

FINAL RESUME ON THE RESEARCH UNIT:
Fusion Laboratoires Orsay (CSNSM, IMNC, IPNO,
LAL, LPT)

UNDER THE SUPERVISION OF THE
FOLLOWING INSTITUTIONS AND
RESEARCH BODIES:

Université Paris-Sud

Centre National de la Recherche Scientifique -
CNRS

Université Paris Diderot - Paris 7

EVALUATION CAMPAIGN 2018-2019
GROUP E

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In the name of Hcéres¹:

Michel Cosnard, President

In the name of the experts committee²:

David Mac Farlane, Chairman of the
committee

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

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

² 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

Unit name:	To be decided
Unit acronym:	To be decided
Requested label:	UMR
Application type:	Fusion of five laboratories (CSNSM, IMNC, IPNO, LAL, LPT)
Current number:	Not yet assigned
Head of the unit (2018-2019):	Unit not yet created
Project Leaders (2020-2024):	MM. Fadi IBRAHIM, Achille STOCCHI et Samuel WALLON
Number of teams and/or themes:	14 themes

EXPERTS COMMITTEE MEMBERS

Chair:	Mr David MAC FARLANE, SLAC National Accelerator Laboratory, United States
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INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The geographic proximity in the Orsay valley of the Paris-Sud university campus (future Paris-Saclay university) and recent research developments led five laboratories - Centre de sciences nucléaires et de sciences de la matière (CSNSM), Imagerie et modélisation en neurobiologie et cancérologie (IMNC), Institut de physique nucléaire d'Orsay (IPNO), Laboratoire de l'accélérateur linéaire (LAL) and Laboratoire de physique théorique (LPT), to consider a merger. In that respect, a steady two-year process of reflections regarding a long-term evolution of the organization of science in the Orsay valley has been organized. The reflections are based on three main observations: (i) the scientific and thematic frontiers among these laboratories are diminishing; (ii) a new positioning on certain topics is necessary because of the evolution of the disciplines; (iii) the technical potential of these laboratories constitutes a world-leading force that needs to be better organized.

In July 2018, the decision was finally taken to create on January 1st 2020 a new unit from the merging of the five current laboratories, all operated by CNRS, with a common history related to the creation (in 1956) of the university and research campus of Orsay. The future unit will be distributed in several existing buildings and the creation of the new unit will not necessitate any significant movement of personnel, although there is an ongoing need for substantial renewal of staffing levels in many unit areas.

MANAGEMENT TEAM

At the time of the review, phase 3 of planning for unification of the merged Orsay unit was just getting underway. Committee members were presented with a nominal organizational plan at that time, which is envisioned to encompass the following.

The structure of the unit will be composed of "scientific poles" gathering the activities of the already strong and ongoing themes for the unit. They will be seven "scientific poles" at the time of the creation of the unit: Nuclear Physics, Particle and Hadronic Physics, Astroparticles and Cosmology, Energy and Environment, Health Physics, Theory and Accelerators Physics. All the technical forces will be gathered in an "engineering pole". The structure of the unit is completed by an "administration pole", as well as by "support services" and by the platforms directly attached to the directorate.

The directorate of the unit will be composed of a director, two deputy directors, the directors of the "scientific poles" or associate scientific directors, the director of the "engineering pole" or associate technical director as well as the administrative director. The two deputy directors (one with a research profile and one with an supporting research profile) are in charge of cross-cutting and operational activities for the entire unit, without any particular thematic emphasis. They guarantee the proper functioning of the unit as a whole and help the director on a daily basis with particular attention to support services.

The directors of the "scientific poles" have the status of associate directors with a role of animation, scientific strategy in their theme and operational management of the pole.

The associate technical director leads the "engineering pole" and has the responsibility for developing a strategic vision for the technical aspects of the laboratory and representing the strategic visions for the different technical activities and services.

The associate scientific directors and the associate technical director are full members of management team, participating, defining and collectively implementing the strategic and operational vision and policy of the unit; they also guarantee the visibility of the pole outside the unit at both the national and international level.

The directorate is completed by the administrative director in charge of steering, supervising and coordinating the administrative services. This individual participates, along with the director, the deputy directors and the scientific and technical associate directors in the development of policies for each unit and organizes their implementation within each area of responsibility.

HCÉRES NOMENCLATURE

ST2 – Physique.

SCIENTIFIC DOMAIN

The new unit will have the capacity and vocation/ambition for a strong impact on a wide range of scientific and technical domains worldwide. The research themes of the new unit are Nuclear Physics, Nuclear Astrophysics & Astrochemistry, Health Physics, Solid-state Physics, Particle Physics, Hadronic Physics, Data Science, Theoretical Physics, Nuclear Energy & Environment, Physics of Neutrinos, Dark Matter, Astroparticles & Cosmology, Accelerator Physics, Multidisciplinary and Detector R&D.

This new unit aims to be the driving force in several major flagship projects at national and international level, some of which derive from the historical disciplines of the participating laboratories, others coming from emerging themes at their interfaces. This new ensemble should also encourage and help to support projects at more local scales, on faster cycles, likely to appear according to scientific news and/or technical innovations. Furthermore, a large perimeter of the new unit will provide space and appropriate actors for a certain number of transverse themes (e.g. involving theoretical physics, health physics, etc.), the growth of which can be otherwise limited by the perimeters of current laboratories.

UNIT WORKFORCE

	Unit workforce	
	Fusion Laboratoires Orsay	
Active staff	Number 30/06/2018	Number 01/01/2020
Full professors and similar positions	20	20
Assistant professors and similar positions	46	46
Full time research directors (Directeurs de recherche) and similar positions	72	72
Full time research associates (Chargés de recherche) and similar positions	82	82
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	1	1
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	365	365
Permanent staff	586	586
Non-permanent professors and associate professors, including emeritus	5	
Non-permanent full time scientists, including emeritus, post-docs, PhD students	198	
PhD Students	118	
Non-permanent supporting personnel	39	
Non-permanent staff	242	
Total	828	586

GLOBAL ASSESSMENT OF THE UNIT

The merger of the five existing Orsay valley laboratories, represents an exciting opportunity to form one of the most powerful multidisciplinary institutions of its kind in Europe, if not worldwide. As stated later in this report, the individual research groups at the Orsay laboratories are universally regarded as excellent and internationally well-connected, and so represent an excellent starting point for the merged unit. Some of the now separate but closely aligned scientific groups, such as nuclear, particle, and astrophysics theory, will result in a uniquely powerful, intellectually broad and diverse effort, which in combination with the Paris universities, will be immediately recognized as world leading. In other cases, developing brand new scientific efforts at the boundary between existing fields may offer even greater potential scientific payoff, if such diversity can be fostered and flourish in the merged unit. There may also be many opportunities, as suggested by several groups, for increased support of data analysis and interpretation thanks to enhanced collaboration with the data science and theory groups after the merger. These are just some of the possible important opportunities to take into account in developing the strategy and vision for the future direction of the merged unit.

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