

Belle2NewPhy

Project partners
University of Strasbourg, Karlsruhe Institute of Technology
Project duration / Awarded funding
01.03.2019 – 30.04.2021 / 24.307 €
Short description of the project
In this project in particle physics, students examine in jointly supervised MSc theses the extent to which newly developed tracking detectors will provide new insights if they are incorporated into the international “Belle II” experiment in a future upgrade. In addition to particle beam experiments in international research laboratories in Germany, expert talks will also be held in Tsukuba (Japan), where the experiment is hosted.
Concrete implementation of the project (What was the funding used for?) (max. 500 characters (including spaces))
<ul style="list-style-type: none"> • 13 months of Master-2 internship grants for the following co-supervised students: T. Fillinger, I. Tsaklidis, A. Thaller. • PhD funding for F. Metzner and P. Ecker at KIT. • Meetings at KIT in April and May 2019. • Participation to the Belle II upgrade workshop at CERN in July 2019. • Participation to the Belle II Tracking meeting in Prague in Jan. 2020. • Meeting in Tsukuba in Feb. 2020. •
Project result(s) and continuation of collaboration (max. 500 characters (including spaces))
<p>Results of our performance study of the upgraded tracker are key inputs to design the detector and were included in an Expression of Interest submitted to the Belle II international collaboration in Feb. 2021. A scientific committee is being evaluating it to make a decision about the upgrade.</p> <p>The novel algorithm developments based on deep learning show very encouraging results to improve the experiment sensitivity to new physics. They will be published and pursued jointly by KIT and Strasbourg.</p>

Further information (links, articles, photos)

- Presentation by Tristan Fillinger (Master-2 student) at the annual workshop of the Groupement de Recherche „Intensity Frontier“, 28 September-16 October 2020, see: https://indico.in2p3.fr/event/22193/contributions/86009/attachments/60143/91691/GdR-Tracking_Performance_Belle2.pdf
- Presentation by Tristan Fillinger (Master-2 student) at the Belle II France meeting, 29 November 2020, see: https://indico.in2p3.fr/event/19803/contributions/77168/attachments/56244/91690/vtx_upgrade_b2fr.pdf
- Presentation by Arthur Thaller (Master-2 student) at the IN2P3-Irfu Machine Learning workshop, 16-17 March 2021, see: https://indico.in2p3.fr/event/22938/contributions/93158/attachments/63073/86647/graFEI_16_03_at_v2.pdf
- See the paragraph “: A New View on Particle Decays” in: <https://blogs.nvidia.com/blog/2020/12/08/nvidia-a100-gpu-automate-particle-physics/>