



Pôle **P**hysique des **2I**nfinis et des **O**rigines

Les nouvelles propositions d'EquipEx

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Appels d'offres EquipEx: le retour

- Rappel: bon niveau de succès des propositions d'équipements d'excellence par les partenaires de P2IO
 - Andromède (IPNO, IAS, CSNSM, ICMMO, ...)
 - CILEX (LAL, LLR, ...)
 - THOMX (LAL, SOLEIL, Néel, Thalès, ESRF...)
- Projets sur la « liste supplémentaire » (qui n'en est pas vraiment une...) (26 projets classés):
 - CRYOMATRIX, mais aussi DESIR, ULISSE...



Contexte du deuxième appel d'offres

- Valérie Péresse (lors de ses vœux 2011):
 - Excellence des projets présentés lors de ce premier appel d'offres
 - L'ensemble des 78 projets classés par le jury international auraient mérité d'être financés
 - Une première série de 52 projets financés pour un total de 330 M€ (13 portés par le CEA, 7 portés par le CNRS, plus de la moitié des projets retenus portés par des laboratoires de la Région IdF)
 - Un deuxième appel d'offres, et d'autres (?) moyens attribués pour soutien à l'excellence des projets classés



Premier appel d'offres EquipEx

- Calqué en principe sur le calendrier du 1^{er} appel d'offres
- Calendrier attendu pour le deuxième appel d'offres:
 - lancement en juin
 - date limite de soumission des dossiers vers la mi-septembre
 - pas du tout de garantie que les projets classés à l'issue du premier appel d'offres bénéficient d'une quelconque priorité dans le deuxième appel d'offres
- Pas interdit bien sûr de proposer un projet complètement nouveau...



CRYOMATRIX

CRYOMATRIX : Plateforme nationale de fabrication et de test de détecteurs et microdétecteurs cryogéniques

The development of cryogenic detectors and microdetectors, as well as of arrays of them, is undoubtedly a high-level scientific endeavour and a key technology to first-class research in a variety of disciplines such as astrophysics, particle physics, measurement of radioactivity at very low level. It can open new observation techniques and thus irrigate other fields in need of such techniques, from medical to earth-and-planetary science.

The partner laboratories have a record of excellence in developing these detectors, and the creation of the CRYOMATRIX platform would provide them with powerful and up-to-date means of maintaining and further developing this record through the design, prototype manufacturing and testing of novel cryogenic detectors and arrays. As for the manufacturing of the developed products, the CRYOMATRIX platform has identified pre-industrial and industrial partners with well-proven expertise and capabilities.



CRYOMATRIX

The high-level structural equipment foreseen to be procured and installed on the platform is fully targeted to the purpose of the project. One could only regret that the geographical and institutional dispersion of this equipment will not permit to exploit full synergy. In spite of this, the governance and management structure appears well adapted to the efficient operation of the platform to serve the community of users. The proposed investment and operation

of the platform to serve the community of users. The proposed investment and operation budgets, as well as the time scale of the project are correctly estimated, and substantiated by offers from industrial suppliers.

On the whole, the proposal appears scientifically important, of high value to the participating institutes and well-targeted to its purpose.



CRYOCUBE

The project is ambitious and propose (WP1) the realisation of a test platform, mainly for the development of new particle physics. This is very important to maintain the position of French labs in the international competition. The participants have enough experience to manage correctly this project in association with Air Liquide.

An effort has been mentioned to develop complementarities with other fields in cryogenics but the connection with fundamental research in physics is a little weak.

The thirist point (WP3) is an opening to the other labs in the campus by including different test facilities for mechanical, magnetic and thermal measurements. This is certainly an important point which would follow the evolution of the different laboratories on the campus. The training part of the project is also important.

Although the leadership by CEA seems relevant, the cooperation with other laboratories belonging to Orsay University should be strengthened. This project, although good, is not enough completed to be funded with high priority.



PAM

- This proposal is rather convincing, by comparison with existing high intensity positron sources (Germany, The Netherlands, USA, Japan based on nuclear reactors and larger accelerators), as for instance the German Nepomuc facility is on average 2 times overbooked.

Moreover, the proposal calls for some improvements:

- The crucial element in the equipment is the moderator with an extrapolated efficiency of 10^{-3} . A time span of half a year (including study and specification) is allocated to achieve this. It can probably considered as too optimistic.
- In addition, there should be an alternative route (back up plan) if this particular item does not meet the required specifications.
- More generally, deliveries and milestones must be precised more clearly for a project the realization of which will extend over many years.
- The solidity of the multi-year financial projection should be ascertained in view of the previous remark.
- Justification of costs dedicated to “environment” (1,4 M€, i.e. 25% of the budget asked for the first phase) and coordination should be justified.



