

INTENSITY

frontier

GDR-InF

Conseil de groupement.

Aoife Bharucha (CPT Marseille)

Francesco Polci (LPNHE Paris)



GDR-InF annual meeting, Arles, 05-11-2018

Why we asked for a GDR?



Theory and experiment need to come together in order to interpret results, combine bounds from different searches

The idea of establishing a GDR-InF emerged in few CNRS PEPS-PTI projects (Flagship measurements at LHCb, NouvPhysLHCb, Phenobas), followed by:

- April 2016: Brainstorming meeting
- August 2016: proposal submitted to IN2P3 and INP

Goals

- Reinforce relations between **theory and experiment**
- Facilitate **collaborations between labs**
- Favour the emergence of **common projects**
- Provide **visibility** for the French intensity frontier community
- Promote the **young generation** of physicists working in the field
- Discuss the **future experiments probing the intensity frontier**

The GDR-InF community is growing



2017:

- GDR-InF created on January
- 61 senior physicists
- 14 laboratories of IN2P3, INP, CEA
- Many students and postdocs

Allocated budget: 15000 euros

LISTSERV.IN2P3.FR (1 List)

List Names ▲	Subscribers
GDR-INTENSITYFRONTIER-L [Configure]	82 [View]

2018:

Allocated budget: 17000 + 1000 euros

List Name ▲	Subscribers
GDR-INTENSITYFRONTIER-L [Configure]	117 [View]

***New members welcome!
It is up to you to inform new people in your laboratory of the existence of the GDR-InF.
Invite them to subscribe to the mailing list!***

Working group conveners



In role for 2,5 years

The convenors coordinate the activities of the working groups, collect and discuss the proposals of events, participate to their organization.

This year, 4 meetings with the conveners (and many interactions via emails)

CP violation

[Christopher Smith](#), [Jean-Francois Marchand](#), [Stephanie Roccia](#)

Rare, radiative and semi-leptonic B decays, Charm and Kaon Physics

[Yasmine Amhis](#), [Diego Guadagnoli](#)

Heavy flavour production and spectroscopy

[Matthew Charles](#), [Emi Kou](#)

Interplay of quark and lepton flavour

[Ana Teixeira](#), [Justine Serrano](#)

Future experiments

[Mark Goodsell](#), [Stephane Monteil](#)

***Time to appoint new conveners and/or confirm previous ones.
We need proactive conveners!***

Conseil de groupement

The “conseil du groupement” plays an *advisory role* in both the *planning of the scientific programme* and the *general running of the GDR*.

It also *acts as a liaison between the GDR and the individual labs*.

- [Stephanie Roccia \(CSNSM\)](#)
- [Olivier Leroy \(CPPM\)](#)
- [Olivier Deschamps \(LPC\)](#)
- [Nazila Mahmoudi \(IPNL\)](#)
- [Stephane Lavignac \(IPhT, CEA\)](#)
- [Isabelle Ripp-Baudot \(IPHC\)](#)
- [Stephane T’Jampens \(LAPP\)](#)
- [Diego Guadagnoli \(LAPTh\)](#)
- [Marie-Helene Schune \(LAL\)](#)
- [Christopher Smith \(LPSC\)](#)
- [Sebastien Descotes-Genon \(LPT\)](#)
- [Mark Goodsell \(LPTHE\)](#)
- [Jérôme Charles \(CPT\)](#)



We should add LPC Caen!
Are you willing to be reconfirmed? If not, please find a person to replace you.

Some tools

GDR-InF

- **Logo: INTENSITY**

frontier

GDR-InF

Decided after a nice contest.

*Please, **put the logo on the websites/indico pages** of events supported/organised by the GDR-InF.*

- **Mailing list: GDR-INTENSITYFRONTIER-L@IN2P3.FR**

At the moment still used in a limited way. Do not hesitate to use it to announce:

- *events of interest for the community*
- *jobs*
- *any other interesting topic for the GDR-InF community*

Please invite your (new) students/postdocs/group members to sign up!

- **Website: <http://gdrintensityfrontier.in2p3.fr/>**

Constantly updated, with latest news and links to previous and past events.

- **Dedicated indico area: <https://indico.in2p3.fr/category/731/>**

Check regularly our website!



GDR-InF: Physics at the Intensity Frontier

[Latest News](#) [Physics](#) [Working Groups](#) [Programme](#) [Contacts and Links](#)



Latest News!

The [École de Gif on Heavy Flavour physics](#) will be held this year at Clermont Ferrand from the 10th-14th September 2018.

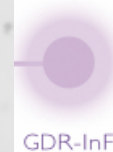
The [Annual meeting of the GDR-InF](#) will be held this year in Arles from the 5-7th November 2018.

