NextData

un sistema nazionale per la raccolta, conservazione, accessibilità e diffusione dei dati ambientali e climatici in aree montane e marine

SOTTOPROGETTO 2

Sistema di archivi digitali, climatici e ambientali di lungo periodo e studi pilota di utilizzo dei dati

WP 2.1, 2.3, 2.4

Archivio reti osservative di alta quota

Sintesi attività

Maria Teresa Melis, Filippo Locci , Francesco Dessì ,
(Università di Cagliari, Ev-K2-CNR, ISAC-CNR)

Roma, 3 maggio 2014

Unità di Ricerca EvK2CNR

SP2 - struttura

WP	TITOLO	REFERENTE/ PARTNER	MESE INIZIO	MESE FINE
2.1	Archivio reti osservative di alta quota	URT Ev-K2-CNR ISAC	1	48
2.2	Archivio reti osservative marine e ricostruzione climatica	INGV URT Ev-K2-CNR	1	48
2.3	Archivio dati delle carote di ghiaccio e dati biologici di lunga conservazione	DISAT-UNIMIB URT Ev-K2-CNR	1	48
2.4	Archivio dati paleoclimatici da carote sedimentarie	IAMC URT Ev-K2-CNR, DTA, INGV	1	48
2.5	Archivio dati numerici e previsionali	CMCC CASPUR, ISAC, ICTP, ENEA	1	48
2.6	Portale dei accesso ai dati	ISAC CASPUR, ICTP, ENEA, Ev-K2-CNR, DTA,INGV, CMCC, DISAT	1	48

SP2 – WP 2.1 (URT Ev-K2-CNR) attività

Interfaccia SHARE GeoNetwork:

- Rivisitazione grafica dell'interfaccia
- Sviluppo navigatore
- Configurazione e nuova installazione

DB metadati:

- Supporto ai wp 2.3 e 2.4 e al progetto DATAGRALP
- Popolamento dei metadati

DB Dati:

- Normalizzazione dei dati IAMC
- Caricamento dei dati in WDBPaleo ICD e SCD


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Dipartimento Scienze del Sistema Terra e Tecnologie per l'Ambiente
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ADVANCED SEARCH
What are you looking for?
DOMAINS
METADATA
DATASET
2000 km
1000 mi
1 : 139770286
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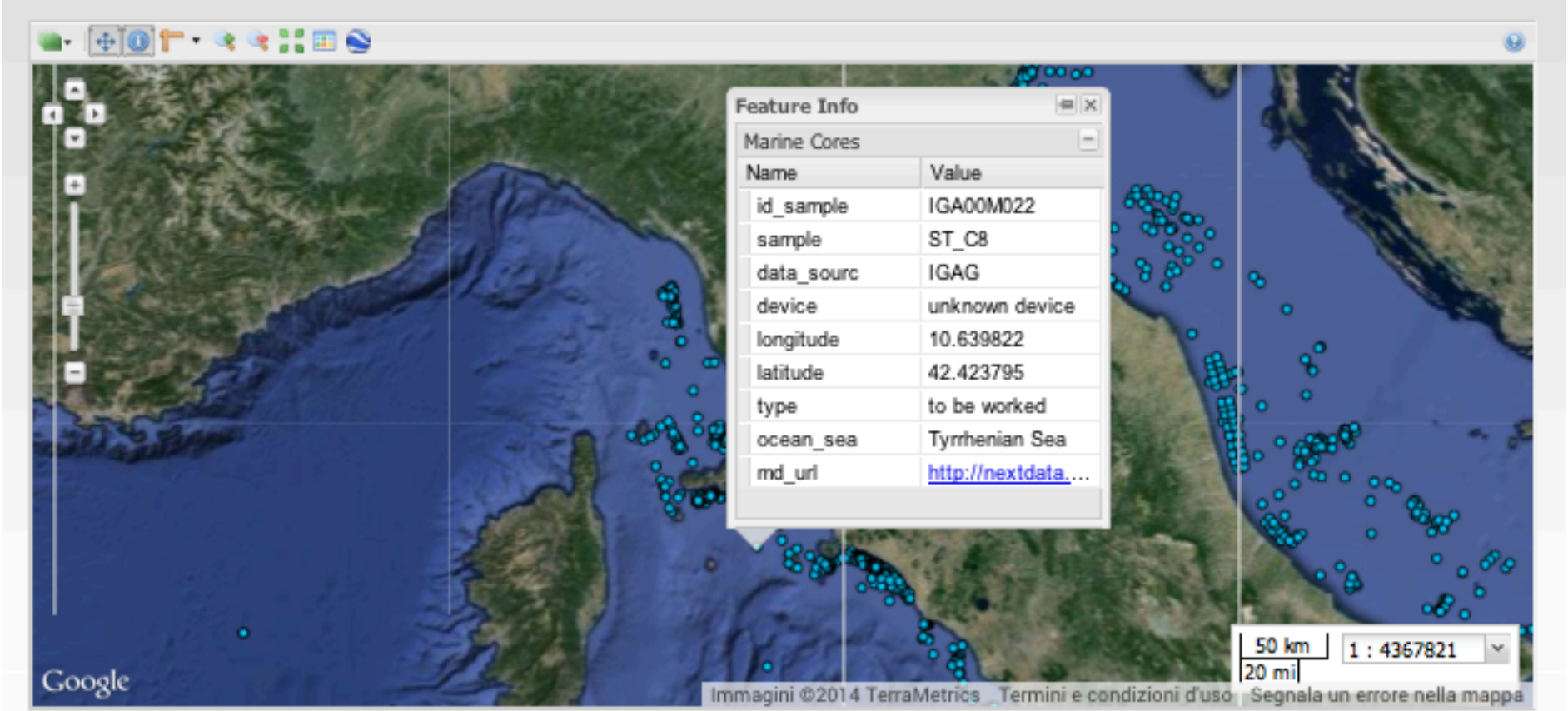
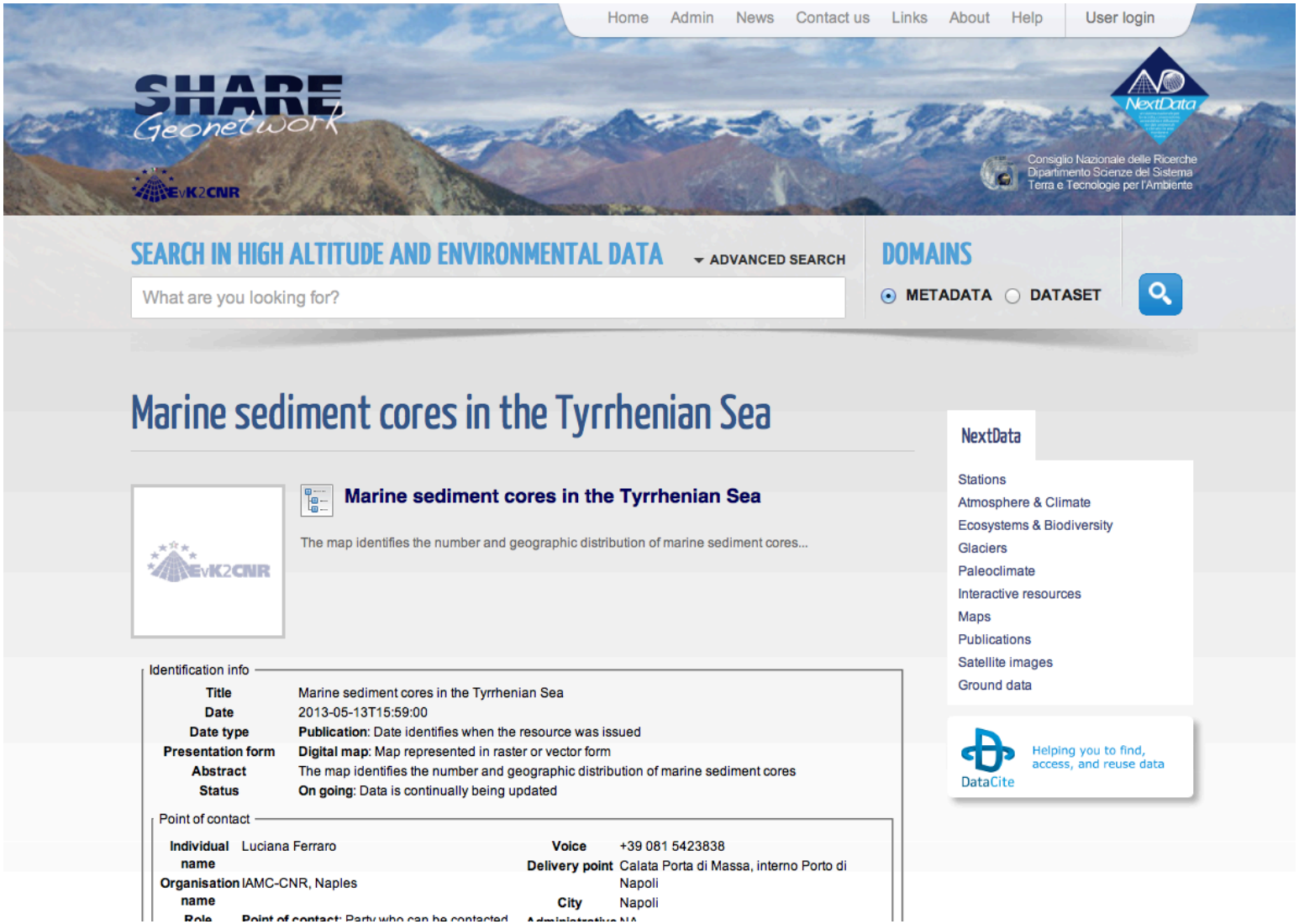
Helping you to find, access, and reuse data



