Nuclear Physics

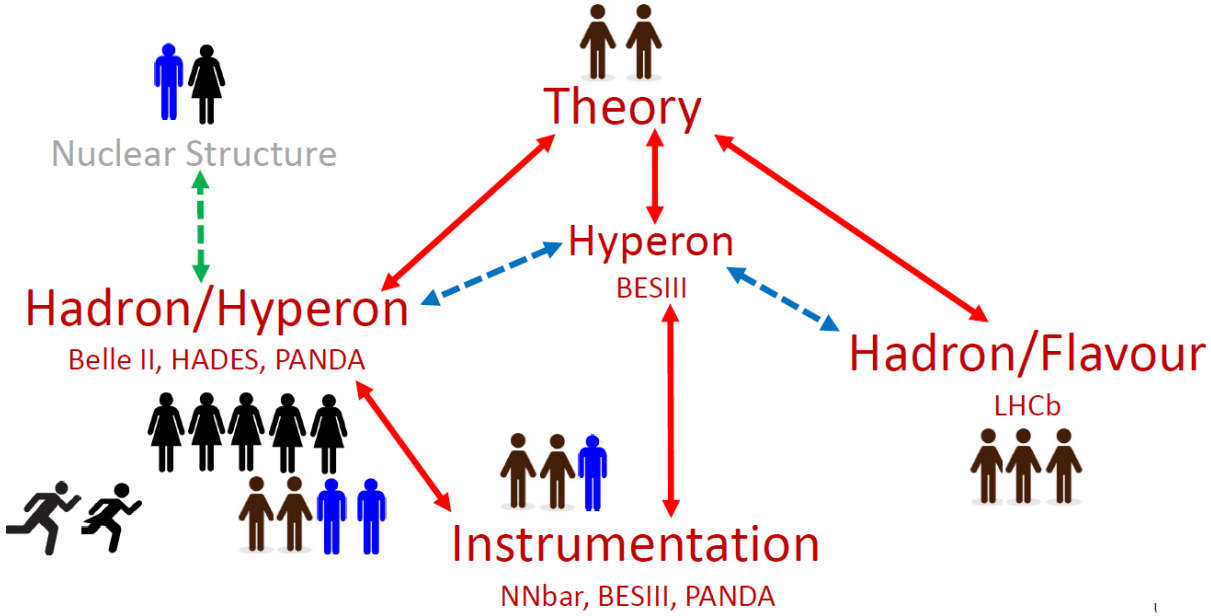
Staff (2024):

- Program professor (PAP): Karin Schönning
- Faculty members: Stefan Leupold (prof.), Magnus Wolke (UL), Lars Eklund (prof.)
- Ph.D. students: 5 (3+2, present: Malin Bohman)
- Postdocs: 3 (2+1, present: Bianca Scavino)
- Researchers (permanent): 3 (present: Michael Papenbrock)
- Research engineers: 1 (present: Pawel Marciniewski)

Research focus

How does the strong interaction form visible matter and generate its mass?

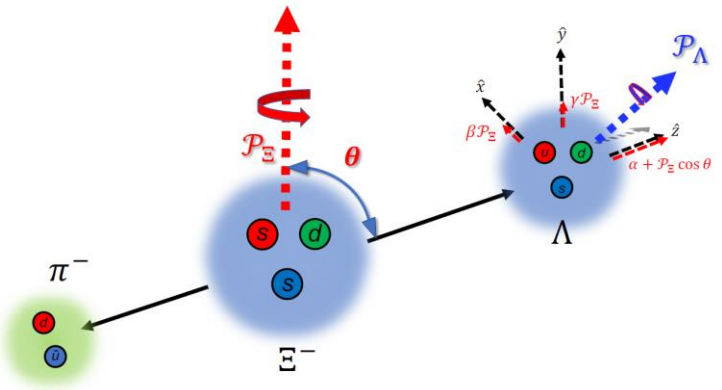
Why is there so much more matter than antimatter in the universe?



