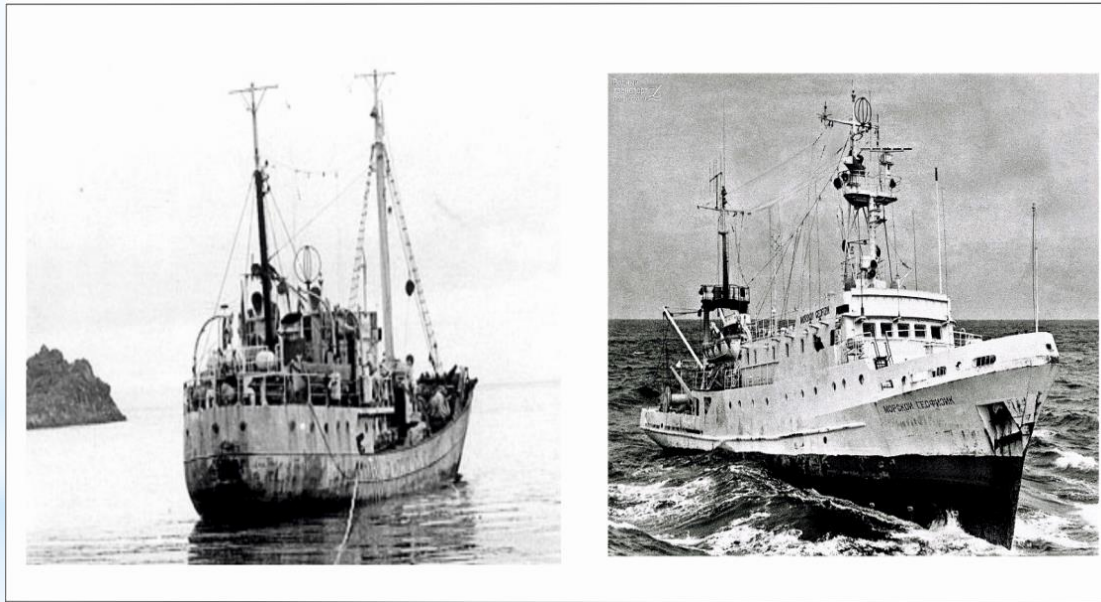


Galina A. Vlasova, Ruslan G. Kulinich

**History of co-operation between POI FEB RAS
with scientific organizations of Vietnam
(1981- to present)**

First steps

Studies of POI in the South China Sea were initiated as early as in the 1970s. The first expedition was carried out **1975** under the leadership of geologist Dr. I.I. Bersenev on the R/V 'Pervenets'. In **1977**, hydrophysical studies were carried out on the R/V 'Marine Geophysicist' and the R/V 'Stepan Malygin' under the leadership of Dr. V.P. Shevtsov. These expeditions were not yet bound by the Soviet-Vietnamese agreements, but made the first step in this direction.



R/V "Pervenets" (left) and R/V "Marine Geophysicist" (right)

Start of collaborative research

The beginning of scientific cooperation between Far Eastern and Vietnamese scientists dates back to **1981**, when a Program of joint marine research was developed in Nha Trang and a cooperation Agreement was prepared within the framework of the South China Sea Project for the period 1981-1985. This treaty was subsequently renewed every 5 years. The main partner on the Vietnamese side was the Institute of Marine Research of the National Centre for Scientific Research of the Socialist Republic of Vietnam, located in Nha Trang (now the Institute of Oceanography of the Vietnam Academy of Science and Technology, IO VAST).



Working meetings in Vietnam in the early 1980s. The Vietnamese side was represented by Dr. Le Phuoc Chinh, Head of the Marine Physics Department, IMI, Russian side – Dr. V.I. Il'ichev and Dr. R.G. Kulinich

In the more than **40 years** since then, Russian-Vietnamese co-operation has gone through periods of varying activity. The most fruitful were the 1980s. At that time, **29 expeditions** with different tasks and on different research vessels were carried out in the South China Sea by the Pacific Oceanological Institute together with Vietnamese scientists. In the 1990s, the activity of joint research was significantly reduced, and only **11 expeditions** were carried out during this period, the last of which took place in the winter of 1994-1995.



R/V *Kallisto*



R/V *Professor Bogorov*



R/V *Akademik M.A. Lavrentyev*



R/V *Professor Gagarinskiy*



R/V *Akademik A. Vinogradov*



R/V *Akademik A. Nesmeyanov*

Research vessels on which Russian-Vietnamese studies were carried out.