full-screen map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ADVANCED SEARCH
What are you looking for?
DOMAINS
METADATA DATASET
Marine sediment cores in the Tyrrhenian Sea
Marine sediment cores in the Tyrrhenian Sea
The map identifies the number and geographic distribution of marine sediment cores...
Identification info
Title Marine sediment cores in the Tyrrhenian Sea
Date 2013-05-13T15:59:00
Date type Publication: Date identifies when the resource was issued
Presentation form Digital map: Map represented in raster or vector form
Abstract The map identifies the number and geographic distribution of marine sediment cores
Status On going: Data is continually being updated
Point of contact
Individual name Luciana Ferraro
Organisation name IAMC-CNR, Naples
Voice +39 081 5423838
Delivery point Calata Porta di Massa, interno Porto di Napoli
City Napoli
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Paleoclimate
Interactive resources
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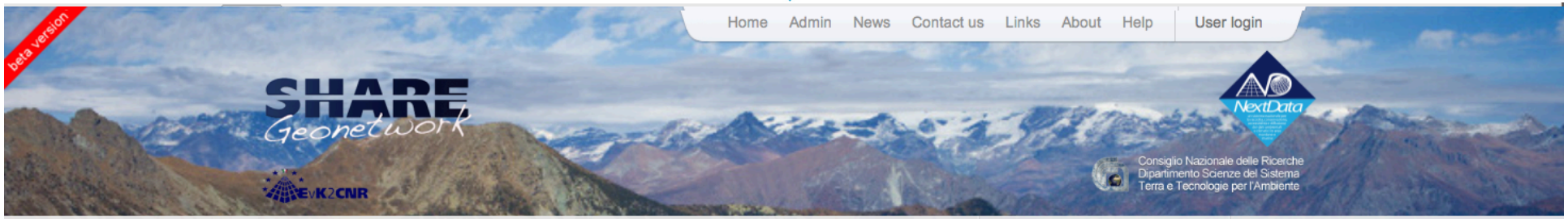

SEARCH IN HIGH ALTITUDE AND ENVIRONMENTAL DATA ▾ ADVANCED SEARCH

What are you looking for?

DOMAINS

METADATA DATASET

Barometer

Barometer

The DQA240 model is a sensor manifactured by LSI-Lastem (Italy), has been installed in 2005 on Dosdè station. This instrument permit to measure atmospheric pressure. Technical characteristics: - range: 800-1100 hPa - effect of thermal: 0.1hPa/°C - maximum pressure limit: 2000 hPa - Load resistance: >100kOhm - weight: 130 gr...