Main Research Areas		% of program	FTE Faculty	Type
1	Experimental hadron and hypernuclear physics (Schönning)	45%	1	Basic
2	Experimental flavour and hadron physics (Eklund, Wolke)	35%	2	Basic
3	Theoretical hadron physics (Leupold)	13%	1	Basic
4	Experimental nuclear structure (Nyberg, not continued)	7%	Senior	Basic

Key enablers for research

- Ability to initiate and lead international flagship activities
  - Within BESIII, PANDA and its predecessor at HADES
- Excellence funding
  - 1 KAWx, 1 KAW Scholar, 3 VR, Infrastructure (VR-RFI, EU)
- Thriving PhD students & postdocs
  - Multiple awards and leadership positions
- International collaborations & leadership
  - Infrastructures, EU partnerships, NuPECC LRP
- Faculty funding (FFF)
  - Necessary for long time scales that characterize the field
- New program organisation
  - Active, bottom-up approach to solve problems



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Program priorities

Prio 1 (program): Femtoscale investigations of matter and antimatter with Belle II and PANDA

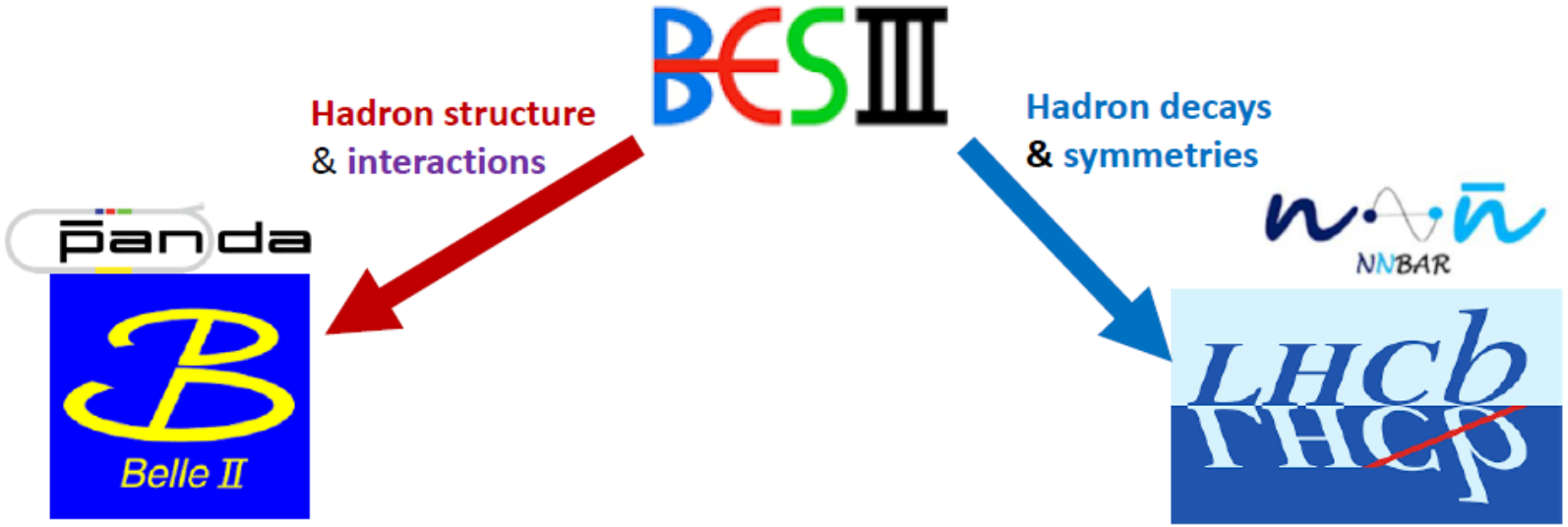
Large group thanks to ample external funding → one additional lecturer needed.

Prio 2 (department): Targeting a new era of hyperon physics with deep learning

Within the department initiative *AI4Physics*. Strengthens connection instrumentation ↔ physics&software.

Prio 3 (faculty): High-precision searches for the mechanisms of Baryogenesis in the early universe

Within the strategic area of the TekNat faculty *The universe and mathematical physics*.



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