Expeditions in the 1981-1995

The first joint expedition took place in 1981 on the R/V 'Professor Bogorov'. It was led by the Director of the Institute, Corresponding Member of the USSR Academy of Sciences, Dr. V.I. Il'ichev. In the port of Nha Trang the ship was met by the staff of the Institute of Marine Research headed by the Director of the Institute Dr. *Le Trong Phan*.



Director of POI
Dr. V.I. Il'ichev

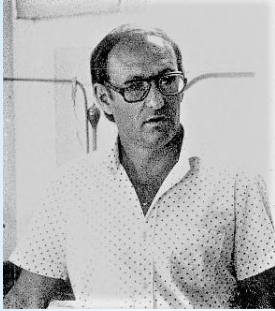


Director of IMI
Dr. Le Trong Phan

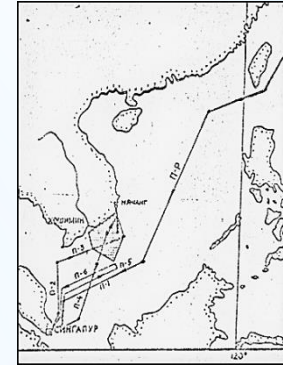
The expedition included hydrological, hydrochemical, acoustic and electromagnetic studies. As a result, new data were obtained on the thermohaline structure of waters, the influence of the Mekong River flow on the stratification of sea waters, the influence of tidal processes was assessed, the concentration of heavy metals was determined, the characteristics of natural electromagnetic fields induced by currents were obtained, the concentration of zooplankton and other information was estimated.



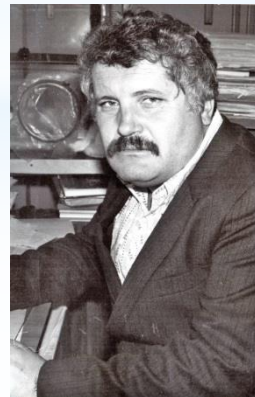
The second expedition was organized in the same year on the R/V '*Callisto*'. The task of the expedition was to carry out geological and geophysical studies. It was headed by the Head of the Geophysics Department of the POI, PhD *R.G. Kulinich*. As a result, the first characteristics of gravity and magnetic anomalies were obtained, new details of the acoustic basement structure were obtained and the first areas of anomalous concentrations of natural gases in bottom sediments and near bottom water were detected.



Head of the expedition
R.G. Kulinich

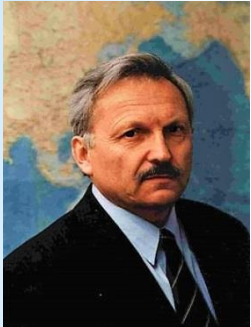


The third expedition to the South China Sea was carried out in 1982 on the R/V '*Akademik A. Nesmeyanov*'. It was headed by Dr. *V.V. Anikiev*, Head of the Hydrochemistry Department of the POI. For the first time detailed hydrochemical studies were carried out in the zone of mixing of sea waters with Mekong River waters. As a result, a large amounts of hydrological, biological, hydrophysical, hydrooptical, hydrochemical characteristics, and pollution of waters were obtained.



Head of the expedition
V.V. Anikiev

In the future, joint research became regular. The following oceanological disciplines were studied: hydrology, hydrophysics, hydrochemistry, gas-geochemistry, geology, geophysics. Most of the expeditions were complex and were led by the leading scientists of POI: Dr. V.A. Akulichev, Dr. G.T. Bogdanov, Dr. V.V. Anikiev, Dr. G.I. Yurasov, Dr. A.V. Alekseev, Dr. R.G. Kulinich, Dr. A.I. Obzhistrov, Dr. F.R. Likht, S.M. Nikolaev, and others.



