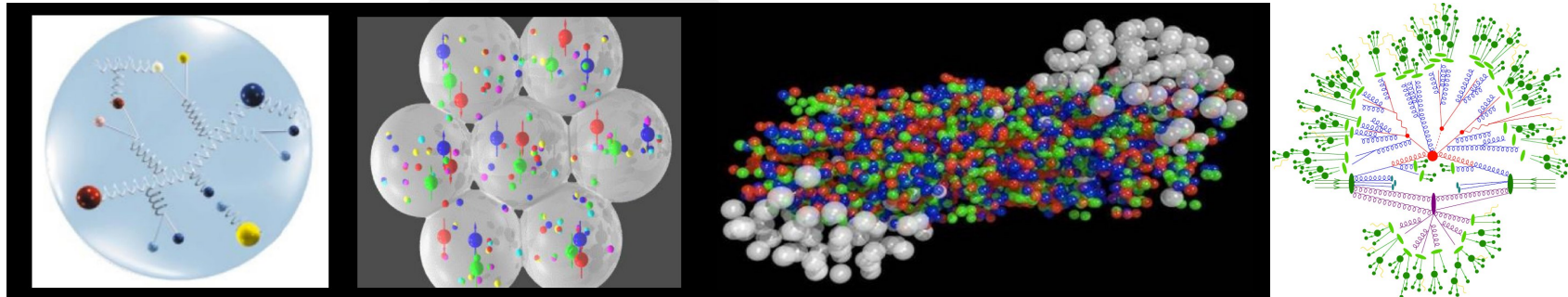


# Transverse group QCD (Theory + PHE poles)

Conveners : Jean-Philippe Lansberg (Theory pole)

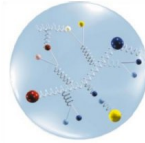
Laure Massacrier (PHE pole)



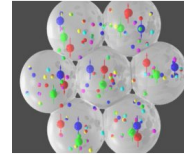
## List of QCD related projects at IJCLab (adapted from HCERES 2019)

A common goal: to understand QCD in its different regimes from the confinement of quarks and gluons inside ordinary matter to Quark Gluon Plasma formation under extreme conditions

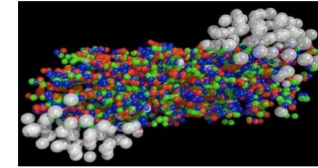
■ Main activities of the teams



Nucleon and hadron structure



Medium effects



Quark Gluon Plasma

HADES

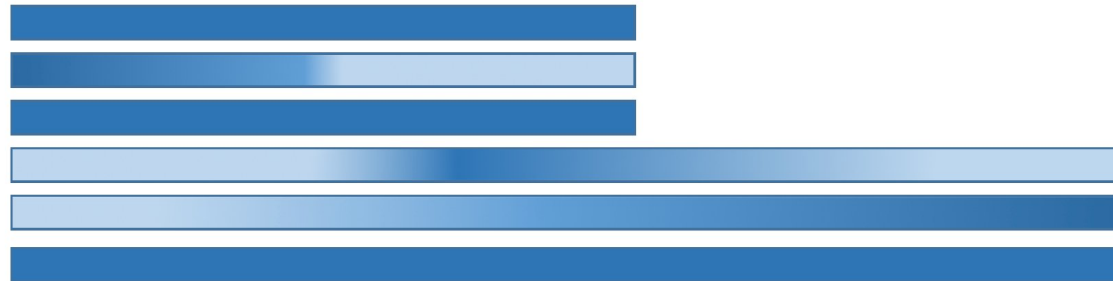
JLab

EIC

LHCb HI

ALICE

Fixed-Target@LHC  
 (AFTER/ALICE-FT/LHCb-FT)



Also encompassed in the group scope: - LHCb (quarkonium production & spectroscopy),  
 - ATLAS (QCD at high  $p_T$ )...

