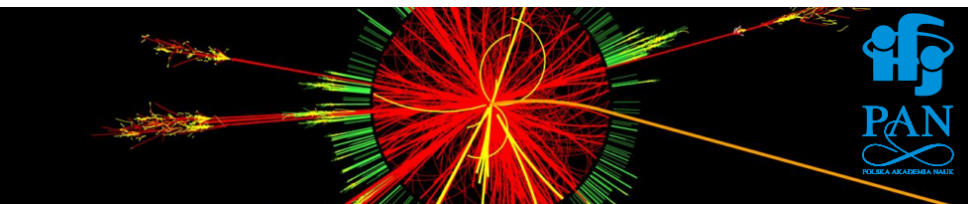


# Particle Physics Summer Student Programme

## Project Assignment

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**Institute of Nuclear Physics Polish Academy of Sciences**

**7<sup>th</sup> July 2022**

IFJ PAN PPSS Programme – Project Selection

## Access:

- room 0223 (coffee, microwave, fridge): access code (1938#)
- room 0302: access code (1937#)
- other rooms: keys

## Keys and rooms – rules:

- you **must not** take keys outside IFJ PAN,
- all keys must be stored grey metal box in room 0223,
- last person leaving the room should lock the doors and leave the keys in room 0223,
- some rooms are empty, others were kindly been made available by IFJ PAN personnel:
  - do not re-arrange things in the room by yourself,
  - do not use nor take things which does not belong to you.
- try to keep room and desks clean.

## **Coffee machine:**

- ask for the instructions before the first usage,
- keep the machine clean,
- empty drawer when full (also clean it), pour water if empty,
- payment – 'money mug' (0.5 PLN / coffee).

## **Fridge:**

- do not take food nor drinks which do not belong to you,
- keep fridge clean.

- 1 Study of semi-inclusive characteristics of B decays at Belle experiment**  
**Supervisor:** dr Jarosław Wiechczyński, room 0212, wiechczynski@belle2.ifj.edu.pl  
**Students:** Ruken Ciftci, Gabriela Szczepanik, your room: 0112
- 2 Study of Lepton flavour violating decays in Belle2**  
**Supervisor:** mgr Junaid Ur Rehman, dr hab. Andrzej Bożek<sup>1</sup>, room 0212, junaid.rehman@ifj.edu.pl, bozek@belle2.ifj.edu.pl  
**Students:** Xavier Wang, Bartłomiej Brudnowski, your room: 0112
- 3 Measurements of the depletion voltage of the SOI pixel detector**  
**Supervisor:** dr inż Piotr Kapusta, room 0113, Piotr.Kapusta@ifj.edu.pl  
**Students:** Nazmul Hasan Shadhin, Karolina Papacz, your room: 0113
- 4 Particle showers in ATLAS Forward Proton detectors**  
**Supervisor:** dr Maciej Lewicki<sup>2</sup>, room 0204, maciej.piotr.lewicki@cern.ch  
**Students:** Patrycja Malinowska, Aneta Bień, your room: 0204
- 5 Elastic scattering analysis in 1D and 2D**  
**Supervisor:** dr Rafał Staszewski, mgr Ferhat Ferhat Öztürk, room 0204 → 0209 (from 11/07), rafal.staszewski@ifj.edu.pl, ferhat.ozturk@ifj.edu.pl  
**Students:** Agata Bijak, Julia Koczorowska, your room: 0210
- 6 Exploring b-jet properties in Pb+Pb collisions with the ATLAS experiment at the LHC**  
**Supervisor:** prof. dr hab. Adam Trzupek, room 0217, Adam.Trzupek@ifj.edu.pl  
**Students:** Aleksandar Gecic, Ricardo Parra Payano, your room: 0220
- 7 Three approaches to B-jet identification in ATLAS experiment from easy to hard**  
**Supervisor:** dr Dominik Derendarz, room 0218 → 0206 (from 11/07), dominik.derendarz@ifj.edu.pl  
**Students:** Filip Maxin, Szymon Slawinski, your room: 0218

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<sup>1</sup>Contact Junaid.

<sup>2</sup>At CERN until the end of this week, contact via e-mail.