Identification info

Title	Barometer
Date	2011-04-12T19:08:00
Date type	**Publication**: Date identifies when the resource was issued
Abstract	The DQA240 model is a sensor manifactured by LSI-Lastem (Italy), has been installed in 2005 on Dosdè station. This instrument permit to measure atmospheric pressure. Technical characteristics: - range: 800-1100 hPa - effect of thermal: 0.1hPa/°C - maximum pressure limit: 2000 hPa - Load resistance: >100kOhm - weight: 130 gr
Purpose	The purpose is to measure atmospheric pressure.
Status	**On going**: Data is continually being updated

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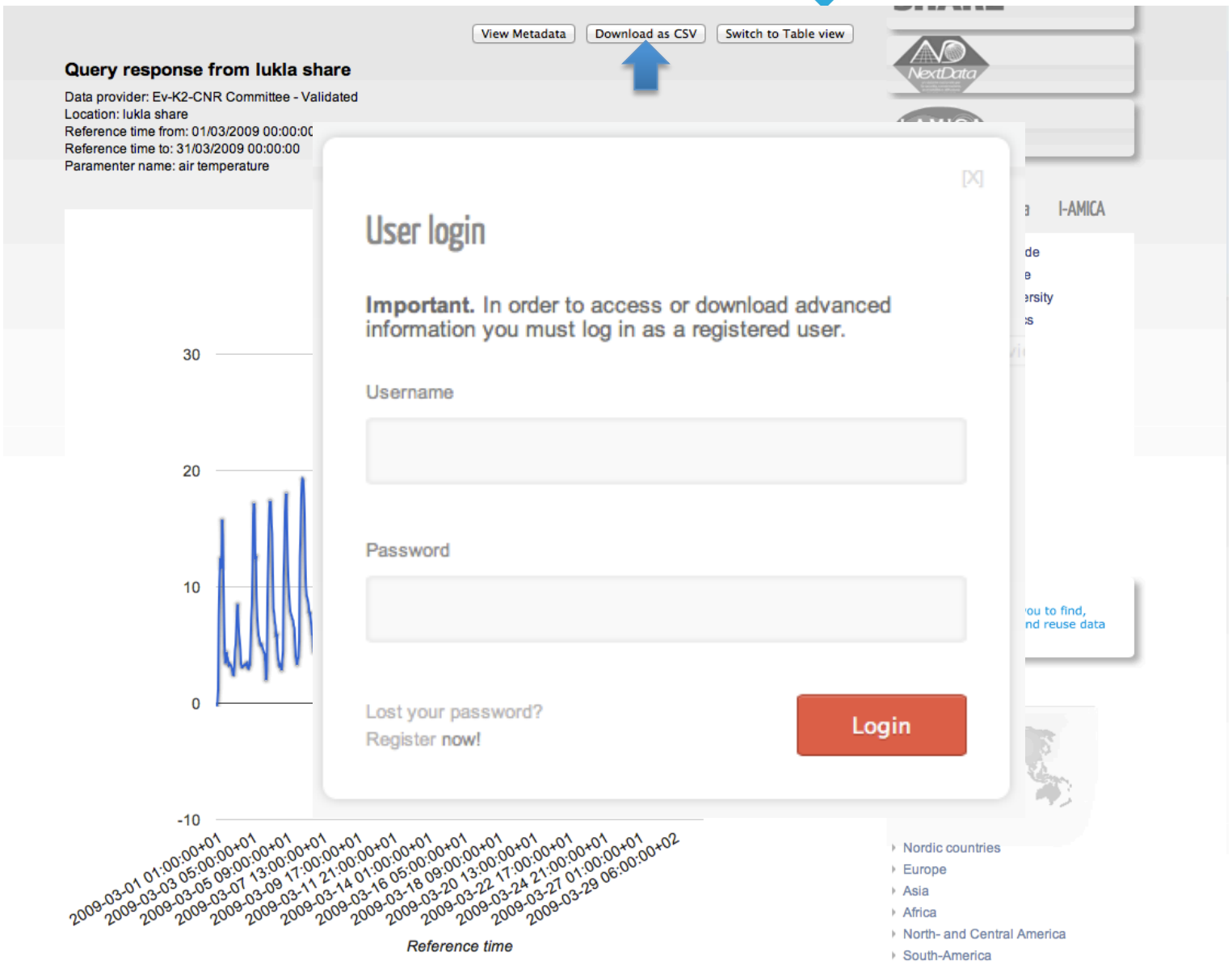
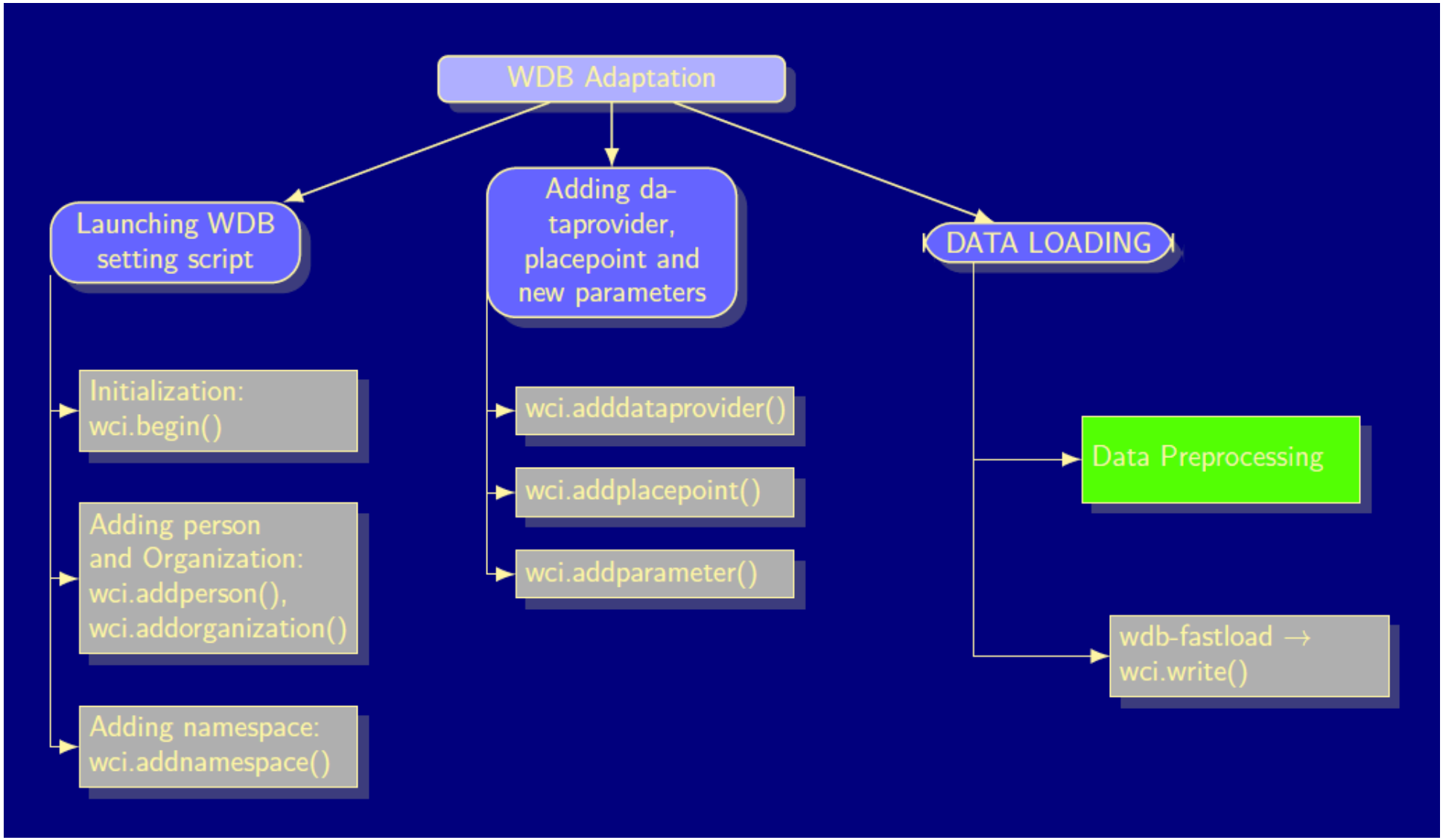
- Stations
- Atmosphere & Climate
- Ecosystems & Biodiversity
- Glaciers
- Paleoclimate
- Interactive resources
- Maps
- Publications
- Satellite images
- Ground data

