



Participation of the World Data Center for Solid Earth Physics in creation of distributed geophysical data resource in the Internet

Beijin, China, 23-25 October 2006

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Geophysical Center of the RAS



WDC for Solid Earth Physics , Moscow
is a division of the Geophysical Center of
Russian Academy of Sciences.

The activity of the WDC for SEP is
carried out according to the "Guide to
the World Data Center System".

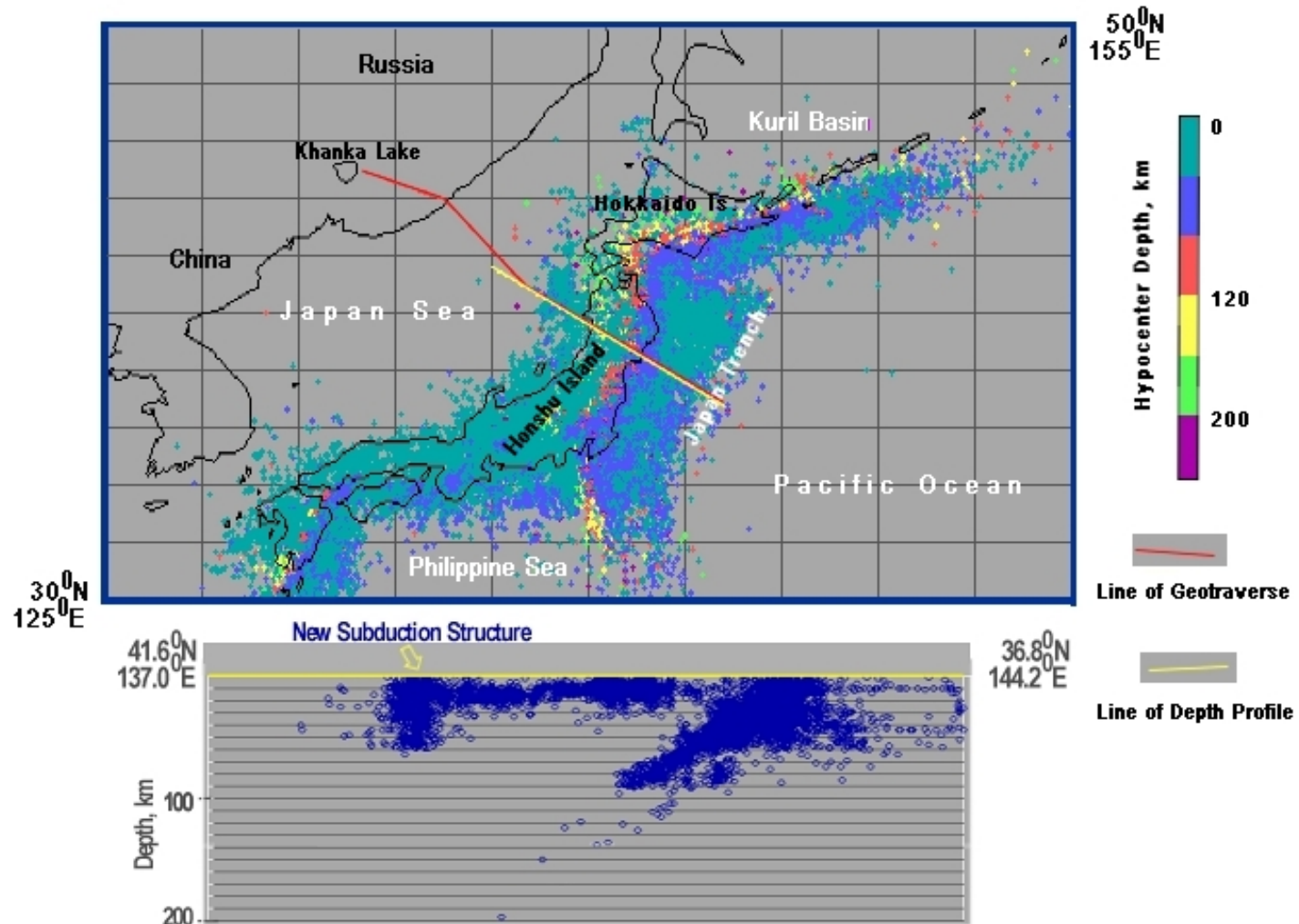
Main WDC functions according to "Guide"