V.A. Akulichev



G.I. Yurasov



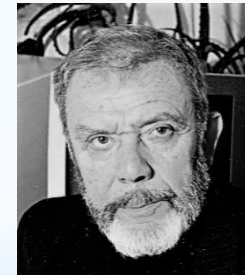
A.I. Obzhistrov



K.T. Bogdanov



A.V. Alekseev



F.R. Likht



V.V. Anikiev



R.G. Kulinich



S.M. Nikolaev

Russian-Vietnamese expedition participants

On the R/V *'Akademik A. Nesmeyanov'*, 1982



Nha Trang, IMI, 1982



On the R/V *'Akademik A. Vinogradov'*, 1984

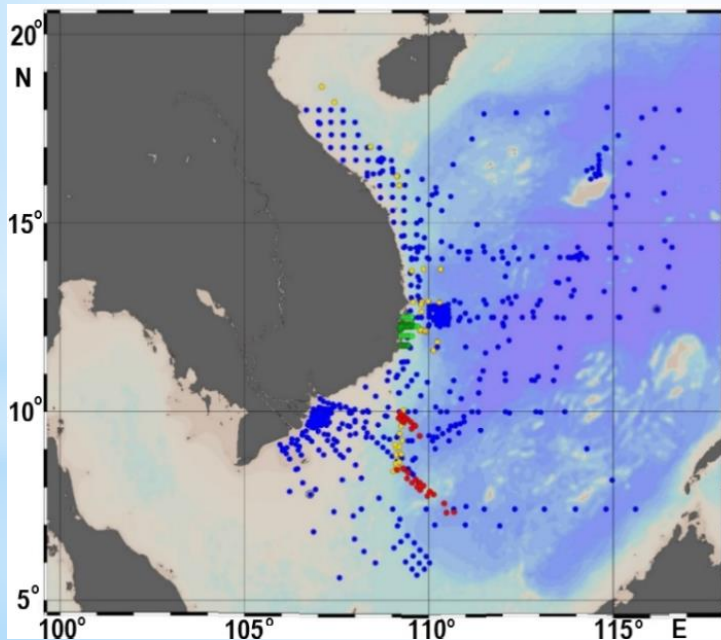


On the R/V *'Akademik M.A. Lavrentyev'*, 1987

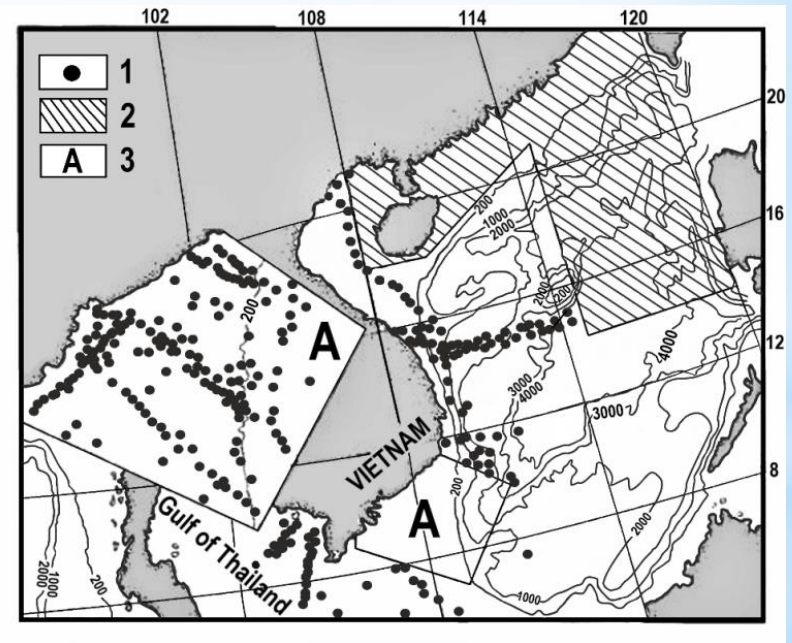


Results of collaborative research 1981-1995

Thus, during the mentioned period of cooperation between the POI and Vietnamese scientists in the field of oceanological research, a great volume of hydrological, hydrochemical, hydrophysical, geological-geophysical, gas-geochemical and other studies was carried out. Most of them have been carried out within the shelf and continental slope of the Vietnam. On this basis, archives and databases were created, and distribution maps of all above researches were constructed. The results of the studies have been repeatedly published and reported at conferences, symposia and seminars of different levels. Many Russian and Vietnamese scientists have defended candidate and doctoral dissertations on the basis of the obtained. Maps of hydrological, geophysical, gas-geochemical, lithological, mineralogical studies are given below.