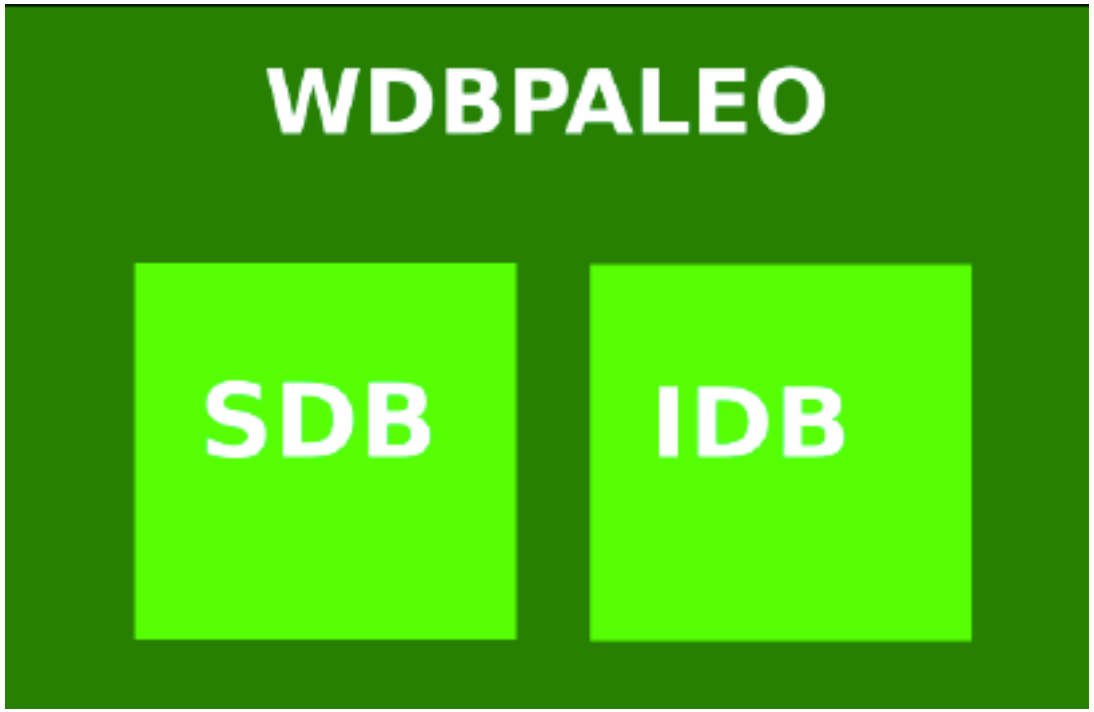
DataCite Helping you to find, access, and reuse data

DATA sharing



Unità di Ricerca EvK2CNR


WDB Adaptation
Launching WDB setting script
Adding da-taprovider, placepoint and new parameters
DATA LOADING
Initialization: wci.begin()
Adding person and Organization: wci.addperson(), wci.addorganization()
Adding namespace: wci.addnamespace()
wci.adddataprovider()
wci.addplacepoint()
wci.addparameter()
Data Preprocessing
wdb-fastload → wci.write()



In brief, according to the WDB procedure setting, the data loading follows this steps:

- geographical information
- setting
- dataprovider setting
- parameters adding
- upload data from sea/ice core analysis (raw numeric value)

The WDBPALEO system
WDBPALEO data loading - SDB

Marine sediment core data collected in SDB are the result of the following analysis and models output:

- Quantitative analysis of planktonic foraminifera (468 samples)
- Quantitative analysis of calcareous nannofossils (187 samples)
- Study on carbon and oxygen stable isotopes (468 samples) on the planktonic foraminifer species: Globigerinoides ruber
- Tephrostratigraphic study (petrochemical analysis) on 8 levels of tephra
- 8 AMS14C datings and 210Pb e 137Cs radionuclides dating of the first 40 cm of core

The WDBPALEO system
WDBPALEO data loading - SDB

Model output available data:

- Quantitative data on the distribution of planktonic foraminifera and calcareous nannofossils during the last 2000 years
- δ18O e δ13C measurements data on the Globigerinoides ruber during the last 2000 years
- Quantitative data on the distribution of the benthic foraminifera during the last 500 years
- Petrochemical analysis of the 8 levels of tephra recognized in the C90 1m-C90-C836 composite core.

Seguendo le stesse indicazioni studiate per WDBPALEO-IDB,
SDB è stato inizializzato inserendo il data provider e aggiungendo le informazioni geografiche

```
--SDBPALEO INIT--
SELECT wci.begin('sdbpaleo');

SELECT wci.addPerson(   'Filippo',
                        'Locci',
                        'Dr',
                        'Hi Filippo',
                        'FiL',NULL,
                        'male', NULL,
                        NULL,'2012-09-01','2999-12-31',NULL
                        );

INSERT INTO wdb_int.organizationtype VALUES ('non-profit association','A non-profit organization');

SELECT wci.addOrganization('Ev-K2-CNR - IAMC.CNR',
                                'Ev-K2-CNR - IAMC.CNR',
                                'non-profit association',
                                '1992-01-01','2999-12-31',
                                'NEXTDATA Project');

SELECT wci.addNameSpace(1111,
                                'Test SBD
namespace',
                                'namespace for SDB TESTING',
                                'production',
                                'Ev-K2-CNR - IAMC.CNR',
                                'FiL',
                                '2013-10-01'
                                );

SELECT wci.begin('sdbpaleo',1111,1111,1111);

SELECT wci.addDataProvider('IAMC.CNR',
                                'wci user',
                                'Point',
                                '1000 years',
'SeaCore Data from IAMC.CNR in the framework of NextData project'
                                );

--      PLACE NAME      LON             LAT
--      IAM00A076       14.7080         40.596
--      IAM00A077       14.7063         40.596
--      IAM00A078       14.7078         40.599

SELECT wci.addorupdateplacepoint('IAM00A076',
                                st_geomfromtext('POINT(14.7080 40.596)',4326),
                                '-infinity', 'infinity' );

SELECT wci.addorupdateplacepoint('IAM00A077',
                                st_geomfromtext('POINT(14.7063 40.596)',4326),
                                '-infinity', 'infinity' );

SELECT wci.addorupdateplacepoint('IAM00A078',
                                st_geomfromtext('POINT(14.7078 40.599)',4326),
                                '-infinity', 'infinity' );

select wci.copyparameternamespace(0);
```

