

FINAL SUMMARY ON THE RESEARCH  
UNIT:

Laboratoire Leprince Ringuet (LLR)

UNDER THE SUPERVISION OF THE  
FOLLOWING INSTITUTIONS AND  
RESEARCH BODIES:

École Polytechnique

Centre National de la Recherche Scientifique -  
CNRS

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**EVALUATION CAMPAIGN 2018-2019**  
GROUP E

Rapport publié le 11/02/2019



In the name of Hcéres<sup>1</sup>:

Michel Cosnard, President

In the name of the experts committee<sup>2</sup>:

Joachim Mnich, Chairman of the  
committee

Under the decree No.2014-1365 dated 14 November 2014,

<sup>1</sup> The president of Hcéres "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5);

<sup>2</sup> The evaluation reports "are signed by the chairman of the experts committee". (Article 11, paragraph 2).

Tables in this document were filled with data provided by laboratories and supervising bodies in the unit's application and in the Excel files "Données du contrat en cours" and "Données du prochain contrat".

## UNIT PRESENTATION

|   |                              |
|---|------------------------------|
| <b>Unit name:</b>                         | Laboratoire Leprince Ringuet |
| <b>Unit acronym:</b>                      | LLR                          |
| <b>Requested label:</b>                   |                              |
| <b>Application type:</b>                  | Renewal                      |
| <b>Current number:</b>                    |                              |
| <b>Head of the unit<br/>(2018-2019):</b>  | Mr Jean-Claude BRIENT        |
| <b>Project leader<br/>(2020-2024):</b>    | Search committee in progress |
| <b>Number of teams and/or<br/>themes:</b> | 7                            |

## EXPERTS COMMITTEE MEMBERS

|                 |   |
|-----------------|---|
| <b>Chair:</b>   | Mr Joachim MNICH, Deutsches Elektronen-Synchrotron DESY, Germany  |
| <b>Experts:</b> | Mr Oscar BLANCH BIGAS, Institut de Fisica d'Altes Energies, Spain |
|                 | Mr David BRASSE, CNRS, Strasbourg                                 |
|                 | Mr Boris HIPPOLYTE, Université de Strasbourg                      |
|                 | Mr Rémy POTHEAU, CNRS, Marseille (supporting personnel)           |
|                 | Ms Lydia Roos, CNRS, Paris (representative of CoNRS)              |
|                 | Ms Alessandra TONAZZO, Université Paris Diderot                   |

## HCÉRES REPRESENTATIVE

Mr Yannis KARYOTAKIS

## REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Ms Ursula BASSLER  
Mr Benoit DEVEAUD

## INTRODUCTION

### HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The “Laboratoire Leprince-Ringuet” (LLR) was created in 1936, by Mr Louis LEPRINCE-RINGUET at his nomination as professor of physics at the École Polytechnique. The laboratory is now related to CNRS on one side and École Polytechnique on the other side and is located at École Polytechnique, Palaiseau.

### MANAGEMENT TEAM

Mr Jean-Claude BRIENT (director) and Mr Pascal PAGANINI (deputy-director).

### HCÉRES NOMENCLATURE

ST2 – Physique.

### SCIENTIFIC DOMAIN

The laboratory research activity is dedicated to experimental aspects of the extreme scale physics. On the extremely small scale, the particle physics is nowadays mainly studied at CERN in LHC experiments and in the neutrinos experiments. In the large scale, the studies are related to violent events in the universe, through the gamma astronomy and more recently with the neutrino astronomy (such as the search for the diffuse supernovae neutrino background). In parallel, future projects are prepared through R&D on detectors and physics. That concerns the possible future leptons colliders as well as HL-LHC era. Particle acceleration by laser plasma interactions are also part of the preparation of the future of this scientific domain. In relation with the civil society demands, investigations are performed to see how our detectors can be used in the context of the machines dedicated to hadron or proton cancer therapy.

### UNIT WORKFORCE

|   | Unit workforce               |                      |
|---|------------------------------|----------------------|
|   | Laboratoire Leprince Ringuet |                      |
| Active staff  | Number<br>30/06/2018         | Number<br>01/01/2020 |
| Full professors and similar positions   |                              |                      |
| Assistant professors and similar positions  |                              |                      |
| Full time research directors (Directeurs de recherche) and similar positions                    | 14                           | 14                   |
| Full time research associates (Chargés de recherche) and similar positions                      | 15                           | 16                   |
| Other scientists (“Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.”) |                              |                      |
| High school teachers  |                              |                      |
| Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)                               | 36                           | 37                   |
| <b>Permanent staff</b>  | <b>65</b>                    | <b>67</b>            |

|   |           |           |
|---|-----------|-----------|
| Non-permanent professors and associate professors, including emeritus |           |           |
| Non-permanent full time scientists, including emeritus, post-docs     | 10        |           |
| <i>PhD</i> Students   | 12        |           |
| Non-permanent supporting personnel                                    | 4         |           |
| <b>Non-permanent staff</b>  | <b>26</b> |           |
| <b>Total</b>  | <b>91</b> | <b>67</b> |

## GLOBAL ASSESSMENT OF THE UNIT

The committee is deeply impressed by the individual scientific activities pursued by the laboratory and the future plans. LLR is a key player on the international level in fundamental science – particle and astro-particle physics – and in many original aspects in the context of IN2P3 institute activities at CNRS. The committee stresses the extraordinary quality of the scientific and technical staff, the high attractiveness for scientists and the very positive working conditions in particular for young doctoral and post-doctoral researchers.

The committee considers it important that the current uncertainty on the future academic structures in the Paris-Saclay area – laboratories and universities – is clarified in a way that enables the laboratory to develop their position in fundamental science and to continue to be attractive to the best students and researchers in the field.

LLR should pay attention to set right priorities, find balance between broad spectrum of projects and mitigating the risk to be subcritical in high priority activities. The committee recommends a high level of transparency on the assignment of - particular technical - resources to the ongoing and planned projects.

The laboratory suffers from the decrease in technical staff over the last years caused by the reduction of the number of positions and by difficulties to hire engineers under the boundary conditions of public service. This is jeopardizing the success of projects like the upgrade of CMS detector at LHC, CERN Geneva and the construction of CTA observatory.

The committee was pleased to learn from both supervising bodies the support for research in fundamental science as pursued by the unit and their confirmation that LLR will be an important partner in the new institute for technology, named New Uni for time being. The financing of PhD students is of utmost importance for the future of the unit and all efforts should be undertaken to continue the Labex or find an equivalent scheme. The committee appreciates that the supervising bodies are aware of the importance of this issue.

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