List of research topics (from HCERES 2019)



## QCD

- Effective theories of QCD with applications (ChPT, NRQCD, HQET, SCET)
- Lattice QCD
- Tomography of hadrons and physics of spin [(n)PDF, GPD, TMD]
- Perturbative QCD
- Unitarisation/saturation of QCD at high energies
- Modelling of QCD in soft regime

Topics to be pursued:

- Automation of perturbative QCD computations
- Interface with Monte Carlo simulators
- Elaboration of physics cases for future experimental projects
- Global data-theory analyses

- Make an **inventory** of the QCD related activities at IJCLab (we first need to know each others and each others' works!)
- Animate discussions and **scientific exchanges** among experimental projects and between experimental projects and the theory community
- Participate to the emergence of **new transverse research activities**, strengthen the existing ones
- Help to **build the future of QCD** research area at IJCLab (LHC upgrades and FT, EIC, FAIR, new theoretical developments)
- Increase the success rate of **TH/EXP funding requests** submitted to funding agencies
- Make connection with the **GDR QCD** [renewed with extended physics scope]

- Discuss the requests for **visitors/workshops** on the theme (the group will have a small budget though)
- Depending on the motivation/investment of the group members: a place to discuss/coordinate and help to prepare **common funding requests** to agencies (labex, ANR, ERC...) (<-> STIRI)
- Organization of “**café QCD**” each two weeks (Thursday at 14h (?)) where the publication of one of the group members is discussed (priority will be given to PhD and postdocs)
- Action for **students** :
  - Poster presentation once per year
  - Encourage transverse internship from L3 to Master
- Creation of a **mailing list** (DONE!) : [QCD-IJCLAB-L@IN2P3.FR](mailto:QCD-IJCLAB-L@IN2P3.FR) [registration on a voluntary basis. Please subscribe if you want to be part of the QCD transverse group!]
- Creation of a **webpage** for the group on the IJCLab site
  - Including the scientific **scope** of the group
  - Listing of the **members** of the group with a summary of their activities related to QCD
  - A page with the **publications** of the group members
  - A page for the **tools** developed in the group (eg NLO access)
- A **database** of the **workshop/seminars** related to the thematics and available online

[actions in common with GDR QCD]

Any inputs/feedbacks/further suggestions are welcome!

First “Café QCD” foreseen (On 2nd and 4th Thursdays of the month @ 14h, starting on April 22nd (?)):

1. F. Ceccopieri: <http://arxiv.org/abs/arXiv:2103.13480>
2. Y. Yedelkina : <http://arxiv.org/abs/arXiv:2009.08264>
3. C. Van Hulse: <http://arxiv.org/abs/arXiv:2012.14161>
4. C. Flore: <https://nloaccess.in2p3.fr/>
5. ....

If you wish to be associated to the activities of the GT-QCD, we ask you to register to the list by following this link:

<https://listserv.in2p3.fr/cgi-bin/wa?SUBED1=QCD-IJCLAB-L&A=1>

Once you arrive on the web page, fill your full name (first name and last name), use your ijclab mail address (firstname.lastname@ijclab.in2p3.fr) and click on the Subscribe(QCD-IJCLAB-L) button

**QCD-IJCLAB-L@IN2P3.FR**

This screen allows you to subscribe or unsubscribe to the QCD-IJCLAB-L list. To confirm your identity and prevent third parties from subscribing you to a list against your will, an email message with a confirmation code will be sent to the address you specify. Simply wait for this message to arrive, then follow the instructions to confirm the operation.

Alternatively, you can update your subscription interactively by [logging in with your LISTSERV password](#).

**Name:**

**Email Address:**

**Select List:**

**Subscription Type**

Regular [NODIGEST]

Digest (traditional) [NOMIME DIGEST]

LISTSERV Archives  
QCD-IJCLAB-L Home

Having a list of persons interested in participating to the group will help us define the scientific contours of this transverse activity. **The registration to the mailing list will be equivalent to the registration to the GT. It is important that postdocs and PhD students also register.**

Note also that anybody would be able to leave the GT by a single click. Finally, please note that one can belong to different GT (for instance QCD and Flavour) without any problem.

Mail sent on to PHE and Theory lists on 18/03 : already 24 people registered (Thanks!)

**Do not hesitate to contact us to discuss your QCD topics of interests and make suggestions on the activities of the group! This is YOUR group.**

**Looking forward to stimulating exchanges between our various communities!**

Jean-Philippe Lansberg : [Jean-Philippe.Lansberg@ijclab.in2p3.fr](mailto:Jean-Philippe.Lansberg@ijclab.in2p3.fr)

Laure Massacrier : [laure.massacrier@ijclab.in2p3.fr](mailto:laure.massacrier@ijclab.in2p3.fr)