Nuovi parametri inseriti, che rappresentano gli indicatori biotici e abiotici che emergono dalle analisi dei sedimenti marini

- planktonic Foraminifera
- benthic Foraminifera
- nannofossil
- radionuclides
- stable isotopes
- magnetic susceptibility
- secular variation of Earth's magnetic field

Nuove tabelle, viste e relazioni

- wdb_int.coredatingmeasurement.sql: to store date information about sediment core
- wci.addcoredatingmeasurement: to load date information automatically
- wci_int.floatvalue_v modified table, useful in the retrieval data process
- wci.writepaleo new functiom, to write data into the database

WDBPALEO – SDB
Marine Sedimentary Core Data

- Data Provider: IAM.CNR

- Benthic foraminifera analysis
- Isotopes analysis
- Magnetic susceptibility analysis
- Nannofossil analysis
- Planktonic foraminifera analysis
- Pollen analysis
- Radionuclides analysis

Tipi di analisi sui dati inseriti

- Table: wdb_int.coredatingmeasurement
- Contiene le informazioni sulle sezioni di carota con datazione e il tipo di datazione

SQL Editor | Graphical Query Builder

Previous queries | Delete | Delete All

```
SELECT wci.begin('sdbpaleo',1111,1111,1111);
SELECT  placename,
        validtime,
        datevalidfrom,
        datevalidto,
        corerange,
        label,
        climaticevent,
        ecobiozone,
        note
 FROM wdb_int.coredatingmeasurement;
```

Scratch pad

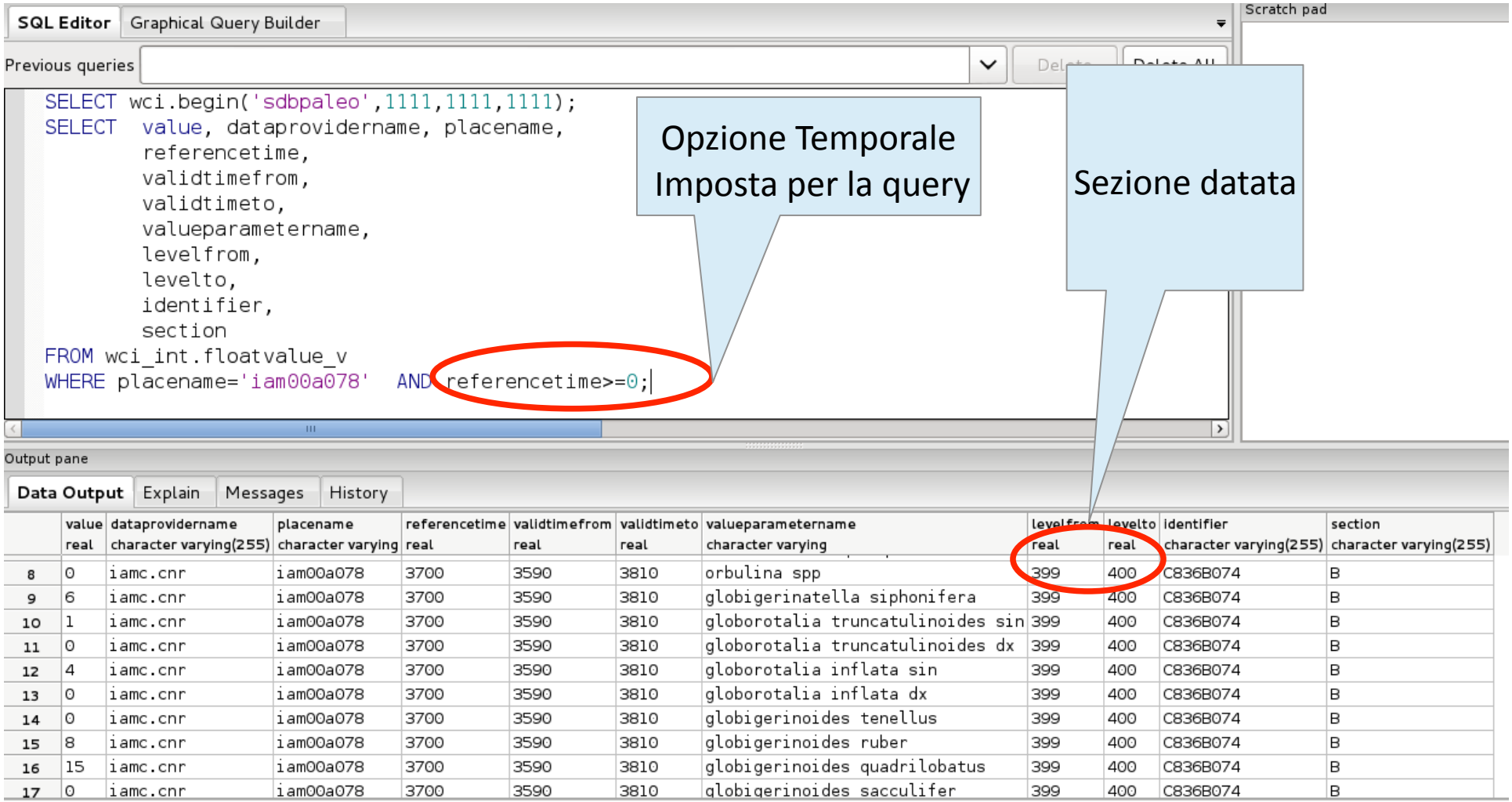
volume magnetic susceptibility'''