- ❑ Data collection and archiving, data analysis, quality control, processing and long-time storage
- ❑ Data maintenance, preparation of inventory catalogues, meta-data documentation, etc.
- ❑ Data distribution - data exchange, execution of user requests, service of visitors, publication of data sets
- ❑ Use of new data technologies and software, use of INTERNET
- ❑ Assistance to educational programs, participation in research programs

About our users

- ❑ WDC for SEP serves scientists, students, researchers in our country and other countries
- ❑ Users prefer to take data sets from WDC in the form of separate (ASCII) files or selected from computer data base
- ❑ Some users request the results of data processing: statistics, spatial and temporal distributions, cross-sections and other products

Example: Spatial distribution of earthquake epicenters and depth cross-section





Since 1995 the Center has own Internet site and provides free access to Solid Earth physics information resource.

Digital data, metadata, thematic and problem oriented databases are available on-line at this site.

Special user interface is developed to provide comfortable means for finding, reviewing, visualization, and selection data in net and assignment them to user.

Main page of WDC for SEP web-site

Адрес: <http://zeus.wdcb.ru/wdcb/sep/hp/data.html>



World Data Center

for Solid Earth Physics

Moscow, Russia



[WDC System](#)

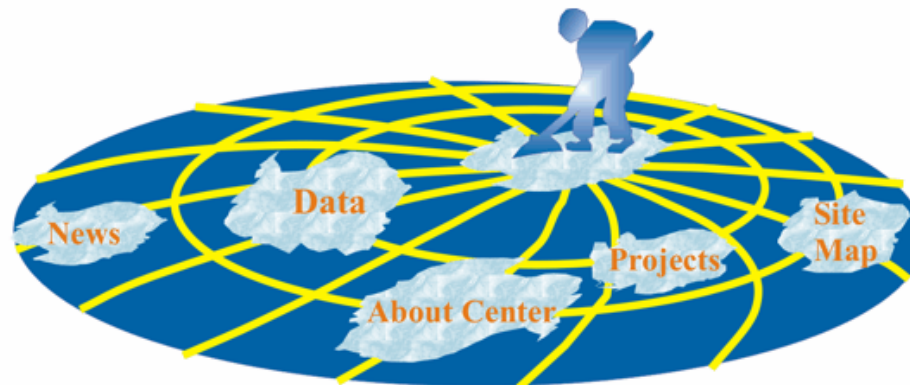
[WDC System Guide](#)

[WDC in Russia](#)

[Rus \(Win\)](#)

Welcome to the World Data Center for Solid Earth Physics in Moscow, Russia!

This web site gives information on the WDC for SEP, Moscow, its archives and data bases for some geophysical disciplines, on-line data and possibility for data search, activity in some scientific projects and programs and on many related links.



The World Data Center for Solid Earth Physics, Moscow collects, stores, exchanges with other WDC's and disseminates a wide range of data on solid Earth physics disciplines. These data are used as the basis for fundamental and applied scientific researches and education. The WDC for SEP invites scientists, institutions and other authors and data generators to contribute data to our Center in order to make data more widely available to the scientific community.

Main page of WDC for SEP web-site- List of Disciplines

World Data Center for Solid Earth Physics, Moscow - WDC for SEP site - Microsoft Internet Explorer


Файл Правка Вид Избранное Сервис Справка



Назад Поиск Избранное Медиа

Адрес: <http://zeus.wdcb.ru/wdcb/sep/hp/data.html>

Geophysical Center, Russian Academy of Sciences


World Data Center
for Solid Earth Physics
Moscow, Russia

 [Russian](#)


[WDC System](#) [WDC System Guide](#) [WDC in Russia](#) [Rus \(Win\)](#)

Welcome to the World Data Center for Solid Earth Physics in Moscow, Russia!

Solid Earth Physics Data 

Solid Earth Physics Data
Seismology
Gravimetry
Heat Flow
Magnetic Measurements
Archeo-&Paleomagnetism
Recent Movements

on the WDC for SEP, Moscow, its archives and data bases
data and possibility for data search, activity in some
related links.



