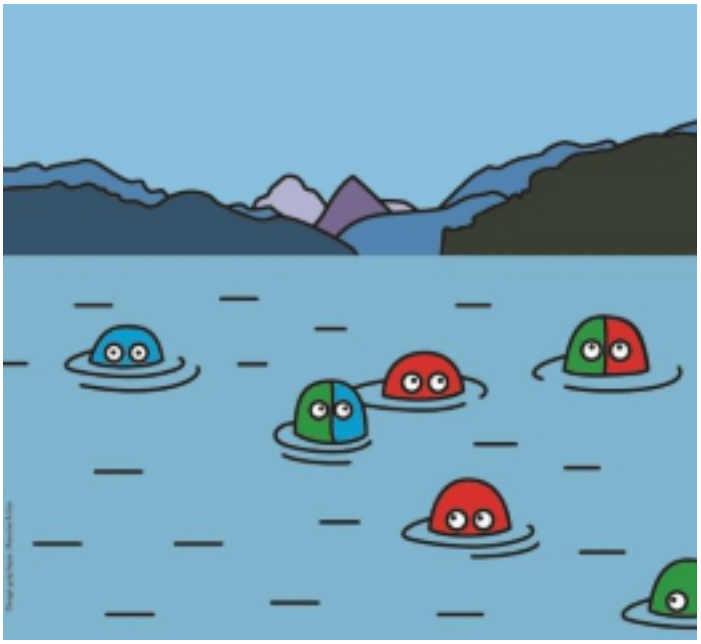
HF2022: Heavy Flavours from small to large systems



lundi 3 octobre 2022 - vendredi 21 octobre 2022

Institut Pascal

Programme Scientifique

The programme will span over 3 weeks.

During the first 2 weeks, we will address two topics per day among those listed below with 2 oral presentations per day. The schedule will be finalized later, the rough organization is:
The discussions during the first week will be focused on the production mechanisms, fragmentation, coalescence and hadronization in vacuum, the characterization of the initial state of the collision and new observables.
During the second week, scientific discussions will be around energy loss, coalescence and recombination in the medium, benchmarking heavy flavour and quarkonium models to extract medium parameters, bridging the gap between small and large systems.

During the third week, we will have a workshop aiming at summarising our discussions as well as touching upon connected topics.

Energy loss of heavy quarks

Status and prospects of modeling and description of open heavy flavour and quarkonia production in medium
What do open HF and high pt quarkonia measurements tell us ?
Evaluation of the medium transport properties: status

Coalescence and recombination in the medium

Is there an onset of suppression ?
Can other states help? : Bc, Upsilon…

Benchmarking heavy flavour and quarkonium models to extract medium parameters

Coherent description of open heavy flavour and quarkonium modeling in medium to characterize the medium
Model status
Unifying constraints for open and hidden heavy flavour production

Characterizing the initial state of the collision

Characterization of the initial state of the collision
Photoproduction (UPC, PC) as a probe of nuclei structure;
GPDs, PDF and TMDs;
Saturation, non-linear effects and BFKL dynamics;
Collectivity: do we understand its origin?

Bridging the gap between small and large systems

Can particle production in small and large systems be described within a model ?
Measurements as a function of charged-particle multiplicity (prospects, bias, limitation)
Modeling the events from pp to AA.

Production mechanisms in vacuum: data vs. theory uncertainties

Exploiting data to constrain model calculations
cross sections, ratios, feed-down effects

Fragmentation, coalescence and hadronization in vacuum

Understanding and modeling particle production in vacuum: fragmentation, coalescence and hadronization.
Meson to baryon production in all systems
Can other excited states help? X(3872)...

New observables

Recent or new ideas and measurements
associated particle production (DPS, TPS, correlations)
jets (dead-cone, fragmentation, de-clustering)