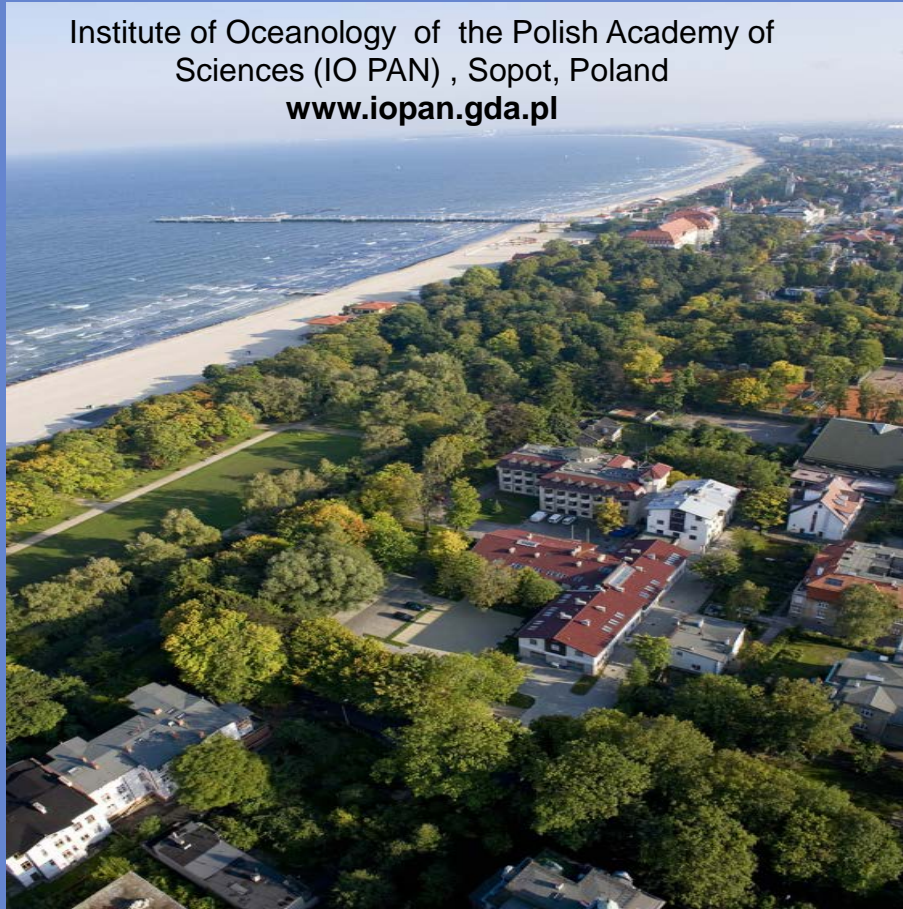




# Institute of Oceanology of the Polish Academy of Sciences

Institute of Oceanology of the Polish Academy of  
Sciences (IO PAN) , Sopot, Poland  
[www.iopan.gda.pl](http://www.iopan.gda.pl)



s/y „Oceania”



Ksenia Pazdro, IO PAN scientific director, [pazdro@iopan.gda.pl](mailto:pazdro@iopan.gda.pl)





# Institute of Oceanology Polish Academy of Sciences

IO PAN -, The Institute of Oceanology of the Polish Academy of Sciences the largest marine-oriented research institute in Poland was founded in 1983, as the successor to the Marine Station of the Academy, in existence in Sopot since 1953

staff - **189** employees, **13** professors, **18** associate professors, **44** PhD degree, **36** PhD Students (December, 2012)





The Institute's mission

**To conduct research**

**focusing on processes occurring in the marine environment in order to expand existing knowledge of the processes and phenomena taking place there.**

**The results of our work support the sustainable use of marine resources and the conservation of the marine environment**





