Department of Fundamental Research (DBP) in 2019

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, field theory, astrophysics, cosmic rays, 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. Agnieszka Pollo

oobservational cosmology and astrophysics, experimental cosmic ray physics

Employee of DBP

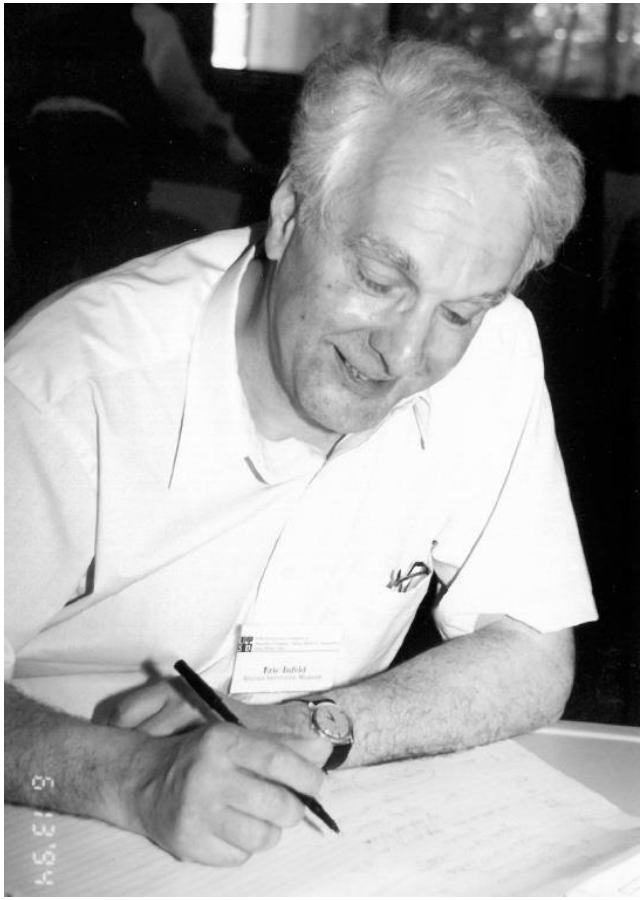
	DBP 2018		DBP 2019	
	people	jobs	people	jobs
prof. & dr. hab.	27 (12)	19,2	28 (12)	16,9
dr	53	51,3	51	49,3
mgr	12	11,25	3	3
administration & technical stuff	6 (4)	5	9 (5)	8
all	98 (16)*	89,75	91 (17)	77,2

2019	BP1		BP2		BP3		BP4	
	people	jobs	people	jobs	people	jobs	people	jobs
prof. & dr. hab.	3 (1)	2,1	10 (3)	7	11 (6)	6,2	4 (2)	1,6
dr	3	3	21	21	18	17,1	9	8,2
mgr	0	0	0	0	0	0	3	3
administration & technical stuff	2	2	1 (1)	0,6	2 (2)	1,8	4(2)	3,6
all	8 (1)	7,1	32 (4)	28,6	31 (8)	25,1	20 (4)	16,4

19 Ph.D. students

* in brackets number of employee receiving pension

Eryk Infeld (1940-2019)



Promotions

Doctorates:

- Marcin Kasztelan, supervisor – prof. dr. hab. Maria Szeptycka
- Varvara Batozskaya, supervisor – prof. dr hab. Krzysztof Kurek
- Zbigniew Plebaniak, supervisor – prof. dr. hab. Tadeusz Wibig

Habilitations:

- Kamila Kowalska
- Przemysław Małkiewicz
- Enrico Maria Sessolo
- Piotr Goldstein
- Paweł Bielewicz
- Jacek Rożynek
- Ernest Grodner