COGIS

This proposal clearly lays out the intended infrastructure and how this is going to be put in place. It seems to be worthwhile to establish such a new infrastructure and some impact for French science can be expected. Although the concept is in itself acceptable the methodology is not well described.

However, the proposal is rather vague on what it intends to achieve. The mere installation of infrastructure itself cannot be considered to have positive impact on science and industry in France. The opening of new scientific questions is insufficient.

The scientific part is not very clear and not very detailed. It should have been made more clear which new scientific questions are opened by bringing the infrastructure in place.

The scientific credentials of the participants are without doubt. However, it would be much more important to make clear the impact that the proposed infrastructure will have on the scientific work of the partners. Furthermore information about industrial impact and societal impact is missing or is not sufficient.

The quality of the management plan is good. The project management looks reasonable with a directors committee and a scientific committee. The coordination plan is sufficient.



XUV

- Bon projet...

This proposal is to build a synchrotron beam line dedicated to the requirements of calibrating detectors and optics for space-borne astrophysical observatories over a broad wavelength range. This will create a state-of-the-art facility that will be on par with the current existing facilities in Germany and the United States.

While this is a good proposal for a valuable resource, as construction of this facility would provide the French astrophysical community some leverage in calibrating future space-borne astrophysical missions. Furthermore, the group certainly has the capability and expertise to build and operate the proposed facility, and that their cost estimates are reasonable.



XUV

- avec plusieurs possibilités d'amélioration...

Nevertheless, in this very competitive Equipex program there were several aspects that did not give the proposal the highest score necessary. These weaknesses include:

- while the resource would clearly be useful for calibration of space-borne equipment it is not clear that innovations in optics or detectors would emerge;
- there are other comparable facilities in the US and Europe and the value of this investment in terms of the space mission demands is not clear;
- the proposed facility wouldn't be used very often for its primary mission, this facility could be idle for months or years at a time. The proposers state that there would be some other industrial or scientific interest in this beamline, but there are no specifics (or specific users) stated.
- the facility could be valuable, but it is not expected to open or address new scientific questions, for example to lead to new detector designs;
- the proposal is vague on technical details and how the beamline would be useful in calibrating space-borne hardware, more detailed (i.e. quantitative) discussion of the energy band, flux, energy resolution of the monochromators, stability of the beam, uniformity of the beam, and direct comparison with other facilities (both the proposers existing facilities and that of international competitors) would be a plus.



ULISSE

The jury considers the project ULISSE as a good one, presented in response to this call, and as such should have a good probability of being financed.

This proposal refers to the building of a new facility for underground research in fundamental physics, in interdisciplinary topics of environmental research, and much more. It is in fact an improvement and enlargement of an existing, successful lab.

It offers tremendous potential for international collaboration, it is interdisciplinary in nature and international in spirit. It is also built on the best tradition of France's astroparticle physics community, and one can think that the international astroparticle physics community will flock in to participate. The weakness of the project lies in its being related to the upgrading of an (excellent) existing facility and as such has lower original content than one could have hoped.



Autres projets

- DESIR (porté par GANIL): (Désintégration, excitation et stockage d'ions radioactifs), également classé ($\approx 60-70$)
- PH2ELICE (pas reçu le rapport): quid de ce projet ?
- nouveaux projets (JANNuS-II porté par le CEA/DEN, partenaires CSNSM et IPNO ?)
- **Attention à la possibilité (ou non...) de raccorder le projet à la SNRI (Stratégie Nationale de Recherche et Innovation)**
- Note: 52 projets acceptés reliés (parfois au chausse-pieds...) à la SNRI



En guise de conclusion...

- Les projets présentés au premier appel auraient sans doute **tort de ne pas se représenter** en tenant compte autant que possible des **commentaires transmis par l'ANR**
- Plusieurs projets portés par les partenaires de P2IO, et au moins deux autres projets coordonnés par GANIL et LSM, ont déjà montré leur excellence par leur classement dans les 78 projets listés par le jury international: **essentiel qu'ils se représentent** à mon avis
- **Préparation dès à présent** de la mise à jour des dossiers
- Rien n'interdit de présenter de **nouveaux dossiers**, surtout s'ils se raccordent bien aux **priorités définies dans la SNRI**
- **Ne pas être trop ambitieux sur le budget ($\leq \approx 8M\text{€}$)**