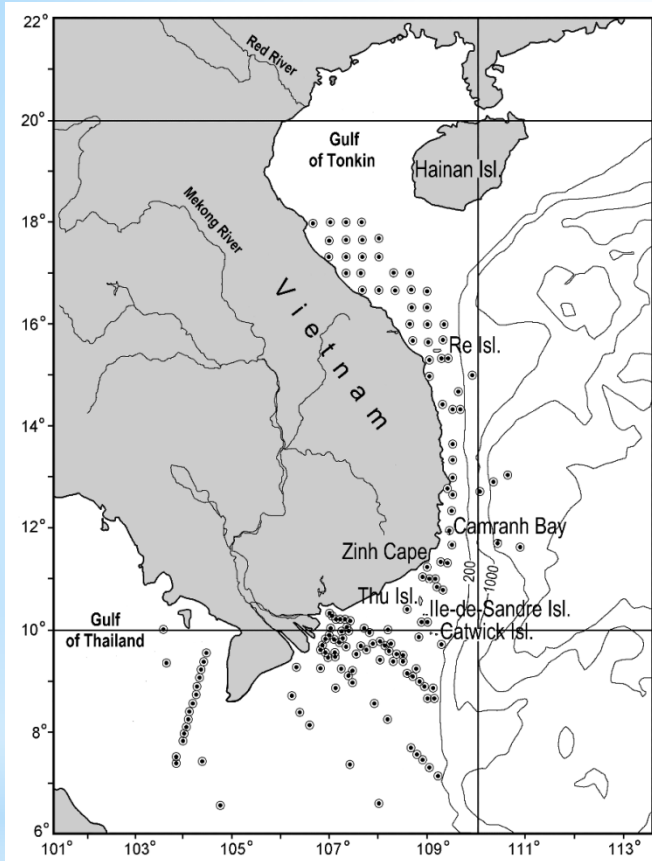


Hydrological stations

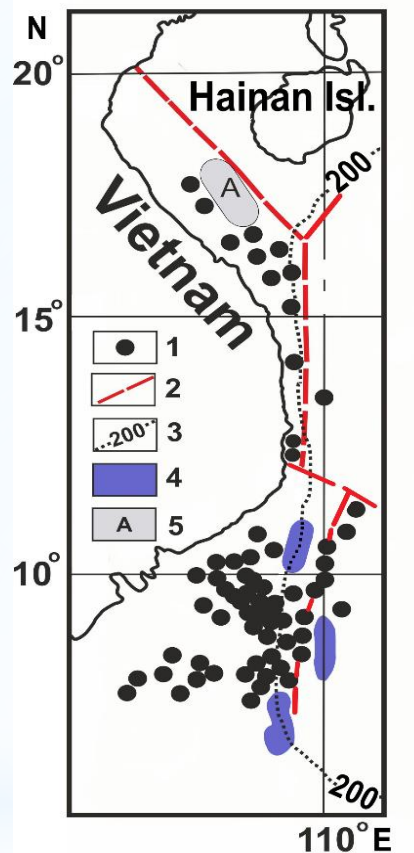


Sediment sampling stations

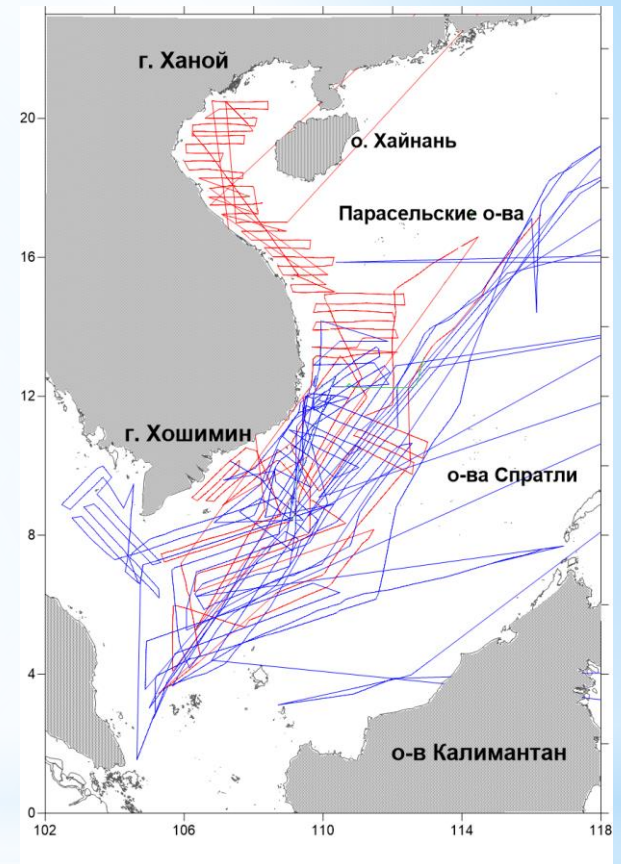
Continuation



Sediment sampling stations for the determination of mineralogical composition



Gas-geochemical sampling stations



Geophysical profiles

Co-operation 2005 – present day

After a 10-year break, **in early 2005**, Dr. Nguyen The Tiep, Director of the Hanoi Institute of Oceanography (now IMGG) VAST, addressed POI with a proposal to restart and develop joint geological and geophysical research. In the same year Dr. R.G. Kulinich (Depute Director of POI) and Dr. V.M. Nikiforov (head of Lab) visited Vietnam, where a Memorandum of Scientific Cooperation was signed (08.06.2005). This was the beginning of a **new stage** of Russian-Vietnamese joint geological and geophysical research.

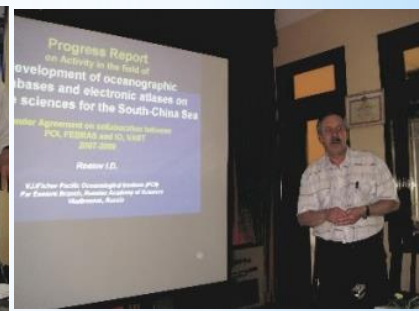


POI delegation at the Institute of Oceanography (now IMGG), Hanoi, 2005

a — at the seminar

b — meeting with the **President of VAST Dr. Dang Vu Minh**. *Left to right:* Director of IO Dr. Nguyen The Tiep, Dr. R.G. Kulinich, President VAST Dr. Dang Vu Minh, Dr. V.M. Nikiforov, Deputy Director IO Dr. Do Chien Thang

In September 2007, the administration of IO VAST (Nha Trang) invited POI to participate in an international conference dedicated to the 85th anniversary of the Institute. This visit started a [new phase of joint oceanographic research](#). In spring 2010, the POI