# Institute of Oceanology Polish Academy of Sciences

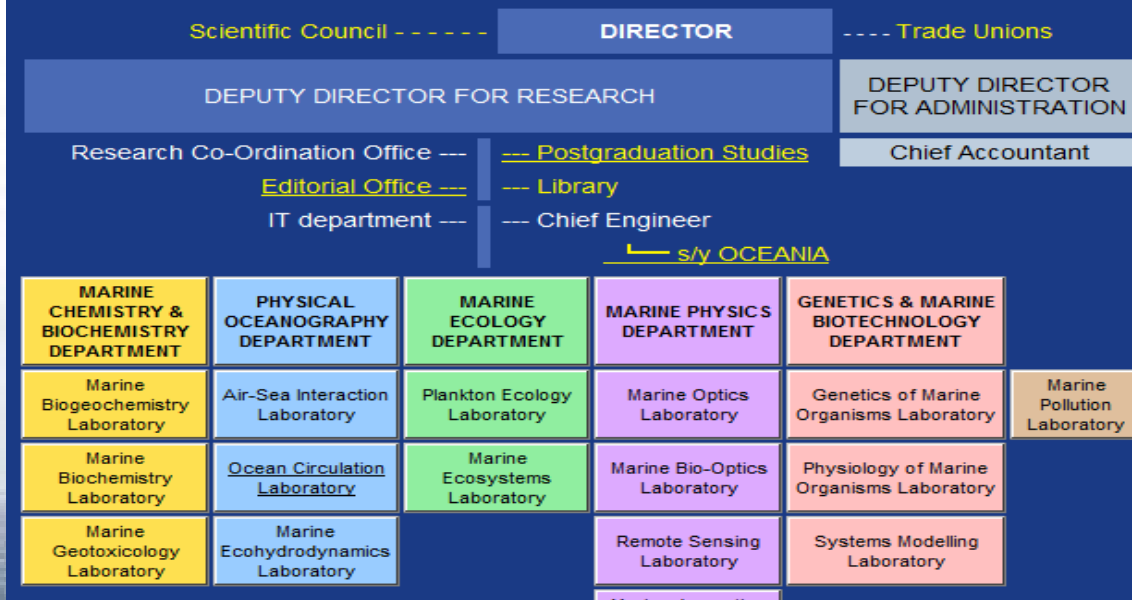
Research is conducted in  
15 laboratories in 6 departments

## The Institute Departments:

Physical Oceanography  
Marine Physics  
Marine Pollution Laboratory  
Marine Ecology  
Marine Chemistry and Biochemistry  
Genetics and Marine Biotechnology



### *Scheme of organisation of the Institute of Oceanology PAN, Sopot 2010*





## Research strategic directions

Statutory research is carried out according to yearly (tasks) and multi-year (themes) plans. At present there are 64 tasks, grouped in 17 themes. These, in turn, are grouped around **four 'strategic directions'** . :



**I. The role of the ocean in shaping climate and the effects of climate change on European Seas**

**II. Natural and anthropogenic variability in the Baltic Sea environment**

**III. Contemporary changes in shelf sea ecosystems**

**IV. Genetic and physiological mechanisms governing the functioning of marine organisms; fundamentals of marine biotechnology**

## Main research areas



**The Institute of Oceanology conducts scientific research in the Baltic and European Arctic Seas in cooperation with many Polish and international Institutions**

## Funding of research:

The Institute receives funding from :

- the Ministry of Science and Higher Education (within the framework of statutory research);
- the National Science Centre (NCN) and the National Centre for Research and Development (NCBiR)
- the European Union (from European Structural Funds and framework programmes 7PR UE, BONUS Plus);
- the Norwegian financial mechanism;
- bilateral contracts with institutions in the United States of America, Norway and Canada





# SatBałtyk project: Satellite Monitoring of the Baltic Sea Environment



Coordinator: **IO PAN**

Budget: **38 mln PLN**

Implementation time: **31.12.2009 – 31.12.2014**

## Project goals:

The aim of the SatBałtyk project is **to prepare the technical infrastructure and set in motion practical operational procedures for the efficient, routine monitoring of the state of the Baltic Environment**, i.e. the production of maps of its structural and functional characteristics, including the inflow and characteristics of radiant energy (PAR, UV), temperature distributions, the dynamic state of the sea surface, the concentrations of chlorophyll and other phytoplankton pigments, blooms of toxic algae, the occurrence of upwelling events, the appearance of pollutants such as oil slicks, and the characteristics of the primary production of organic matter.

The development and possible practical application of remote sensing for assessing the ice cover in the Baltic is anticipated.