Output pane

Data Output | Explain | Messages | History

	placename character varying(255)	validtime real	datevalidfrom real	datevalidto real	corerange corelength	label character var	climaticevent character varying(255)	ecobiozone character v	note character varying(255)
1	iam00a076	268	188	348	(55,66)	tS1	Little Ice Age	1Fb	Post AD 1631 activity (Vesuvius)
2	iam00a077	268	188	348	(39,48)	tS1	Little Ice Age	1Fb	Post AD 1631 activity (Vesuvius)
3	iam00a077	1471	1421	1521	(172,178	tS1-gamma	Roman Period	1Fa	post AD 512 activity (Vesuvius)
4	iam00a077	1471	1421	1521	(216,295	tS2	Roman Period	1Fa	AD79 Pompeii (Somma-Vesuvius)
5	iam00a077	3300	3200	3400	(360,372	tS3	Middle Bronze Age	2F	AP6 (Somma-Vesuvius) <2.8 _x0001_ 50 cal. ka BP
6	iam00a077	4500	4280	4390	(412,420	tS4	Eneolithic	3F	Agnano M. Spina subplinian (Campi Flegrei)_x000d_4.482e4.625
7	iam00a078	268	188	348	(45,55)	tS1	Little Ice Age	1Fb	Post AD 1631 activity (Vesuvius)
8	iam00a078	1471	1521	1721	(170,180	tS1-gamma	Roman Period	1Fa	post AD 512 activity (Vesuvius)
9	iam00a078	1471	1521	1721	(220,328	tS2	Roman Period	1Fa	AD79 Pompeii (Somma-Vesuvius)
10	iam00a078	3300	3200	3400	(390,391	tS3	Middle Bronze Age	2F	AP6 (Somma-Vesuvius) <2.8 _x0001_ 50 cal. ka BP
11	iam00a078	3700	3590	3810	(399,400	tS3-alfa	Middle Bronze Age	2F	AP3 (Somma-Vesuvius) 2.8 _x0001_ 50 cal. ka BP
12	iam00a078	4500	4390	4610	(431,441	tS4	Eneolithic	3F	Agnano M. Spina subplinian (Campi Flegrei)_x000d_4.482e4.625

- Table: wdb_int.coredatingmeasurement
- Quando i dati vengono caricati questa tabella viene interrogata per associare una data al parametro che appartiene al campione di carota datato



	value real	dataprovidername character varying(255)	placename character varying	referencetime real	validtimefrom real	validtimeto real	valueparametername character varying	levelfrom real	levelto real	identifier character varying(255)	section character varying(255)
8	0	iamc.cnr	iam00a078	3700	3590	3810	orbulina spp	399	400	C836B074	B
9	6	iamc.cnr	iam00a078	3700	3590	3810	globigerinatella siphonifera	399	400	C836B074	B
10	1	iamc.cnr	iam00a078	3700	3590	3810	globorotalia truncatulinoides sin	399	400	C836B074	B
11	0	iamc.cnr	iam00a078	3700	3590	3810	globorotalia truncatulinoides dx	399	400	C836B074	B
12	4	iamc.cnr	iam00a078	3700	3590	3810	globorotalia inflata sin	399	400	C836B074	B
13	0	iamc.cnr	iam00a078	3700	3590	3810	globorotalia inflata dx	399	400	C836B074	B
14	0	iamc.cnr	iam00a078	3700	3590	3810	globigerinoides tenellus	399	400	C836B074	B
15	8	iamc.cnr	iam00a078	3700	3590	3810	globigerinoides ruber	399	400	C836B074	B
16	15	iamc.cnr	iam00a078	3700	3590	3810	globigerinoides quadrilobatus	399	400	C836B074	B
17	0	iamc.cnr	iam00a078	3700	3590	3810	globigerinoides sacculifer	399	400	C836B074	B

Punti caricati in WDBPALEO-SDB

SQL Editor | Graphical Query Builder

Previous queries

```
SELECT wci.begin('sdbpaleo',1111,1111,1111);
SELECT * FROM   wci.getplacepoint(NULL);
```

Scratch pad

Codici carote IAM.CNR

Output pane

Data Output | Explain | Messages | History

	placeid bigint	placegeometrytype character varying(80)	placegeometry geometry	placeindeterminatecode integer	placenamespaceid integer	placename character varying	placenamevalidfrom timestamp with time zone	placenamevalidto timestamp with time zone	originalsrid integer
1	30	point	0101000020E	1	1111	iam00a076	-infinity	infinity	4030
2	31	point	0101000020E	1	1111	iam00a077	-infinity	infinity	4030
3	32	point	0101000020E	1	1111	iam00a078	-infinity	infinity	4030
4	33	point	0101000020E	1	1111	iam00a079	-infinity	infinity	4030
5	34	point	0101000020E	1	1111	iam00a082	-infinity	infinity	4030
6	35	point	0101000020E	1	1111	iam00a083	-infinity	infinity	4030
7	36	point	0101000020E	1	1111	iam00a084	-infinity	infinity	4030
8	37	point	0101000020E	1	1111	iam00a085	-infinity	infinity	4030
9	38	point	0101000020E	1	1111	iam00a087	-infinity	infinity	4030
10	39	point	0101000020E	1	1111	iam00a089	-infinity	infinity	4030
11	40	point	0101000020E	1	1111	iam00a090	-infinity	infinity	4030
12	41	point	0101000020E	1	1111	iam00a086	-infinity	infinity	4030
13	42	point	0101000020E	1	1111	iam00a088	-infinity	infinity	4030

Esempio query:
Magnetic susceptibility

SQL Editor | Graphical Query Builder

Previous queries | Delete | Delete All

Scratch pad: volume magnetic suscep

```
SELECT wci.begin('sdbpaleo',1111,1111,1111);
SELECT  value, dataprovidername, placename,
        referencetime,
        validtimefrom,
        validtimeto,
        valueparametername,
        levelfrom,
        levelto,
        identifier,
        section
FROM wci_int.floatvalue_v
WHERE valueparametername='volume magnetic susceptibility' and value>10
```

Output pane

Data Output | Explain | Messages | History

	value real	dataprovidername character varying(255)	placename character varying	referencetime real	validtimefrom real	validtimeto real	valueparametername character varying	levelfrom real	levelto real	identifier character varying(255)	section character
9	106.4	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	8	9	ND9_A009	E
10	102.22	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	9	10	ND9_A010	E
11	95.84	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	10	11	ND9_A011	E
12	101.42	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	11	12	ND9_A012	E
13	100.61	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	12	13	ND9_A013	E
14	98.48	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	13	14	ND9_A014	E
15	100.99	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	14	15	ND9_A015	E
16	102.57	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	15	16	ND9_A016	E
17	97.44	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	16	17	ND9_A017	E
18	93.36	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	17	18	ND9_A018	E
19	93.87	iamc.cnr	iam00a084	-999.99	-999.99	-999.99	volume magnetic	18	19	ND9_A019	E