delegation headed by Dr. V.B. Lobanov (Deputy Director of POI) visited the Vietnam Administration of Seas and Islands (VASI), IMGG (Hanoi) and IO (Nha Trang) VAST to clarify the plans of joint activities. According to the results of this visit the Agreement on scientific cooperation between POI FEB RAS and IO VAST was signed (16.07.2010).



In August 2010, delegations from VAST and VASI under the General Administrator Dr. Nguyen Van Cu visited POI. As a result of the discussions, Memorandums of Co-operation between POI FEB RAS, IMGG VAST and VASI were signed, and Memorandums and Agreements on co-operation in planned specific projects were prepared.



The signing Memorandums

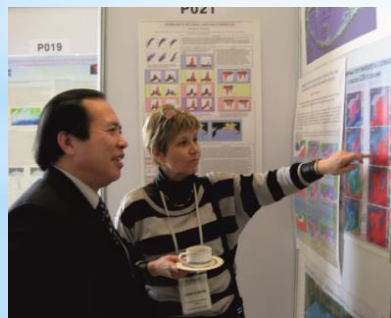


Dr. Nguyen Van Cu and Academician V.A. Akulichev

In summer 2010 and spring 2011, two series of expeditionary studies of coastal waters in the area of Nha Trang Bay were carried out on the IO VAST ship NSB-95 under the leader of Dr. Nguyen Ba Xuan, Head of the Marine Physics Department, and Dr. V.B. Lobanov.



Thus, since 2005, the cooperation between POI has been newly developed not only with the institutes of the VAST, but also expanded through the involvement of the VASI in joint research. Joint seminars and meetings have been intensified, the number of joint publications and presentations at international conferences and symposia has increased. Our scientists gave lectures at various institutes of VAST and conducted practical training for Vietnamese researchers.