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Page with information about Center

World Data Center for Solid Earth Physics? Moscow - site of the WDC for SEP - Microsoft Internet Explorer




File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites

Address <http://zeus.wdcb.ru/wdcb/sep/hp/about.html> Go

Geophysical Center, Russian Academy of Sciences

World Data Center
for Solid Earth Physics
Moscow, Russia

 [Russian](#)  

[WDC System](#) [WDC System Guide](#) [WDC in Russia](#) [Rus \(Win\)](#)

About Center

Main Page	
Data	
About Center	<p>World Data Center for Solid Earth Physics, Moscow exists since the 1971 as the department of the Geophysical Center of the Russian Academy of Sciences and operates under the auspices of the National Geophysical Committee of the Russian Academy of Sciences. It is a part of the World Data Center System of the International Council for Science (ICSU). The activity of the WDC for SEP, Moscow is carried out according to the "Guide to the World Data Center System". The WDC for SEP, Moscow maintains extensive archives of data on seismology, gravimetry, geomagnetism, geothermics, recent movements, marine geology and geophysics, topography and so on.</p>
News	
Projects	<p>The WDC for SEP provides access to all these data and also serves as information and referral center because information on other data centers and data providers, interesting data sets, and data bases is collected along with data.</p>
Information for Users	<p>The WDC for SEP responds to data and information requests from users from all over the world, and serves visitors from any country.</p>
Address	
Where we are	<p>The WDC for SEP, Moscow co-operates with other WDC's (WDC for SEG, Boulder, WDC for MGG, Boulder, WDC for Seismology, Denver, WDC's in China and others) and some analytical and special Centers (ISC, BGI, EMSC, ICRCM, GS RAS ...). It is connected with many research institutes and permanent services in Russia and other countries.</p>
Staff	<p>The WDC for SEP is active in scientific projects and programs, both in International and in Russian. Over</p>

Solid Earth Physics Data On-line

- ☐ Information on Seismological Stations
- ☐ Wave forms - Seismograms
- ☐ Phase Data - Seismological Bulletins
- ☐ Hypocenter Data - Earthquake Catalogs
- ☐ Catalogs of Gravity measured values
- ☐ Maps of the Earth's gravity field and its anomalies
- ☐ Catalogues of measured values of Geomagnetic field elements
- ☐ Maps of isolines of Geomagnetic field elements
- ☐ Annual mean values of geomagnetic elements
- ☐ Catalogs of Heat Flow data
- ☐ Catalogs of paleomagnetic determinations of the ancient geomagnetic field elements
- ☐ Special Data Bases

Metadata Standard

At creation of databases and on-line resources the base of metadata is simultaneously formed in WDC. The metadata international standard of Federal Geographic Data Committee (FGDC) is used. It is most widespread for Digital Geospatial Metadata.

Structure of metadata base

List of Parameters describing a data set:

- identifier of a resource;
- name of a resource ;
- author (person, organization, ... addresses);
- keywords;
- description of a resource, summary;
- discipline;
- kind of observation;
- territorial covering;
- time interval;
- areas of change of main parameters;
- bibliographic references;

Structure of metadata base

List of Parameters describing the same data set,
as the Internet-resource

- organization providing access on-line;
- Internet-address;
- responsible person;
- date of creation of access to a resource;
- date of last updating;
- language;
- type;
- volume;
- description of a format of data

DataBase: Seismic Stations and Instruments of the Unified System of Seismic Observations in the CIS countries

Aspec <http://socrates.wdcb.ru/sscc>

Click on the map and drag to select stations of interest
use Zoom mode button to make zoom or use
[advanced search](#)

Fill the form and click Find to continue ...

Station name (english) **MOS**

Region **All regions**
Altai-Sayan Territory

Country **All countries**
Armenia

Start date (yyyyddd) from to

Latitude from to

Longitude from to

Elevation from to

Used instruments ☒ short-period ☒ broadband
☒ long-period ☒ unknown period

Instrument type **All types**
APT1
ASZ
MI3

Find **Clear**

Station name	Region	Country	Start date	Latitude	Longitude	Elevation
Moscow	Baltic Shield, West Russia, Ural	Russia	1936001	55.738	37.625	0.124

Instruments

Name	Type	Band	Hor. angle	Ver. angle
Kimos L-Per seismometer (DIS,V=200,T=0.2-15)	SKD	I	0.0	90.0
Kimos L-Per seismometer (DIS,V=200,T=0.2-15)	SKD	I	90.0	90.0
Kimos L-Per seismometer (DIS,V=800,T=0.2-19)	SKD	I		0.0

Access to detailed station data on earthquakes

World Data Center for Solid Earth Physics, Moscow - Seismological Bulletin - Microsoft Internet Explorer

Вид Избранное Сервис Справка

Поиск Избранное Медиа

http://www.wdcb.ru/WDCB/sep/seismology.en/bul_Obninsk.en.html

Seismological Bulletin Geophysical Survey RAS, Obninsk

Decade Seismological Bulletin preparing by the Central Experimental-Methodic Expedition of the Geophysical Survey of the Russian Academy of Sciences encloses data on the main earthquake hypocentral parameters and detailed station data for events with body wave magnitudes more than 4.0 for the territory of Russia and more than 4.5-5 for external territories.