Satelitarna Kontrola Środowiska Morza Bałtyckiego  
nr projektu POIG.01.01.02-22-011/09-00



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Instytut Oceanologii PAN



Instytut Oceanografii UG



Wydział Nauk o Ziemi  
Uniwersytetu Szczecińskiego



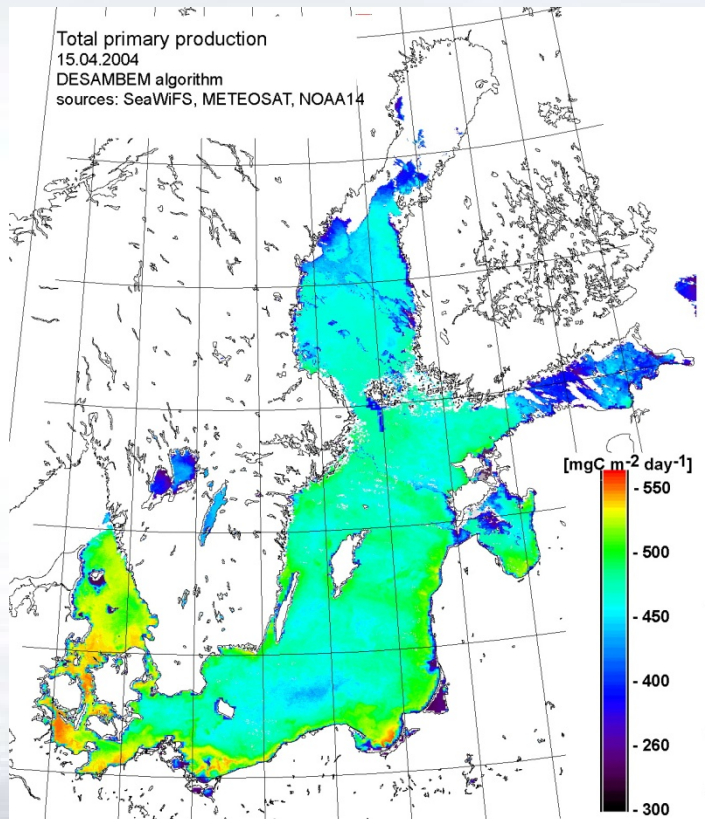
Akademia Pomorska w  
Słupsku



# SatBałtyk project: Satelite Monitoring of the Baltic Sea Environment



Satelitarna Kontrola Środowiska Morza Bałtyckiego  
nr projektu POIG.01.01.02-22-011/09-00



Example of the remotely sensed distribution of total primary production of the Baltic ecosystem on 10 May 2002 calculated from the DESAMBEM algorithms

## KONSORCJUM



Instytut Oceanologii PAN



Instytut Oceanografii UG



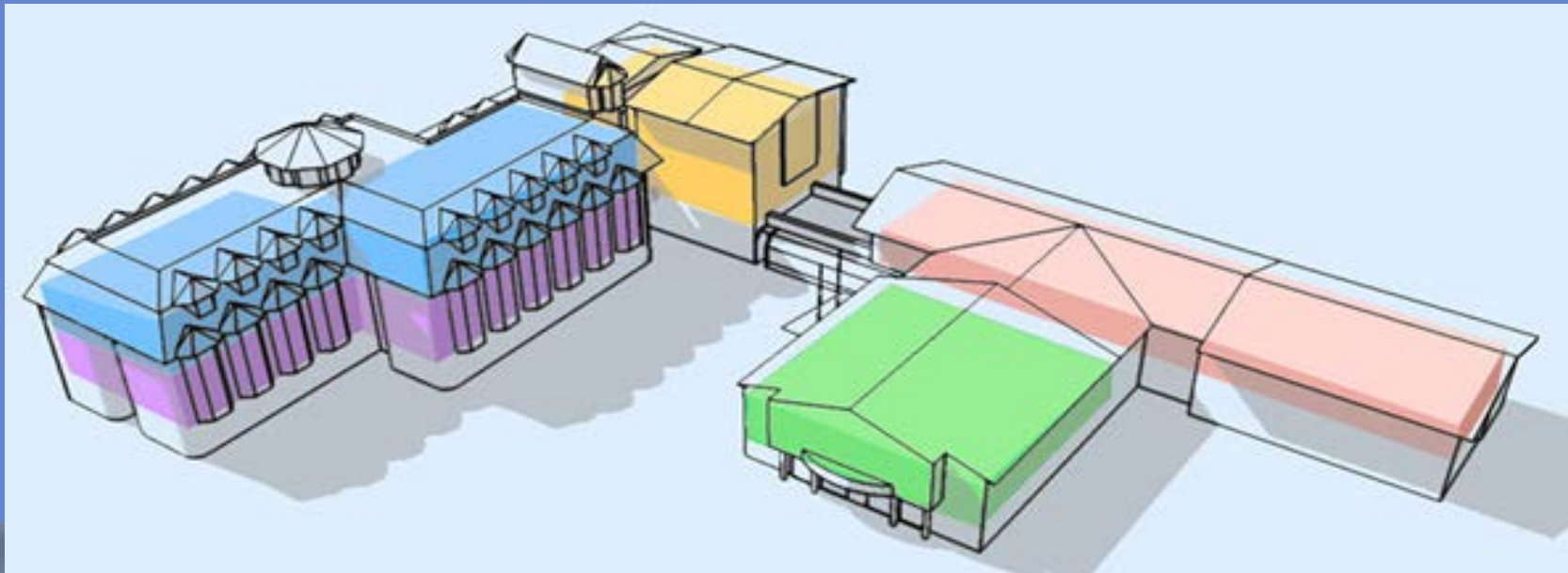
Wydział Nauk o Ziemi  
Uniwersytetu Szczecińskiego