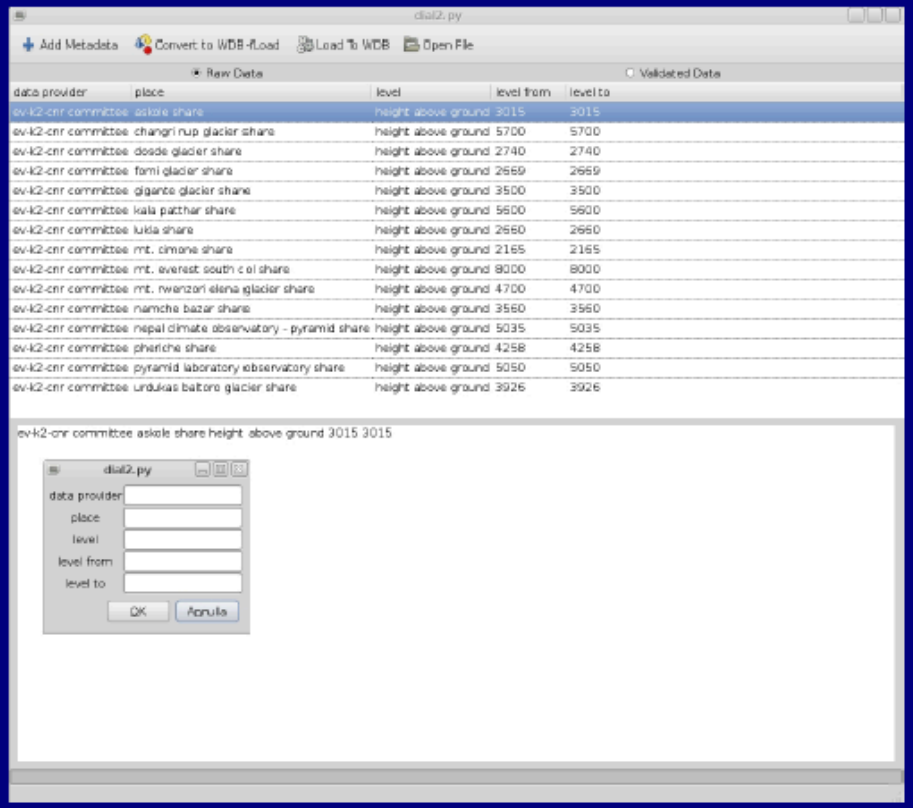


Figura: Python Graphical interface used to load data

```python
def generate_data():
    # assign value, place, referencetime, etc..
    yield value, place, referencetime, validfrom, validto, param, level, level_from, level_to

def writeit(dataprovider,count,out_file):
      if count==1:
            out_file.write(dataprovider + '\n') # optionally add namespace identifier
             for data in generate_data():
          out_file.write(str(data[0]))
          for element in data[1:]:
              out_file.write('\t')
              out_file.write(str(element))
          out_file.write('\n')
```

Figura: Python script to convert data in a format compatible with wdb-fastload loading program

DATAGRALP PROJECT

Logo

DATAGRALP PROJECT

No preview available

Parent/child metadata:
DATAGRALP project
- DATAGRALP inventories
- DATAGRALP database

Update children

Identification info

Title	DATAGRALP project
Alternate title	Database for reconstructing the spatial-temporal evolution of the Glacial Resource in the Italian ALPs over the last 100 years in the Framework of the NextData Project (DATAGRALP)
Date	2014-03-06T08:45:00
Date type	**Creation**: Date identifies when the resource was brought into existence
Edition	1.0
Edition date	2014-03-06

Cited responsible party

Individual name	Marta Chiarle	Voice	0039.011.3977836
Organisation name	Italian National Research Council (CNR)	Facsimile	0039.011.3977820
Position name	Research Institute for Geo-hydrological Protection (IRPI)	Delivery point	Strada delle Cacce, 73
Role	**Principal investigator**: Key party responsible for gathering information and conducting research	City	Torino
		Administrative area	TO
		Postal code	10135
		Country	Italy
		Electronic mail address	marta.chiarle@irpi.cnr.it
		OnLine resource	Database for reconstructing the spatial-temporal evolution of the Glacial Resource in the Italian ALPs over the last 100 years in the Framework of the NextData Project (DATAGRALP)

http://192.146.242.180:8080/geonetwork/srv/en/main.home

DATAGRALP INVENTORIES (componente geografica)

Logo

GIS SHAPEFILE (DATAGRALP_POLY)

Parent/child metadata:

- DATAGRALP inventories
- GIS shapefile (datagralp_poly)
  - sub_code
  - time_step
  - min_elev
  - wgi_code
  - max_elev
  - deb_area
  - tot_area
  - exp_area
  - max_width
  - min_width
  - or_acc
  - or_abl
  - max_length
  - mean_slope
  - x_coord
  - date
  - mean_or
  - code
  - y_coord
- Update children

Identification info

Title	GIS shapefile (datagralp_poly)
Alternate title	Geographical and morphological information about each glacier, acquired by QGIS
Date	2014-03-06T08:45:00
Date type	**Creation**: Date identifies when the resource was brought into existence
Edition	1.0
Edition date	2014-03-06

DATAGRALP DATABASE (componente descrittiva: parametri, documenti, fotografie e allegati)

Logo

DATAGRALP DATABASE

No preview available

Parent/child metadata:

