



- ATLAS

- ACTS: A Common Tracking Software
  - 1 physicist, 1 PhD student and 3 software engineers involved including machine learning at IJCLab
  - Starting activity at IFJ PAN with 2 persons
- Could discuss prospects for HL-LHC

- Belle2

- DAQ:
  - Both labs were collaborating on the DAQ upgrade using PCIe40 boards
  - Need to clarify what are the plans for the upgrade of the pixel detector for LS2 (~2027)
    - The current software engineer at IFN PAN retired and would need to be replaced
- Physics:
  - Discussion between experimentalists at IFJ PAN and Emi Kou (theorist) at IJCLab
    - Inclusive  $B \rightarrow D_s X$  differential branching ratio measurement at Belle II
    - Phenomenological study of New physics search with  $B \rightarrow D^* \tau \nu$  decay
    - New discriminator for Lepton Flavour Violation process  $B \rightarrow h \tau l$  ( $h=\pi, K$ )

- FCC

- Feasibility studies could be considered and encouraged due to the low manpower on both side

## Some preliminary ideas of collaboration and common interests with the Astroparticles, Astrophysics et Cosmology pole:

**AugerPrime:** the teams could collaborate through a common involvement in the WG on the analysis of first data

**Gravitational Waves:** discussions on modelling and data interpretation for mergers of compact stars could be further investigated between the 2 labs

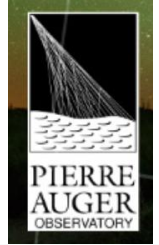
**CREDO:** interest to initiate a discussion with FINK to benefit for the multi-messenger environment

**AGN studies:** we could investigate further the need for FINK in the Krakow's team

**CTA:** common interest in the study of Pevatrons, and Extra-Galactic science (longer term ?)

### Next steps:

- For AugerPrime, direct contact will be made with the Krakow's team
- Organise a discussion with the Gravitational Wave team
- Organise a discussion with FINK



Back Up

# Belle II

## Analysis collaboration

- **Inclusive  $B \rightarrow Ds$  X differential branching ratio measurement at Belle II**

- ✓ Expertise IFJ PAN: Belle II analysis

- ✓ Expertise IJCLab: Phenomenology

## Potential hardware collaboration

- **DAQ system for upgrade of Belle II pixel detector (already collaborated!)**

- ✓ Expertise IJCLab: In charge of Belle II global DAQ upgrade + France is a candidate for VXD upgrade

- ✓ Expertise IFJ PAN: Participation to the DAQ upgrade + Software development

## Physics discussion points (many but some examples)

- Phenomenological study of New physics search with  $B \rightarrow D^* \tau \nu$  decay

- ✓ Expertises: Both groups are developing the MC tools (hot topic in flavour physics !)

- New discriminator for Lepton Flavour Violation process  $B \rightarrow h \tau l$  ( $h=\pi, K$ )

- ✓ Expertises: Both groups are working to improve the semi-leptonic tagging!