Akademia Pomorska w  
Słupsku

## Infrastructure

The Institute's infrastructure consists of a modern complex of high quality buildings (built 1992-2008) with a total floor area of **5100 m<sup>2</sup>** (well equipped laboratories(clean rooms, culturing rooms, isotope room); conference rooms, mechanical workshop)



## Infrastructure



well-equipped laboratories (clean-rooms, culturing-rooms, isotope room).

large, audiovisual-ready conference room (capacity – ca 120 people)

2 seminar rooms (capacity – 30 people each)







## RESEARCH VESSEL *s/y Oceania*

The Institute is the owner and operator of the research vessel *s/y Oceania*, built in 1985, **fully renovated in 2010**. The *Oceania* accommodates 14 scientific crew members.



Name: **s/y Oceania**

Owner: **Polish Academy of Sciences, Institute of Oceanology, Sopot, Poland**

Harbour: **Gdańsk - Nowy Port**

Dimensions: **48.9 m / 9.0 m / 3.9 m**

Main engine: **Diesel, 600 kW MTU**

Masts: **3, each 32 m high**

Sails: **280 m<sup>2</sup>, electric setting**

Cruising speed: **9 kts**

Max. speed: **12 kts**

Crew: **13, Scientists 14**

Endurance: **1 month**

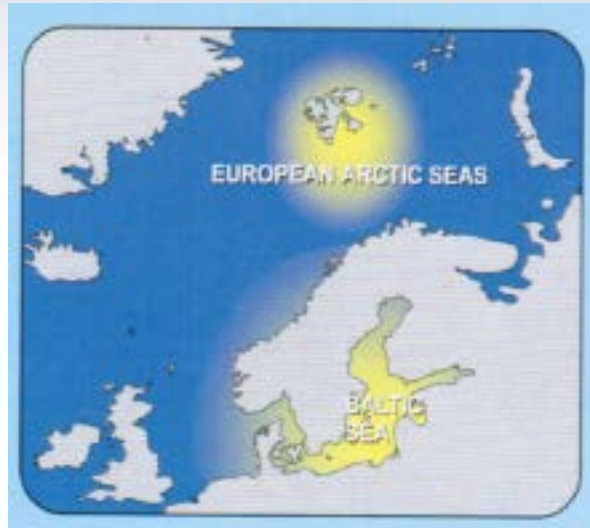
Range: **unlimited (except polar area in winter)**

# RESEARCH VESSEL s/y *Oceania*



## Research areas:

Baltic Sea and European Arctic Seas



PLAN REJSÓW s/y „Oceania” w 2013 roku

LUTY	MARZEC	KWIECIEŃ	MAJ	CZERWIEC	LIPIEC	SIERPIEŃ	WRZESIEŃ	PAŹDZIERNIK	LISTOPAD	GRUDZIEŃ
1	1	1	1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5
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19	19	19	19	19	19	19	19	19	19	19
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22	22	22	22	22	22	22	22	22	22	22
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29	29	29	29	29	29	29	29	29	29	29
30	30	30	30	30	30	30	30	30	30	30
31	31	31	31	31	31	31	31	31	31	31

Annually ~14 cruises of „Oceania”, 240 -270 sailing days, 70 in Artic, 170 in the Baltic Sea

## RESEARCH VESSEL s/y *Oceania*



In **2010** the Institute celebrated the **25th** anniversary of the raising of the *Oceania's* flag.