19 Ph.D. students, **4** habilitation procedures in progress

Financial information

2018

Statutory costs

BP1: 840 727 PLN

BP2: 2 126 132 PLN

BP3: 2 203 181 PLN

BP4: 1 185 636 PLN

DBP: 268 072 PLN

all: **6 623 748** PLN (56%)

from grants

all: **5 228 921** PLN (44 %)

full cost of DBP

all: **11 862 335** PLN

Support of research from statutory funds

all: **128 000** PLN (1%)

2019 (as for September 30)

Statutory costs

BP1: 569 426 PLN

BP2: 1 820 814 PLN

BP3: 1 789 031 PLN

BP4: 1 044 662 PLN

DBP: 281 448 PLN

all: **5 505 380** (7 340 507) PLN (61 %)

4/3

from grants

all: **3 483 910** (4 645 213) PLN (39%)

full cost of DBP

all: **9 017 895** (12 023 860) PLN

Support of research from statutory funds

all: **96 600** (128 800) PLN (1%)

Research grants

2018

all grants: **55**

grants of NCN: **27**

MNiSW: **17**

UE: **11**

2019

all grants: **56**

grants of NCN: **26**

MNiSW : **15**

UE, FNP, NCBiR, NAWA: **15**

Applications for NCN grants

2018

all applications: **16**

applications accepted in the 1st round: **3**

rejected applications: **3**

applications under consideration: **10**

2019

all applications: **13**

applications accepted in the 1st round: **0**

rejected applications: **10**

applications under consideration: **3**

Publications

2019

Peer-reviewed publications: **359**

BP1: **19** (8 together with BP2, BP3)
BP2: **134** (75 together with BP3)
BP3: **247**
BP4: **43** (1 together with BP3)

2018

Peer-reviewed publications : **376**

BP1: **28** (13 together with BP3, Compass, WASA)
BP2: **100** (49 together with BP3, LHCb, Alice, Compass)
BP3: **256**
BP4: **63** (9 together with BP3, ZEUS, WASA)

Main fields of research

Experimental physics

- Physics beyond Standard Model – experiments CMS & LHCb, 14*
- Neutrino physics – experiments T2K, SK, km3net, Hyper-K, DUNE, 10
- High-energy nuclear physics – experiments ALICE @ LHC, NA61/SHINE, MPD @ NICA, 6
- High-energy lepton-hadron interactions – experiments COMPASS & HERMES, 6
- Hadron physics – experiments WASA & KLOE-2, 5
- Observational cosmology – projects VIPERS, VVDS, AKARI, 6
- Observational astrophysics – POLGRAW, 5
- Cosmic ray physics – experiments JEM-EUSO, 7
- Nuclear structure – experiments @ GSI and @ U200, 4
- 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, 8
- Cosmological models, classical and quantum gravity, 6
- Physics beyond Standard Model and dark matter, 9
- String theory, 3

* approximate number of physicists involved

Presentations of main research achievements of 2019

presentation	speaker
Testing quantum gravity with muons	J. Kowalski-Glikman
Hints of new physics in flavor anomalies	K. Kowalska
High energy scattering in QCD and gluon saturation	T. Altinoluk
Star formation in the Milky Way	M. Figueira
Launch of Mini Euso & Neutron background in mines	M. Kasztelan
Gravitational waves in 2019	A. Zadrożny
Evolving galaxies in the evolving Universe	A. Durkalec
Neutral meson and direct photon measurements with the ALICE experiment	A. Kovalenko
Recent developments from CMS experiment	P. Zalewski
CP and CPT symmetry violation and exotic hadrons in LHCb experiment	D. Melnychuk
Search for quark-gluon plasma in NA61/SHINE	B. Maksiak
Electron antineutrino appearance and our involvement in T2K experiment	J. Łagoda
First measurements at KM3NeT ORCA and ARCA detectors	P. Mijakowski
Fast-timing techniques development with help of the EAGLE-EYE multi-detector setup	E. Grodner
Evidence of direct tetraneutron transfer in near-barrier ^{8}He induced reactions	N. Keeley