Bulletin is available beginning from May, 1995 up to date in view ASCII files. Five different record types can cover to one event:

Record Type	Record Identifier	Record Name
1	Epicentral record	Head
2	Magnitude record	Magn
8	Comment	Comm
10	First Phase Record	StaP
11	Second Phase Record and Maximum	StaSComm

Length of each record is 80 bytes. [Format Description](#)

1995 1996 1998 1999
Month Month Month Month
2000 2001 2003 2004
Month Month Month Month

January
February
March
April
June
July
August
September
October

Interactive Access to Earthquake Catalog

Java-applet

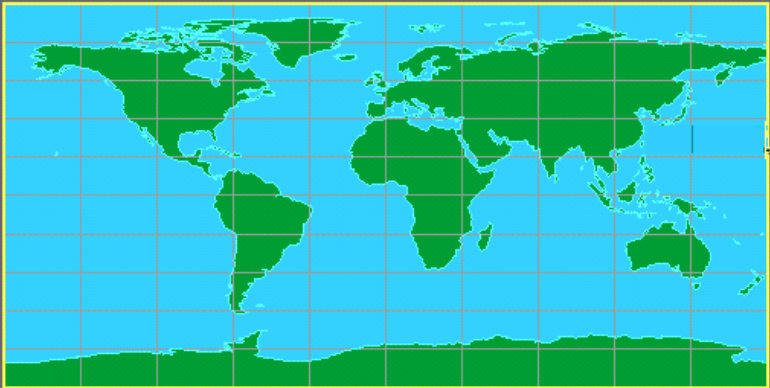
Solid Earth Physics, Moscow - Seismological Data - Microsoft Internet Explorer

Tools Help

ru/wdcb/sep/hp/seismology.html

Data Request Form

Seismological Catalogue (Java-based Version) [FORMAT](#) [HELP](#)



Area of search: Map:

Time interval	Reset
Magnitude interval	Submit
Depth interval (in km)	

Last revision December 7, 2005

Non-Java form

Solid Earth Physics, Moscow - Seismological Data - Microsoft Internet Explorer

Tools Help

ru/wdcb/sep/hp/seismology.html

Data Request Form

Seismological Catalogue (Non-Java Version) [FORMAT](#) [HELP](#)

Time, magnitude, and depth intervals:

Start time, year Month Day

End time, year Month Day

Magnitude minimal Maximal

Depth (km), minimal Maximal

Form of selected area: ☐ Rectangle ☐ Circle ☐ Polygon ☒ Global

Lat min Center Lat Nodes

Lat max Lon Latitude/Longitude

Lon min Radius(km)

Lon max

[RESET](#) [SUBMIT REQUEST](#)

Example of filled inquiry form and selected data

Area Search: Map:

Time interval
From day To day
From month To month
From year To year

Magnitude interval
Lower magnitude Upper magnitude

Depth interval (km)
Upper depth Lower depth

Selected Data

Date	Time	Latitude	Longitude	Depth	Magnitude
1983 1 1	5 32 47.9	34.750N	149.050E	600	5.3 MPSP
1983 1 1	10 46 22.5	27.860N	145.490E	33	4.9 MPSP
1983 1 1	11 18 6.7	31.520N	147.200E	35	5.5 MPSP
1983 1 1	21 54 22.7	29.760N	130.680E	3	4.8 MPSP
1983 1 1	23 6 24.1	39.830N	140.340E	33	4.7 MPSP
1983 1 2	1 29 35.5	41.660N	136.060E	5	
1983 1 2	6 20 6.5	37.630N	127.150E	33	

Page providing access to data of Gravity Measurements on the Russian Research Vessels

