Department of Fundamental Research (DBP) in 2025

Structure

Nuclear Physics Division (BP1)
head - prof. dr. hab. Zygmunt Patyk

nuclear structure and nuclear reactions at low and intermediate energies

Theoretical Physics Division (BP2)
head - dr. hab. Michał Kowal

nuclear physics from low to high energies, physics of elementary particles, QCD, field theory, astrophysics, cosmology, classical and quantum gravity

High Energy Physics Division (BP3)
head - dr. hab. Justyna Łagoda

experimental elementary particle physics and experimental high-energy nuclear physics

Astrophysics Division (BP4)
head – dr. hab. Katarzyna Małek

oobservational cosmology and astrophysics, experimental cosmic ray physics

Employee of DBP

	DBP 2024		DBP 2025	
	people	jobs	people	Jobs
prof. & dr. hab.	43 (11)	34.9	44 (12)	34.7
dr	41 (1)	40.5	48 (1)	47.5
mgr	0	0	0	0
administration & technical stuff	4 (1)	3.8	4	3.8
all	88 (13)	79.2	96 (13)	86

2025	BP1		BP2		BP3		BP4	
	people	jobs	people	jobs	people	jobs	people	jobs
prof. & dr. hab.	3	3	23 (5)	19.1	10 (4)	6.8	8 (3)	5.8
dr	3	3	17 (1)	16.5	14	14	14	14
mgr	0	0	0	0	0	0	0	0
administration & technical stuff	0	0	0	0	0	0	0	0
all	6	6	46 (6)	35.6	24 (4)	20.8	22(3)	19.8

31 Ph.D. students in 2024

32 Ph.D. students in 2025

* in brackets number of retired employees

Promotions

2024	2025
Doctorates: 6	Doctorates: **6**
Habilitations: **3**	Habilitations: **1**
Professorships: **0**	Professorships: **1**

Doctorates: Alice Boldrin, Hari Kumar Sree Kanth, Margherita Grespan, Swalehy Nisar Mulani, Abhishek Chikkaballi Ramalingegowda, Daniele Rizzo

Habilitations: Sebastian Trojanowski

Profesorships: Katarzyna Małek

Research grants

2024		2025	
all grants:	**61**	all grants:	**56**
NCN :	**31**	NCN:	**30**
MNiSW :	**4**	MNiSW :	**10**
UE, NCBiR, NAWA , others :	**26**	UE, NCBiR, NAWA, others:	**16**

Publications

2024

Peer-reviewed publications: **434**

BP1: **14** (3 together with BP2, BP3)
BP2: **107** (48 together with BP3)
BP3: **301** (50 together with BP1, BP2 or BP4)
BP4: **63**

2025

Peer-reviewed publications: **405**

BP1: **14** (2 together with BP3)
BP2: **118** (53 together with BP3 or BP4)
BP3: **252** (56 together with BP1, BP2 or BP4)
BP4: **77** (1 together with BP4)

Main fields of research

Experimental physics

- High-energy particle physics – experiments CMS & LHCb, 9*
- Neutrino physics – experiments T2K, SK, Hyper-K, 5
- High-energy nuclear physics – experiments ALICE, NA61/SHINE, 7
- High-energy lepton-hadron interactions – experiments COMPASS, AMBER 5
- Hadron physics – experiments KLOE-2, 2
- e^+e^- physics – BESIII - 2
- Observational cosmology – projects VIPERS, VVDS, AKARI, Planck, 18
- Observational astrophysics – LIGO-Virgo, 3
- Cosmic ray physics – experiments JEM-EUSO, 1
- Nuclear structure – experiments @ GSI and @ U200, 3
- Nuclear reactions at low and intermediate energies, 5

* approximate number of physicists involved

Main fields of research cont.

Theoretical physics

- Structure and dynamics of atomic nuclei (superheavy and exotic), 4*
- Interactions and structure of hadrons, QCD, 12
- Cosmological models, classical and quantum gravity, 8
- Physics beyond Standard Model and dark matter, 10
- Quark-gluon plasma, 2
- Ultra-cold atomic gases, 2

* approximate number of physicists involved

Presentations of main research achievements of 2025

presentation	speaker
Semi-leptonic decays of hyperons at BESIII	Varvara Batozskaya
A search for heavy stable charged particles by the CMS experiment	Piotr Zalewski
Search for hadron exotics in new decay modes of B^0 meson at LHCb	Salil Joshi
Evidence of isospin-symmetry violation in high-energy collisions of atomic nuclei	Tobiasz Czopowicz
A new near-threshold dipole resonance in ^{10}Be	Nickolas Keeley
New insights into fusion and tripartition from the past year	Yannen Jaganathen
Nucleon Imaging from QCD	Paweł Sznajder
Semiclassical causal geodesics: Minkowski spacetime case	Aleksandra Pędrak
Precise Higgs predictions as a window into the physics beyond Standard Model	Wojciech Kotlarski
Neutron star heating by dark matter in an axion-like particle mediated lepton-flavor-violating model	Hoefken Zink Jaime
Interstellar dust: what tiny grains tell us about galaxy evolution	Ambra Nanni
Evidence for distinct gas and dust evolution in quiescent galaxies	Guliano Lorenzon
Radio tracing star formation in giant molecular clouds: a spatially resolved study of NGC 253	Subhrata Dey
Discovery of extragalactic radio rings and odd radio circles	Subhrata Dey Pratik Dabhade
Characterisation of outflows in the Milky Way with SOFIA and JWST	Miguel Figueira