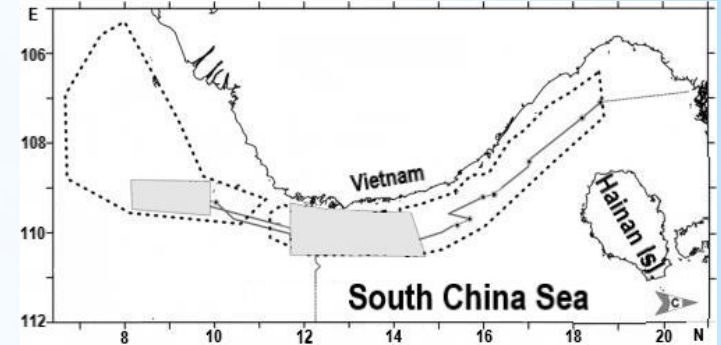
For many years of active co-operation and participation in the development of oceanological and terrestrial research in Vietnam, the medals of the VAST were awarded to the following staff members of POI: Director, Academician V. A. Akulichev, Deputy Director V. B. Lobanov (IO VAST, Nha Trang, 2012), Chief Researcher R. G. Kulinich, and Head of the Lab V.M. Nikiforov (IMGG VAST, Hanoi, 2013).



In 2018, within the framework of cooperation agreements between the FEB RAS and VAST, a roadmap for joint marine expeditionary research for 2018-2025 was signed. This became the basis for the organization of a joint expedition in the 2019 on the R/V ‘Akademik M.A. Lavrentyev’, which was headed by the Deputy Director of POI Dr. R.B. Shakirov.



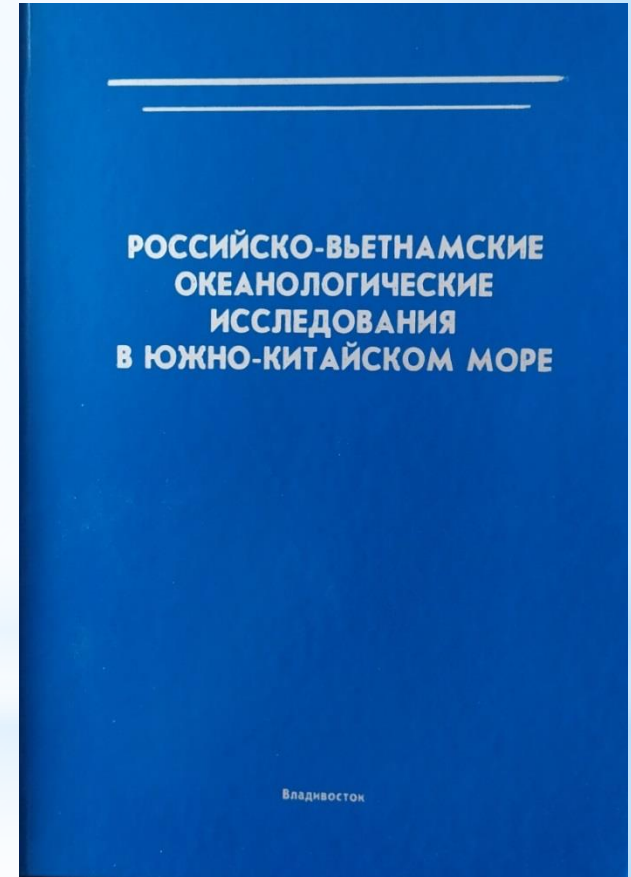
Deputy Director of POI
Dr. R.B. Shakirov



On 26 November 2019, a joint Russian-Vietnamese symposium was held in Hanoi to discuss further cooperation under the Roadmap and the results of the completed work. The Russian delegation was headed by Academician V.I. Sergienko, Chairman of the Presidium of the FEB RAS, and the Vietnamese delegation was headed by Professor Chau Van Minh, President of VAST.