- 8 Detection of cosmic-ray photons**  
**Supervisor:** dr hab. Krzysztof Woźniak, room 0206, Krzysztof.Wozniak@ifj.edu.pl  
**Students:** Nikolaos Vassakis, Konstadinos Papadhopuli, your room: 0302
- 9 Heavy-ion collisions at the LHC with the ATLAS detector**  
**Supervisor:** dr hab. Krzysztof Woźniak, room 0206, Krzysztof.Wozniak@ifj.edu.pl  
**Students:** Szymon Janur, Alicja Plachta, your room: 0302
- 10 Search for cosmic-ray ensembles signatures with CORSIKA simulations**  
**Supervisor:** dr Oleksandr Sushchov, room 0306, oleksandr.sushchov@ifj.edu.pl  
**Students:** Satvik Arya, Konstantinos Papadimos, your room: 0322 (to be confirmed)
- 11 Reconstruction of particle tracks using Deep Neural Networks**  
**Supervisor:** dr hab. Marcin Wolter, room 0219, Marcin.Wolter@ifj.edu.pl  
**Students:** Priyanshu Gupta, Clarisse Prat, your room: 0219
- 12 Study of neutrino interactions in the T2K experiment**  
**Supervisor:** dr Tomasz Wąchała, room 0319, Tomasz.Wachala@ifj.edu.pl  
**Students:** Karol Sowa, Harsh Aggarwal, your room: 0319
- 13 Space-time evolution of charged muons interacting with spectators in heavy-ions collisions**  
**Supervisor:** dr hab. Katarzyna Mazurek, room 3213, Katarzyna.Mazurek@ifj.edu.pl  
**Students:** Mateusz Andrzejewski, Ho Sang Lee, your room: discuss with tutor
- 14 Search for critical signatures of strongly interacting matter in heavy ion collisions in SHINE @ CERN SPS**  
**Supervisor:** dr Nikolaos Davis, room 0316, nikolaos.davis@ifj.edu.pl  
**Students:** Georgios Alexandris, Eleni Papadimitriou, your room: 0316
- 15 Exploring Jet quenching in relativistic heavy ion collisions**  
**Supervisor:** dr Souvik Priyam Adhya<sup>3</sup>, room 4206A, souvik.adhya@ifj.edu.pl  
**Students:** Ariadna León Quirós, Nadzieja Śniegocka, your room: 4309 (to be confirmed)

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<sup>3</sup>On conference until 13/07, contact via e-mail.

- You are expected to cooperate → do project together, help each other.
- Your tutor is to help and guide you → not to do the tasks instead of you → try to search for the answers by yourself (a lot of things, especially in programming, are already solved and described → “use Google”).
- Your tutor (although may be in the same room) is not expected to be 100% available for you → tutors are primarily doing their “scientific job”; I would expect that they will devote ~20% of their time to help you with the project.
- Projects are defined by tutors and should be done accordingly to their vision; of course projects may evolve in various directions → if you have ideas feel free to discuss them with tutors keeping in mind that the final tasks should be done accordingly to their proposals.
- *May I change the project?* → no, projects are assigned and change is not possible.
- *But I am a theorist / experimentalist and got topic from experiment / theory* → try to learn as much as possible, gain new experience during the project; usually good theorists have knowledge about experiments and good experimentalists know theory.
- *But the project is not interesting* → this is certainly not true! Try to learn as much as possible during the project. Since this is 10th edition of PPSS, we can tell you that it already happened that students which were not convinced about given project at the beginning acquired unique skills when doing the projects which helped them in getting very good scientific offers (ask during the conference!). Simply speaking, your tutors have quite a lot of experience and know what is really needed in modern physics.

- Students with signed agreements should apply for access cards this.
- Procedure:
  - go to cash desk (room 4603; Anna Surga; VI-th floor) to pay 20 PLN of deposit; receive confirmation; cash desk is opened Mon.-Wed.-Fri. between 8:00 and 14:00,
  - go to room 5303 (mgr Zofia Zięborak) with confirmation to obtain the card.
- On the last day (Friday, 29/07/2022) return card to room and go to cash desk with confirmation to claim back your 20 PLN of deposit (note – until 14:00 (!)).

**Questions?**