World Data Center for Solid Earth Physics - - Microsoft Internet Explorer -

вис Справка

Поиск Избранное Медиа

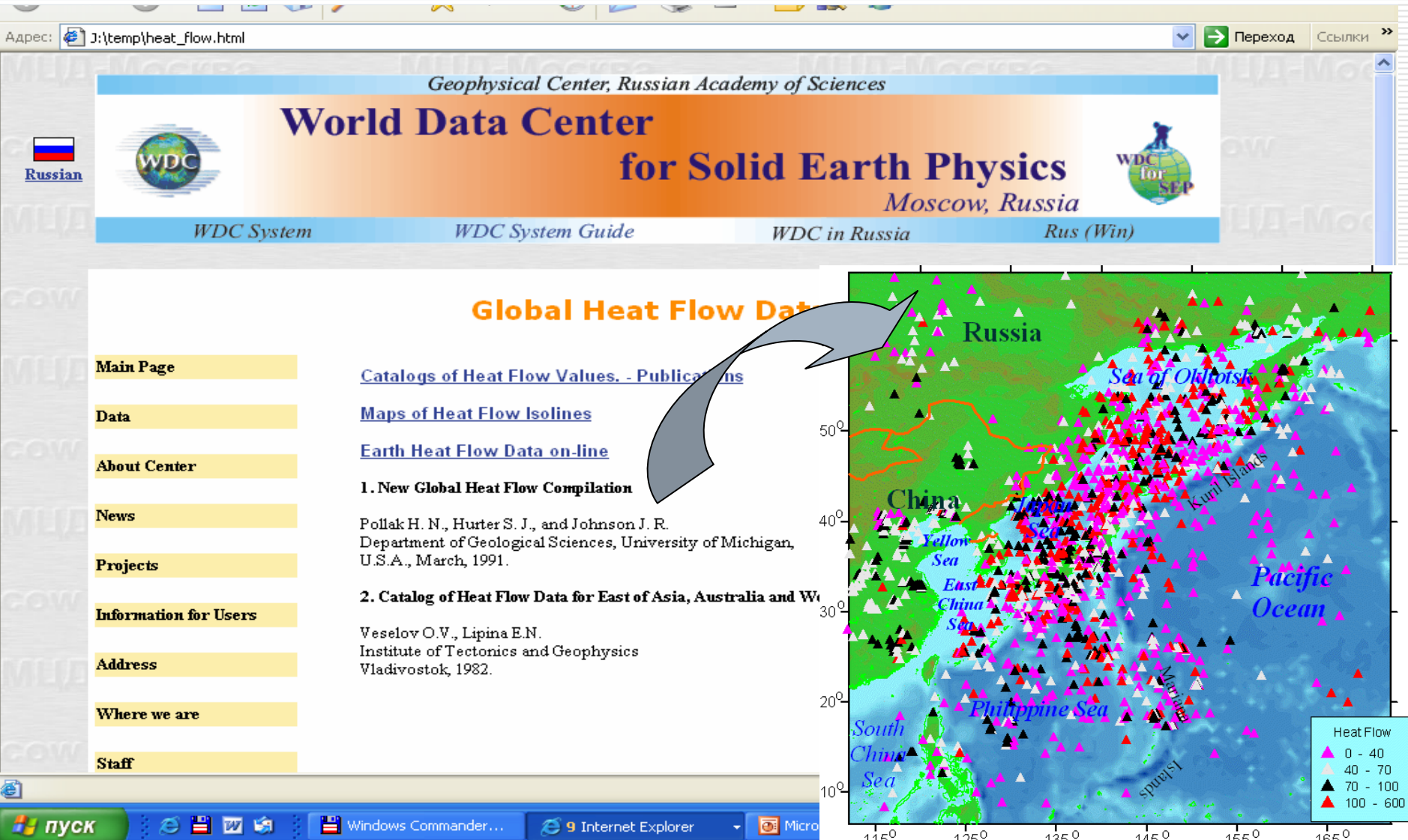
rp/gravity.ru/grav_marine.ru.html

Gravity Measurements on the World Ocean Area of Water

[Format Description](#)

Vessel name	Voyage	working time, years	Profile length, miles	Number of points
Vityaz	VIT42	1967	4804	1888
	VIT43	1968	5142	2238
	VIT47	1970	296	74
	VIT49	1970-1971	3674	1807
	VIT51	1972	6541	5433
	VIT53	1972	6961	3517
Pegas	PEGASVII	1977	462	132
Dm. Mendeleyev	DME03	1970	9990	3751
	DME05	1971	-	5736
	DME06	1971	4757	4238
	DME07	1971-1972	8025	5413
	DME09	1973	9535	4793
	DME10	1973	4477	4424
	DME18	1977	3133	4573
	DME21	1978	9725	5101
	DME24	1980	7778	6554
	DME28	1982	7344	4009
	DME30	1982-1983	-	4899
	DME31	1983-1984	-	15648
	DME37	1986	17506	14939
	DME38	1986-1987	5194	5803
	DME40	1988	111	21

Page providing access to Heat Flow data & example of selected data for Philippine Sea region



Participation of WDC for SEP in Scientific Projects

World Data Center for Solid Earth Physics
(Moscow, Russia) takes part in the Project
"International Polar Year 2007-2008"

The Center has made a special site on which all
data on Arctic and Antarctic regions available in
our archives are presented.