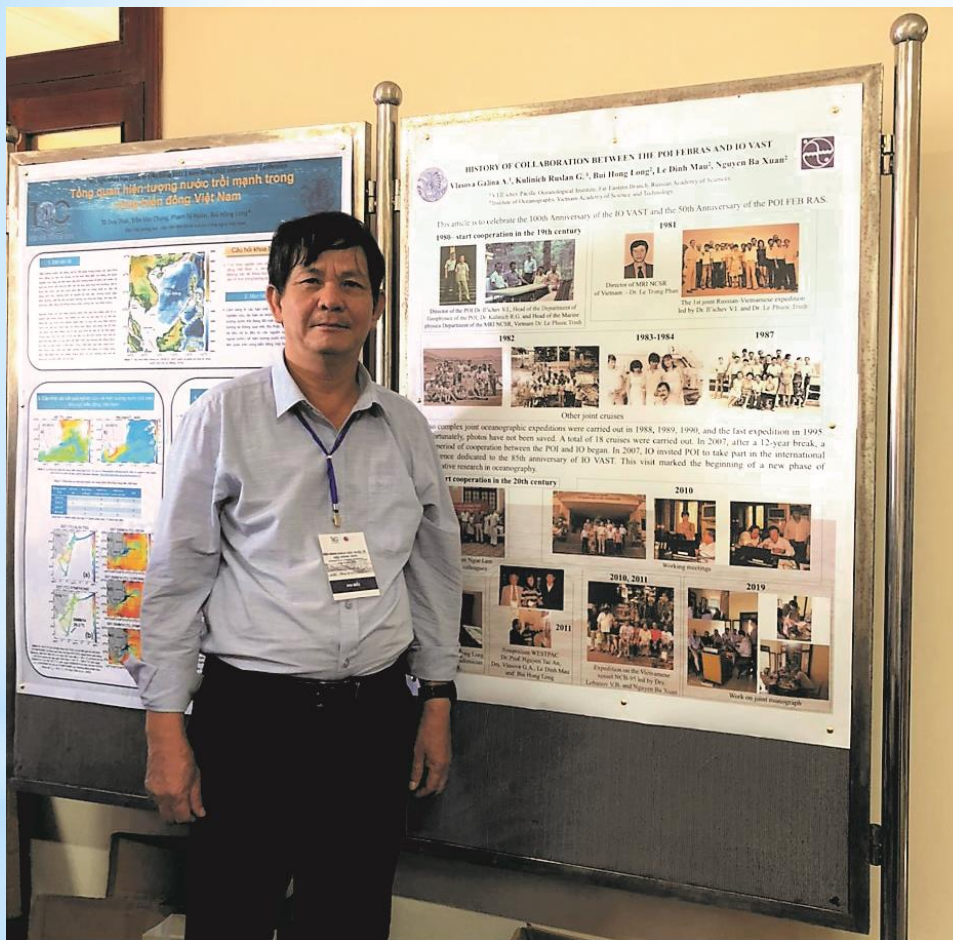


Based on the results of the Russian-Vietnamese research, a monograph in Russian was published in 2020. Currently, an expanded version of this monograph, translated into English, is being prepared for publication by Springer Publishing House.