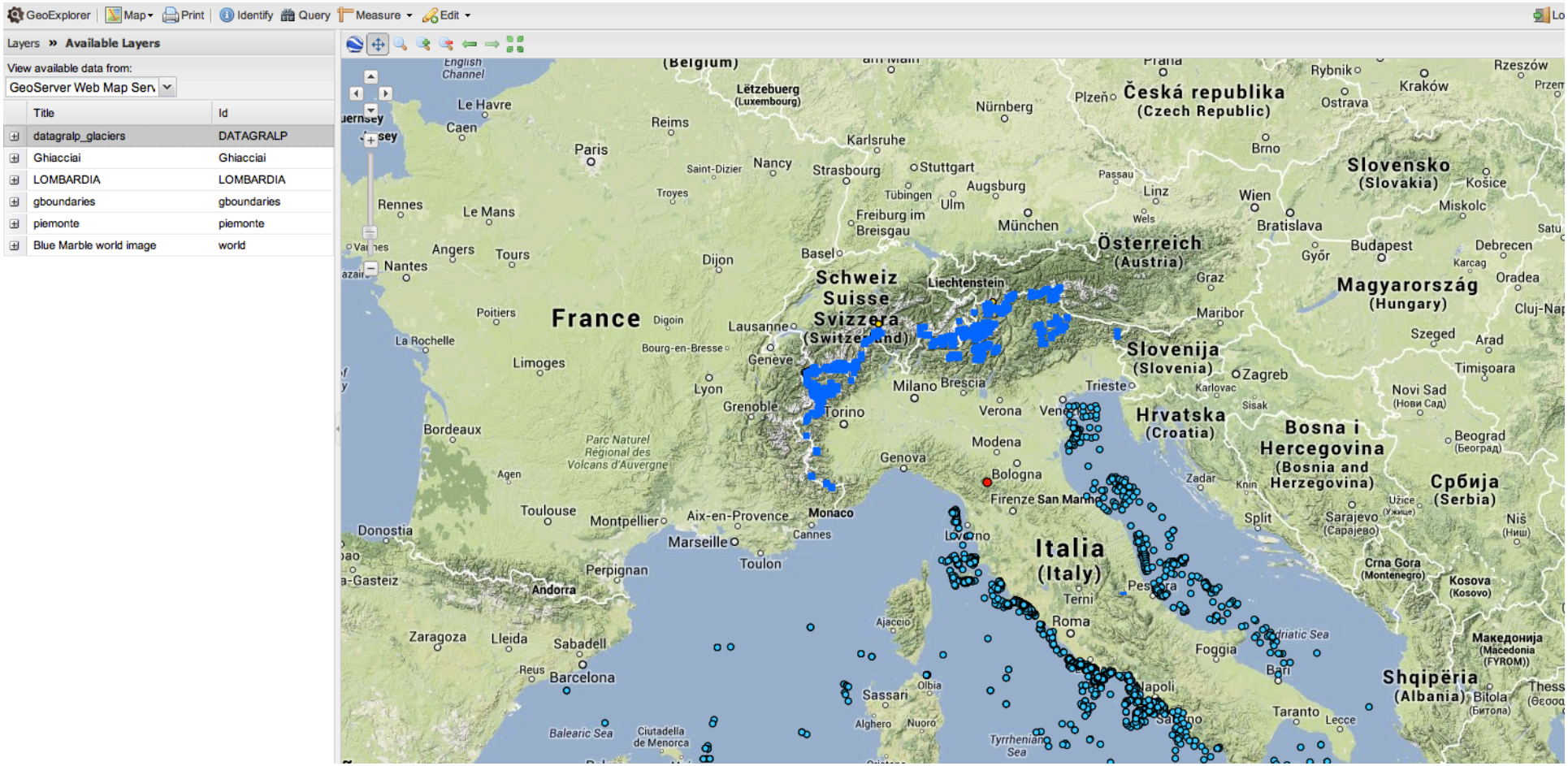
- DATAGRALP project
- DATAGRALP database
  - Glacier mass balance
  - Attached documents
  - General glacier data
  - Glacier morphological parameters
  - Glacier snout distance
- Update children

Identification info

Title	DATAGRALP database
Alternate title	Integrated system for the management of numerical, textual, iconographic and geographic data related to the Italian glaciers
Date	2014-03-06T08:45:00
Date type	**Creation**: Date identifies when the resource was brought into existence
Edition	1.0
Edition date	2014-03-06

Cited responsible party

Individual name	Marta Chiarle	Voice	0039.011.3977836
Organisation name	Italian National Research Council (CNR)	Facsimile	0039.011.3977820
Position name	Research Institute for Geo-hydrological Protection (IRPI)	Delivery point	Strada delle Cacce, 73
Role	**Processor**: Party wha has processed the data in a manner such that the resource has been modified	City	Torino
		Administrative area	TO
		Postal code	10135
		Country	Italy
		Electronic mail address	marta.chiarle@irpi.cnr.it
		OnLine resource	Database for reconstructing the spatial-temporal evolution of the Glacial Resource in the Italian ALPs over the last 100 years in the Framework of the NextData Project (DATAGRALP)



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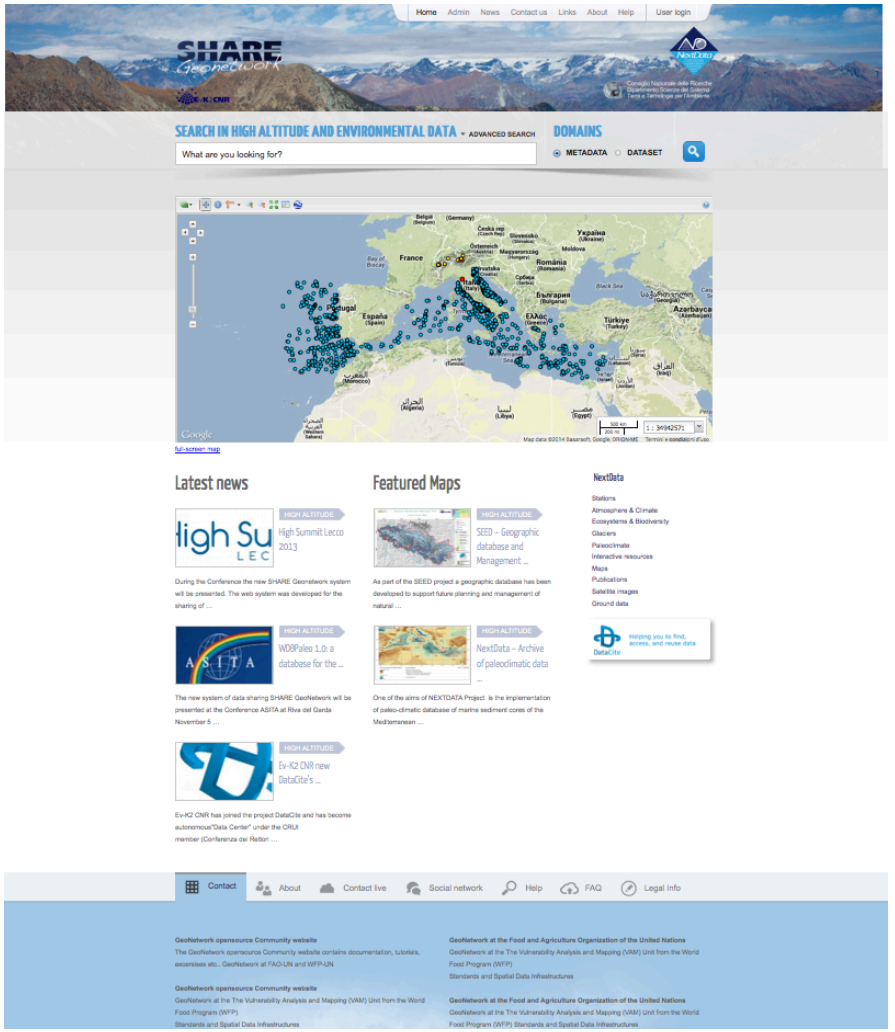
Paphos Cyprus Coral Beach Hotel

RMetS Royal Meteorological Society

Geoscience Data Journal



Grazie per l'attenzione

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