At present this site is only in Russian.

Example: Seismological Data for Arctic

Earthquake spatial distribution and location of seismological stations



List of Gravity Catalogs & Maps for Arctic and Antarctic

Help reg

Search Favorites

py/grav_cat&maps.ru.html

Геофизический центр Российской академии наук
центр данных по Солнечно-Земной физике и Мировой центр данных по физике твердой Земли

АРКТИКА и АНТИКА

Каталог гравиметрических наблюдений в Антарктиде

Maps & Books

WDC for SEP

- Буланже Ю.Д., Авсюк Ю.Н., ...
Каталог гравиметрических наблюдений в Антарктиде. /3139 пунктов, по 1960 год./-
Институт Физики Земли АН СССР, Москва, 1962.
- Грушинский Н.П., Корякин Е.Д., Строев П.А., Лазарев Г.Е., Сидоров Д.В., Вирская Н.Ф.
Каталог гравиметрических пунктов Антарктики. /1955-1965 гг., 5493 пункта./- В кн.: Труды
ГАИШ, т.42 (В.В.Нестеров, отв. ред.). Издательство Московского Университета, Москва,
1972, стр. 115-311.
- New Zealand Observations of Gravity in Antarctica during 1956/57, 1957/58 Summer
Seasons. /Catalogue, 204 Stations/.
- Bull C.
Gravity Observations in the Koettlitz Glacier Area, Southern Victoria Land, Antarctica. /With
Map, Scale 1:300 000./- Institute of Polar Studies, Ohio State University, Contribution N15,
Columbus, 1962.
- Valores de Gravedad Observada Desde Base General Belgrano Hasta el Polo Sur. /Catalogue

Participation of WDC for SEP in Scientific Projects

WDC for SEP takes part in the Program InterMARGINS.

InterMARGINS is International and Interdisciplinary initiative concerned with all aspects of continental margin research.

Our participation in the Program is connected with studying active subduction zones of Pacific ocean.

Next slides describe Internet-Pages of our web-site on this Program.

Address  <http://www.intermargins.org/index.php>

InterMARGINS

Continental Margin Research

HOME

InterMARGINS

Administration

Science Activity&Information

Publication

Site Map

InterMARGINS

Continental Margin Research

InterMARGINS is an international and research.

Address  <http://www.wdcb.ru/lithosphere/lithosphere.html>

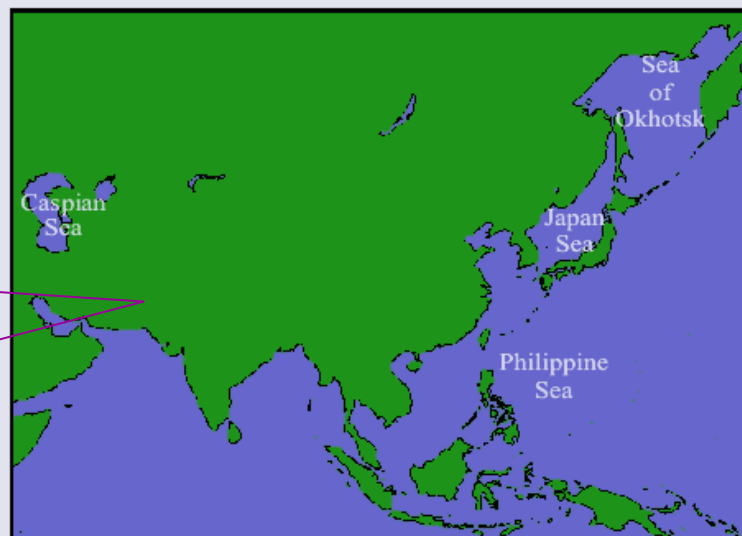
*Geophysical Center, Russian Academy of Sciences
World Data Center for Solid Earth Physics, Moscow*

Lithosphere of Margin and Inner Seas

Language 

Site sections 

Site sections
[Sea of Okhotsk](#)
[Japan Sea](#)
[Philippine Sea](#)
[Caspian Sea](#)
[Main Page](#)