During **25** years of operation she has completed more than **330** cruises (including **24** AREX expeditions), spent about **4500** days at sea, sailed **300 000** nautical miles and welcomed more than **4200** scientists (including **400** from abroad) on board



## Educational activities

IO PAN is authorised to confer PhD and Dr hab (habilitation) degrees in the Earth Sciences (Oceanology).

The institute conducts a PhD Study Course designed to educate highly qualified young scientists in the field of oceanology. The four-year course provides experimental and theoretical training in all the fields of marine sciences practised at the Institute.

Most often a group of 10 PhD students enters a study course each year



## Publishing activities

*Oceanologia*, an English-language, peer-reviewed quarterly journal, has been published since 1971.

*Oceanologia* is open to contributions from all over the world. The journal is listed in the ISI Science Citation Index Expanded. Its five year Impact Factor – 1.10 (2012)

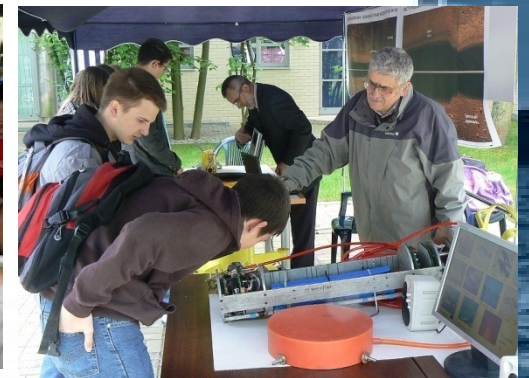
‘Dissertation and monographs’, published since 1990, in Polish or English, one or two issue(s) per year.



# Dissemination activities

## Annual Baltic Science Festivals / Sopot Science Day

### Cooperation with secondary schools



IO PAN was selected the winner of the „2008 Best Science Promoter” and „2012 Best Science Promoter” contests, organized by the Polish Press Agency and the Ministry of Science and Higher Education





# Oceanographic database




Encyclopaedia of Arctic made by Institute of Oceanology Polish Academy of Science, Sopot, Poland © 1997/98  
authors: Jan Marcin Woźniak, Lech Stompnicki, Sławomir Świergiel  
Illustrations by Monika Woźniak, AI 200

At present the database includes physical oceanography, numerical modelling, marine ecology parameters data gathered at the Institute over many years

IT infrastructure was significantly improved during the realisation of The project ZSPDO (Development and implementation of the Integrated Oceanographic Data Processing System) (2009-2012) granted by Ministry of Science and Higher Education from the EU fund - European Regional Development Fund (20 mln PLN)






**Physical Oceanography**

Physical Oceanography databases consist of below listed measurements of selected devices:


- CTD measurements.
- Underwater optics - Inherent Optical Properties measurements.
- Current profiler (e.g. ADCP, LADCP).



**Biology & Fisheries**

Ecology database consist of data listed below:

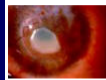
- Taxonomy.
- Sampling & sorting methods.
- Macrozoobenthos of Puck Bay.
- Macrozoobenthos of Hornsund fjord.



**Cruises & Station Details**


Cruises & Stations details databases consist of several main databases which are related to cruises, stations, geographic positions, etc.

- Cruises.
- Stations.
- Datasets.
- Devices.
- Units.




**Chemical Oceanography**

Chemical Oceanography databases consist of measurements listed in sections:



**Meteorology**



**Cruise Summary Report & Quality Control**

The Cruise Summary Report is a general purpose for reporting on measurements and samples collected at sea.

- Cruise Summary Report 2005.
- Quality control.
- Methodology.

# Thank you for your attention



*Instytut Oceanologii Polskiej Akademii Nauk*



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