 60628 | <a href="#">Investigating the dynamics of heavy-ion collisions at energies of a few GeV with baryonic resonances</a>                | data analysis, QCD, hadronic matter, baryon resonances                                | PHENIICS | RAMSTEIN Béatrice      |
| Nuclear Physics | 63603 | <a href="#">Metastable states in very exotic nuclei investigated by lifetimes and nuclear moments: testing the nuclear magicity</a> | gamma spectroscopy, new developments R&D , nuclear structure, Monte-Carlo simulations | PHENIICS | LOZEVA Radomira        |

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| Nuclear Physics  | 64689 | <a href="#">Applications of ab initio nuclear theory to electroweak process in atomic nuclei</a>                                                                                | theoretical physics, nuclear physics, muonic atoms, ab initio methods                              | PHENIICS | HUPIN Guillaume      |     |
| Nuclear Physics  | 65807 | <a href="#">Entry distribution using gamma-ray tracking in <math>^{253}\text{No}</math>: Fission Barrier measurement and its effect versus odd nucleon and angular momentum</a> | Nuclear structure, heavy and super heavy nuclei, gamma-ray spectroscopy, gamma-ray tracking, AI/ML | PHENIICS | KORICHI Amel         |     |
| Nuclear Physics  | 66664 | <a href="#">Laser spectroscopy of cold molecules sensitive to parity and time-reversal violation</a>                                                                            | nuclear physics, laser spectroscopy                                                                | PHENIICS | FRANCHOO Serge       |     |
| Particle Physics | 59175 | <a href="#">The future electron-ion collider</a>                                                                                                                                | Physics, Particle physics, Hadron physics, Nuclear physics, Accelerators, Colliders                | PHENIICS | MUNOZ CAMACHO Carlos |     |
| Particle Physics | 59396 | <a href="#">Very high precision measurement of the photon polarization in <math>b \rightarrow s</math> gamma transitions with the LHCb upgraded detector</a>                    | Flavor Physics, LHC, FCNC, electron                                                                | PHENIICS | SCHUNE Marie-Hélène  | yes |

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| Particle Physics | 59471 | <a href="#">Study of a new type of scintillating grain calorimeter for FCCee and analysis of the <math>\Lambda_b \rightarrow \Lambda \mu \mu</math> decay with the LHCb detector</a> | calorimeter, FCCee, Flavour physics, LHCb                                                         | PHENIICS | SCHUNE Marie-Hélène    |     |
| Particle Physics | 59476 | <a href="#">Challenging neutrino events reconstruction in the DUNE liquid argon time projection chamber with advanced machine learning methods</a>                                   | Neutrino oscillation, CP symmetry violation, Advanced machine learning methods, LAr TPC detectors | PHENIICS | KERMAÏDIC Yoann        | yes |
| Particle Physics | 59582 | <a href="#">Measurement of the <math>B(s) \rightarrow hh</math> decays with the LHCb experiment and participation in the development of the PicoCal detector</a>                     | Flavour Physics, LHCb, LHC, Calorimetry                                                           | PHENIICS | AGAPOPOULOU Christina  |     |
| Particle Physics | 59683 | <a href="#">Double charm production measurements with ALICE at the LHC</a>                                                                                                           | Charm, QCD, multiple parton interaction, heavy-ion collision, LHC, ALICE                          | PHENIICS | CONESA DEL VALLE Zaida |     |
| Particle Physics | 59728 | <a href="#">The Partonic Structure of the Nucleon</a>                                                                                                                                | Parton Distributions, Deeply virtual compton scattering, short range correlations, EMC effect     | PHENIICS | HOBALLAH Mostafa       |     |

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| Particle Physics | 59959 | <a href="#">The DeLLight experiment for the search of optical nonlinearity in vacuum with intense laser pulses</a> | Quantum electrodynamics and quantum vacuum, Optical nonlinearity in vacuum, interferometry with femtosecond laser pulses, Intense laser | PHENIICS | SARAZIN Xavier   |     |
| Particle Physics | 59981 | <a href="#">Measurment of branching ratio of Bs meson with the Belle II detector</a>                               | Belle II experiment, Data analysis, Phenomenology                                                                                       | PHENIICS | KOU Emi          | yes |
| Particle Physics | 60150 | <a href="#">Search for the neutrinoless double beta decay with the SuperNEMO demonstrator</a>                      | neutrinos, Majorana, leptogenesis, mass                                                                                                 | PHENIICS | SIMARD Laurent   |     |
| Particle Physics | 60925 | <a href="#">Study of cryogenic microwave absorbers</a>                                                             | microwave, absorbers, higher order modes, superconducting accelerator, cryogenic, material                                              | PHENIICS | STOCCHI Achille  |     |
| Particle Physics | 63152 | <a href="#">Study of tau decays with the Belle II detector</a>                                                     | tau lepton, Belle II                                                                                                                    | PHENIICS | MARTENS Aurélien | yes |

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| Particle Physics | 65540 | <a href="#">Analytical constraints on hadronic form factors: from pions to flavour</a>  | Hadronic physics, Form factors, Flavour physics, Analytical constraints                         | PHENIICS | REBOUD M ril    | yes |
| Particle Physics | 65624 | <a href="#">Two-loop amplitudes for quarkonium production and decay</a>                 | QCD, quarkonium, higher-order perturbative calculation                                          | PHENIICS | BLOSSIER Beno t | yes |
| Particle Physics | 65703 | <a href="#">Probing the origin of flavor through rare processes</a>                     | Flavor physics , Effective Field Theories, Beyond the Standard Model Physics, Rare meson decays | PHENIICS | SUMENSARI Olcyr | yes |
| Particle Physics | 65903 | <a href="#">On-shell amplitudes beyond the classical regime</a>                         | quantum field theory, amplitudes                                                                | PHENIICS | FALKOWSKI Adam  | yes |
| Particle Physics | 66658 | <a href="#">ALLEGRO detector and noble liquid ECAL readout electronics optimization</a> | Detector, calorimeter, simulation, electronics, particle physics, FCC                           | PHENIICS | MORANGE Nicolas |     |

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| Physics                                                             | 59557 | <a href="#">Automatic alignment control for the Phase II of the Advanced Virgo gravitational-wave detector</a> | Gravitational-waves detector, Fabry-Perot cavity, Optics, Control                                              | EDOM     | LORIETTE Vincent |
| Sciences for Nuclear Fuel Cycle, Radioprotection and Radiochemistry | 66584 | <a href="#">Conditioning of radioactive magnesium metal waste</a>                                              | radioactive metal waste, conditioning matrices, magnesium, geopolymers, electrochemistry, analytical chemistry | PHENIICS | CANNES Céline    |