Sea of Okhotsk

Japan Sea

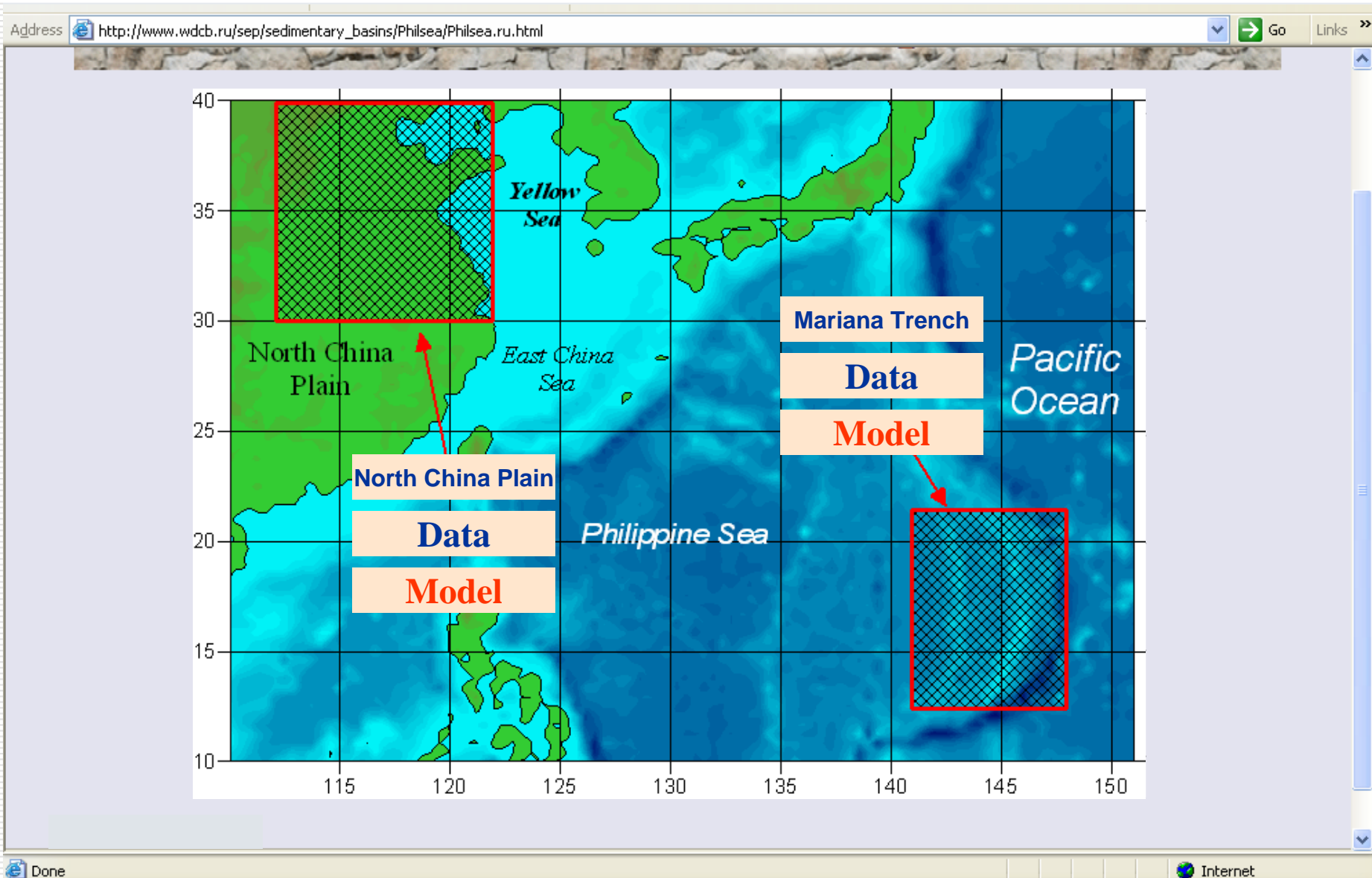
Philippine Sea

Caspian Sea

ar of the
nces took part
hes on
tions of the
arginal seas in
a transition zone from Asian continent to
the Pacific Ocean investigated under the
Geotraverse International Project. A great
deal of various geological and
geophysical data sets were collected. A
part of these data has been used for the
construction of the lithosphere models
along the separate traverses in the Sea of
Okhotsk, the Japan, and Philippine Seas
<http://www.wdcb.ru/GCRAS/traverse.html>
(This work was supported by the Russian
Foundation for Basic Research, Project N
98-07-90201).