Physics at the Intensity Frontier

Particle physics at the intensity frontier involves probing new physics (NP) by increasing the the experiment's luminosity rather than it's energy scale. The intensity frontier could provide signs of NP in two ways. The first one is measuring SM processes for which theoretical predictions with uncertainties well under control exist: observing a significant discrepancy between the experimental measurement and the prediction would be the sign of NP. This technique is often applied to study processes which are mediated at leading order by loop diagrams. In such diagrams, yet undiscovered particles, with masses beyond the energy of the collisions, could intervene, modifying the rates and the properties of the decay respect to the SM predictions. These measurements need to be extremely precise, so they require a large quantity of data. The second way is searching for processes which are hugely suppressed or forbidden in the SM, and therefore a measurement automatically signifies NP. This could

Check it out and send us comments if you have!

Check regularly our website!



Relevant Documents

[ESPP input from the GDR-InF](#)

For any information about the GDR, or if you are interested in joining it or proposing a workshop please contact [Francesco Polci](#) (Director) or [Aoife Bharucha](#) (adjoint Director)

Previous events

[Workshop in Marseille on b to s transitions, October 2015](#)

[Workshop in Paris on LFV/LFUV, November 2016](#)

[GDR-InF Kickoff meeting, Institut Henri Poincaré, March 29-31 2017](#)

[Rencontres de Physique des Particules, Marseille April 24-26 2017](#)

[The 2nd LHCb open semitauonic workshop on Nov 13 and 14 at LAL](#)

[Journée SHIP/Physique du secteur caché, Wednesday October 11, 2017, LPNHE](#)

[GDR-Intensity lectures: from theory to experiments and everything in between, "LF\(U\)V in B decays", Paris, 26th to 27th October 2017](#)

[GDR-InF workshop: The future of the intensity frontier? CERN, 1st-2nd February 2018](#)

[GDR-Intensity lectures: from theory to experiments and everything in between, "LF\(U\)V in B decays-II" Paris, 13th-14th February 2018](#)

[Workshop on the Strong CP puzzle and Axions, organised by Christopher Smith, Diego Guadagnoli, Guillaume Pignol, Jeremie Quevillon and Stephanie Rocca, Grenoble, 14-16 May 2018](#)

[Workshop on multibody charmless B-hadron decays, organised by Eli Ben-Haim and Mat Charles, Paris, 6-7 June 2018](#)

[Workshop on singly and doubly charmed baryons, organised by Emi Kou, Mat Charles, Jean-Marc Richard, Patrick Robbe, Yanxi Zhang, Paris, 26-27 June 2018](#)

[GDR Intensity Frontier Lectures on Vcb, with lectures by Marcello Rotondo and Guilia Ricciardi, Paris, 2-3 July 2018](#)

Check it out and send us comments if you have!

Check our indico area



indico


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GDR Intensity Frontier

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novembre 2018

 05 nov. - 07 nov. [GDR-InF annual workshop](#)

octobre 2018

 11 oct. [Reunion des conveners](#)

septembre 2018

 27 sept. [Reunion des conveners](#)

All events/meetings should be listed/linked from here

What are we doing?

Trying to establish few formats:

- dedicated to our aim to bind the community
- complementary to traditional workshops/conferences

1) Intensity lectures.

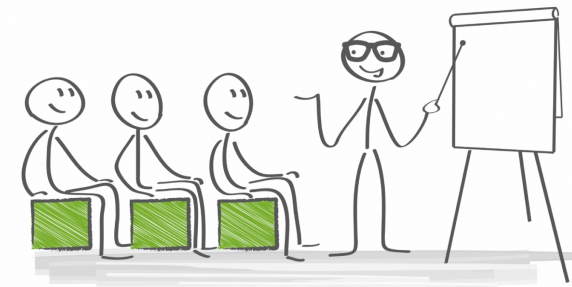
Lectures on a blackboard, theory and experiment alternated, recorded, possibly published

2) Intensity brainstorming

Following the model: white cards + roundtable

3) Topic workshops

To sit down and work on a specific subject



4) Supported workshops

Not directly organized by GDR-InF, but of interest for our community

5) The general GDR meeting

To report on the activities, present the ongoing work in our community, hear from external speakers on topics/experiments on which we are not directly implied

Still keeping all doors open to any other needed format!

Activities in 2017



Events organized by the GDR-InF:

- [GDR-InF Kickoff meeting,](#)
Institut Henri Poincaré (Paris), March 29-31
- [GDR-Intensity lectures: from theory to experiments and everything in between, "LF\(U\)V in B decays"](#)
Institut Henri Poincaré (Paris), October 26-27

Participants

72

26

Events supported by the GDR-InF:

- [The 2nd LHCb open semitauonic workshop](#)
LAL (Orsay), November 13-14
- [Journée SHiP/Physique du secteur caché](#)
LPNHE(Paris), October 11

Remarks from Dec 2017:

- *In supported events we give a contribution to invite speakers.
The purpose is to profit of already existing/planned events, avoiding to create duplicates*
- *This was our first year, we had to setup things.*
 - *We need to make sure that all of us **keep in mind that the GDR-InF exists** and can provide support*
 - *We discovered that very concrete plans need to be established well in advance
(lots of events in HEP, better use of budget, increase of attendance,...)*

A 2018 full of events organised by the GDR-InF!



