

COPIGAL (France) Today

Polish-French collaboration in Nuclear Physics

GANIL

29/11/2024

Marek Lewitowicz

- *LIA/IRP consortium & organisation*
- *COPIGAL projects and (French) budget*
- *Conclusion & outlook*

COPIGAL Steering Committee

**Representatives of CNRS/IN2P3, CEA/Irfu, GANIL, COPIN,
Angela Bracco, Jurgen Gerl (Int. Experts)
1 meeting/year**

Scientific Coordinators Bogdan Fornal & M.L.

Distribution of funds by coordinators once a year based on the requests, priorities and past activities

Collaboration is open in terms of participating labs from Poland (COPIN) and France (IN2P3 & Irfu) for physics topics related to GANIL and Polish laboratories

More than 50 participants from each side

- **15-30 visits per year France <-> Poland**
- **Spent budget on average 13-15k€/year per country**
- **> 50 publications in the refereed journals**
- **Several PhD theses**
- **Proposals for experiments**

Priorities:

- **Experiments at GANIL, CCB and HIL**
- **Development of instrumentation PARIS, FAZIA, AGATA**

14 (in 2024) active projects with the corresponding spokespersons from Poland and France

No.	Project (coordinators)
1	Structure of light exotic and halo nuclei (K.Rusek, V. Lapoux)
2	Nuclear structure close to the N=Z line (M. Palacz, G. de France)
3a	Nuclear deformation in excited states Superdeformation at low spins (Katarzyna Hadyńska-Klęk, E. Clement)
3b	Nuclear deformation in excited states : Shape coexistence in A~100 nuclei (K. Wrzosek-Lipska, M. Zielińska)
4	Physics and instrumentation development with FAZIA (K. Mazurek, N. Le Naindre)
5	Physics and instrumentation development with PARIS (A. Maj, M. Lewitowicz)
5a	PARIS for studies of fission with VAMOS (M. Ciemala, Ch. Schmitt)
5c	PARIS for GDR and highly excited states studies at CCB IFJ PAN and at GANIL (M. Kmiecik, J.N. Wilson)
5d	Development of the PARIS array (A. Maj, M. Lewitowicz)
6	Measurements of electromagnetic moments of isomeric states (N. Cieplicka-Oryńczak, G. Georgiev)
9	Fission dynamics within state-of-the-art Langevin approach; (K. Mazurek, C. Schmitt)
10	Gamma-ray spectroscopy studies of neutron-rich light nuclei at GANIL and CCB IFJ PAN (M. Ciemala, E. Clement)
12	Predictions for the synthesis cross-sections of Z=114–120 elements (M. Kowal - D. Boilley)
14	(Prompt)-gamma spectroscopy of heavy and superheavy nuclei (P. Bednarczyk, A. Maj, D. Ackermann)

PAC at SLCJ, Warsaw, IAC at CCB IFJ PAN, Steering Committee meetings

New proposed project : M. Kowal et al. "K Isomers in Heavy Nuclei: Exploring Properties and Creation Possibilities"

COPIGAL France budget 2021-2024

Financial summary French side 2021 - 2024

Financial summary French side 2021 - 2024				
IRP name:	COPIGAL			
Responsable scientifique:	Marek LEWITOWICZ	Institut CNRS de rattachement : GANIL		
Budget in euros :	10 000,00 €	2021	CNRS Management	
	20 000,00 €	2022	GANIL GIE Management	
	20 000,00 €	2023		
	20 000,00 €	2024		
1) MOBILITY				
Years	Polish stays in France	French trips to Poland	Total in €	
2021	8481,6	1139,33	9620,93	
2022	15851,43	1408,37	24059,8	
2023	6487,38	1422,66	7910,04	
Preliminary	2024	5529,11	2903,48	10 872,17 €

Organisation of workshops

- **COPIGAL Workshops (every 2 years)**



- **COPIGAL-CALL-AGAIN & POLITA (France-Italy-Poland) Workshops (every 2-3 years) since 2014 (Paris, Catania, Warsaw, Orsay, next in Italy in 2026)**



Organizing committee (spokespersons of the 3 agreements)

Not only bi-(tri-)lateral collaborations
....but also

Joint FP6, FP7, H2020 & HE European projects

FP6 **EURONS** (EUROpean Nuclear Structure Research)

FP7 **SPIRAL2 Preparatory Phase**

FP7 **NuPNET** (Nuclear Physics Network)

FP7 **ENSAR** (European Nuclear Science and Application Research)

H2020 **ENSAR2** (European Nuclear Science and Application Research)

H2020 **IDEAAL** (International Development of gAnil-spirAL2)

and HE **EURO-LABS** today



The COPIGAL during 16 years of its activity established a solid, developing and equilibrated collaboration in nuclear physics between France and Poland.

In particular, it

- reinforced the participation of Poland in the experimental programs and development of instrumentation at GANIL-SPIRAL2, ALTO and of France in CCB Krakow and HIL Warsaw
- **funded a basis for the Polish participation in the GIE GANIL – Preliminary Agreement signed in 2024**
- triggered joint participation in EU projects like SPIRAL2PP, ENSAR, ENSAR2, IDEAAL and EURO-LABS
- allowed to establish a tri-lateral collaboration F-I-PL

The future of the collaboration is under discussion at the COPIGAL Workshop in the Scientific Centre of the Polish Academy of Sciences in Paris, on November 28-29, 2024