Presently, in the Geophysical
Center of the Russian Academy of

DataBase: Sedimentary basins of Philippine Sea region



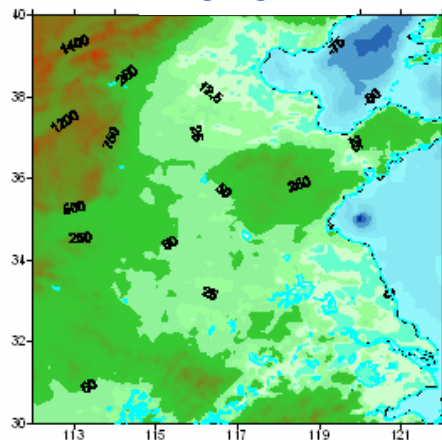
DataBase: Sedimentary basins of Philippine Sea region

Address http://www.wdcb.ru/sep/sedimentary_basins/Philsea/data_NChinaPl.ru.html

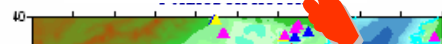
North China Plain Geological & Geophysical Data

30° N - 40° N. 112° E - 122° E

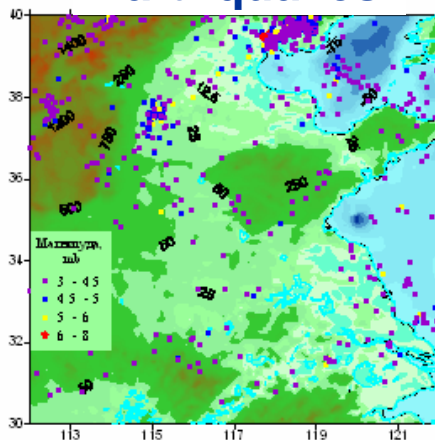
Relief



Data Format



Earthquakes

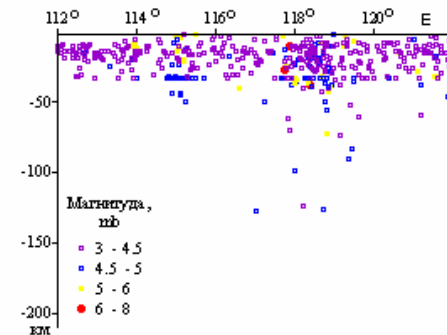


Data Format



Seismological Profile

положение гипоцентров вдоль
широтного профиля



Данные ГСЗ



Format Description for the Bathymetric Data

POSITIONS	LENGTH OF FIELD	FORMAT	DESCRIPTION
1- 6	6	(f6.3)	Latitude in degrees
8-14	7	(f7.3)	Longitude in degrees
17-21	5	(a5)	Depth in meters

PEK	*1965/09/04	04:21:33	36.30N	113.40E	4.3	Eastern China
ISC	*1966/03/07	21:29:17	37.35N	114.96E	5.5B	242 North-Eastern
ISC	*1966/03/07	22:19:46	37.40N	114.90E	33 4.7B	10 North-Eastern
ISC	*1966/03/08	00:04:52	37.50N	115.20E	33 4.3B	13 North-Eastern
ISC	*1966/03/08	02:04:21	37.40N	114.90E	33 4.7B	22 North-Eastern
ISC	*1966/03/08	03:46:39	37.61N	114.91E	44 4.8B	33 North-Eastern
ISC	*1966/03/08	06:25:13	37.79N	115.00E	33 5.0B	17 North-Eastern
ISC	*1966/03/08	07:36:42	37.40N	114.95E	7 4.7B	29 North-Eastern
ISC	*1966/03/11	06:20:48	37.00N	115.00E	33 4.4B	18 North-Eastern
ISC	*1966/03/11	06:22:42	37.74N	114.00E	33 4.5B	15 North-Eastern
ISC	*1966/03/19	16:59:42	37.35N	114.96E	31 4.7B	39 North-Eastern
ISC	*1966/03/22	05:57:46	37.87N	114.81E	31 4.5B	19 North-Eastern
ISC	*1966/03/22	08:11:33	37.54N	115.00E	3 5.6B	204 North-Eastern
ISC	*1966/03/22	08:12:24	37.40N	115.00E	3 5.6B	204 North-Eastern

Conclusion

At present the global distributed geophysical data resource is formed in the Internet. As indicated above the WDC for Solid Earth Physics introduces the network technologies into its activity and realizes the remote access to the WDC's information resources.