Participants

[GDR-InF workshop: The future of the intensity frontier?](#)

Geneve, CERN, February 1-2

40

[GDR-Intensity lectures: "LF\(U\)V in B decays II"](#)

Paris, IHP, 13th-14th February

18

[The strong CP puzzle and axions \(+lectures\)](#)

Grenoble, LPSC, 14th-16th May

45

[Workshop on multibody charmless B-hadron decays](#)

Paris, LPNHE, 6th-7th June

20

[Workshop on singly and doubly charmed baryons](#)

• Paris, LPNHE, 26th-27th June

?

[GDR-Intensity Lectures: « Vcb »](#)

Paris, IHP, 2nd-3rd July

12

[GDR-InF annual workshop](#)

Arles, 5th-7th November

40

and [The European Strategy For Particle Physics](#)

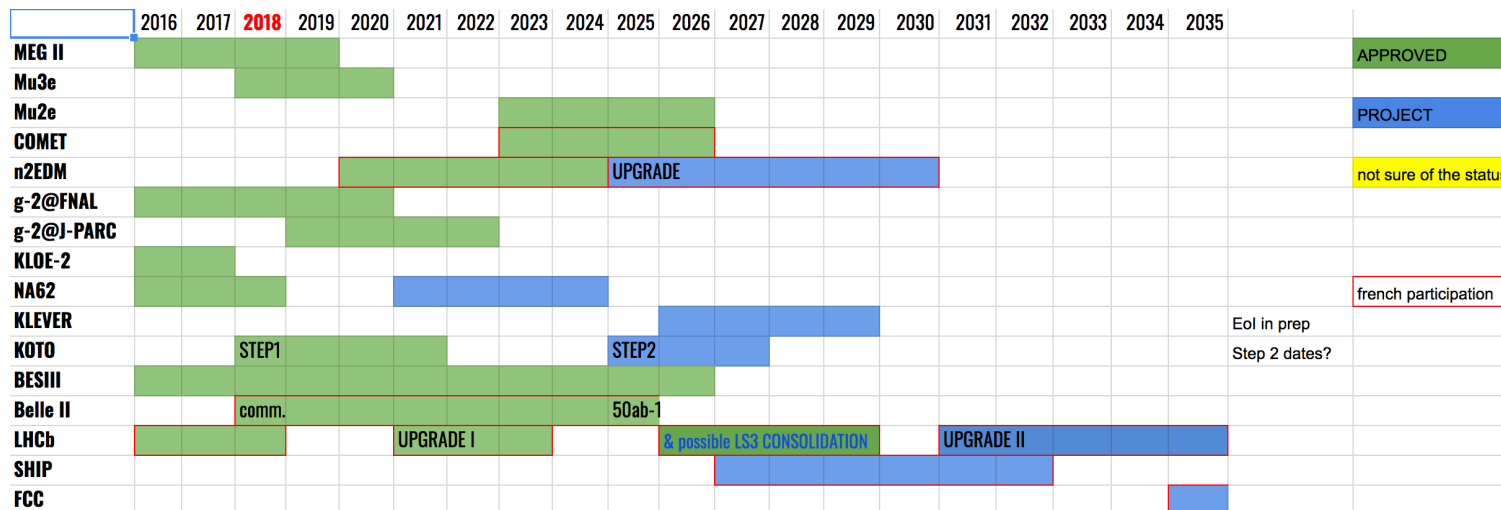
(document submitted end of August after 2 vidyo meetings and lots of email interactions)

Note: students can acquire credit for their ED when attending lectures!

GDR-InF production



- [Minutes of Cern meeting on future experiments](#)
(It would have been ideal to have minutes for all the workshops)
- [Future experiments timeline.](#)
- Lectures videos.
- Publication of the lectures in paper/book: ongoing...
- [ESPP document](#)



Additional comments



- **Anyone can make proposal**, either to Aoife and Francesco or to the conveners. The proposals are discussed in the conveners meeting.
- **Anyone can volunteer to organise events.**
- **Let's try to coordinate when organising events** of interest for the GDR-InF community, in order to avoid unneeded duplicates and increase synergy. (providing an early calendar can help here)
- **Let's improve in GDR-InF « scientific production »** (lectures recording, lectures publication, reports, etc...)

Some ideas of other things we could do:

- **public calendar of events related to GDR-InF**
- **Digest weekly/monthly mail with articles of interest for the community?**

How should the GDR-InF evolve?



- Two years out of five have passed. We have learned lessons, now it is time to refine the shape of the GDR-InF to profit of it a maximum
- We can do whatever we want with our GDR: it is a very open structure with no predefined format
- Possibly, we should not reduce it at a meeting planner utility
- It is a fact that people are busy: what is needed is to work rather than preparing/giving talks
- It is a **Groupement De Recherche**: shouldn't we push actively to have common projects to work on together? Should this be the focus in 2019? If yes, how can we realize this?
- The working groups are really not reflecting the current focus of the activities in the field in France: how should we re-organize them?

Thank you and now let's discuss!