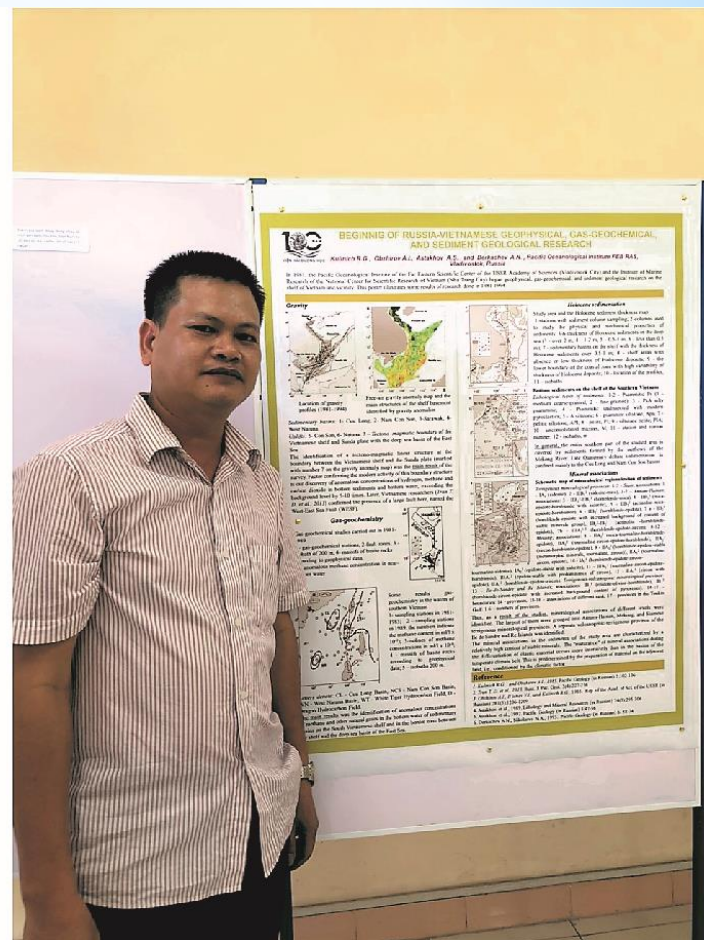


Preparation of the monograph

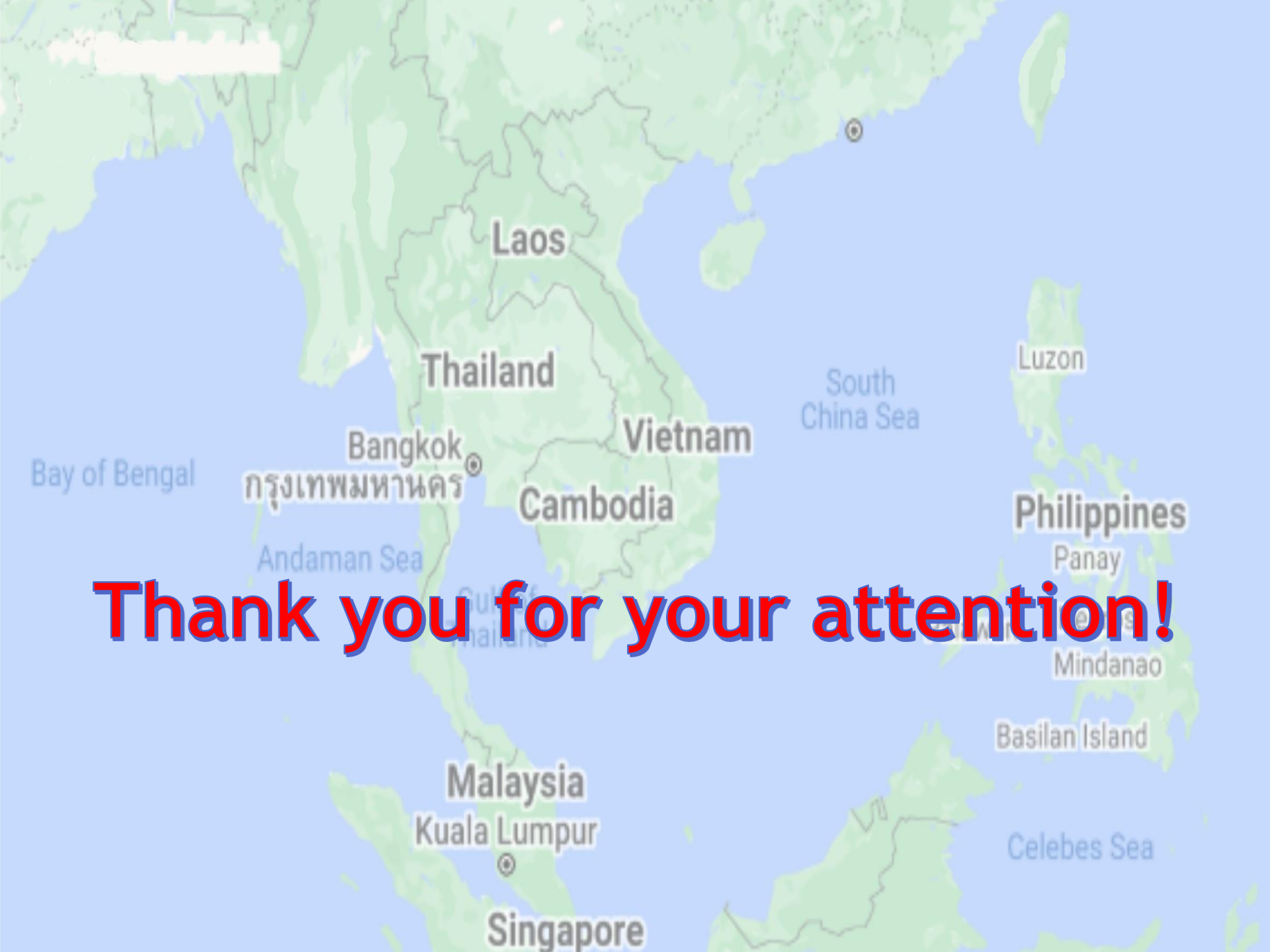
Russian-Vietnamese oral and poster presentations at the international conference dedicated to the 100th anniversary of IO VAST, Nha Trang, 2023



Dr. Le Dinh Mau



A young Vietnamese researcher



Thank you for your attention!