

# SDM - Scientific Data Management

F. Toussaint, M.Flechsig, J.Glauer, M.Wrobel, PIK Data & Computation

System Load maps Stations Help

Warning: Applet Window

SELECTION DONE. Europe (detailed map available)  
approx. LON / LAT = 8.54° 50.28°

World map  
S LAT = -50.80° N LAT = 53.42° W LON = -180.80° E LON = 180.80°  
Year selection: Europe  
S LAT = -34.81° N LAT = 50.76° W LON = -31.29° E LON = 44.43°

Thematic Criteria  
Use the PIK Meta DB Thesaurus to choose topics that will always lead to at least one hit in the PIK Meta Database.  
start PIK Meta DB Thesaurus

Spatial Criteria I  
Spatial Criteria II (will override Spatial Criteria I)

Global datasets  
European datasets  
German datasets

northern most lat.: 80.76  
western most lat.: -31.29  
eastern most lat.: 66.43  
southern most lat.: 34.81

spatial overlap strictness (0.100): 64%

Temporal Criteria and Textual Criteria  
Temporal frame  
Specific titles and/or originators or meta\_ids (use "%" as wildcard)  
begin year: 1900  
station: 1997  
originator: Deutscher Wetterdienst

temporal overlap strictness (0.100): 50%

Attributes to view the result of your query  
Use the forms below to retrieve additional information from the PIK Meta Database  
Meta\_Id  
Title  
Originator  
Progress  
Distributor  
Distr. Address  
Distr. City  
Distr. Zip  
Pik\_Project  
Pik\_Contact  
Pik\_Usage  
External\_Usage  
Space\_Represent  
Source\_Scale  
Begin\_Date  
End\_Date  
West  
East  
North  
South  
Publisher  
Thesaurus\_Level\_1  
Thesaurus\_Level\_2  
Thesaurus\_Level\_3  
Series Name

Order by (type in exactly name(s) of selected attribute(s), separated by commas):  
Pik\_Project, Pik\_Usage

SUBMIT your query! reset to default

select data geographically

select data by Thesaurus

The exploration of the earth has lead to a tremendous increase of spatial data. As they are highly inhomogeneous, it is impossible to build-up a consistent common data model.

There is vital necessity for a coordinated construction of a network accessible meta data base (MDB) to store information about the available data. Scientists shall be able to retrieve the underlying data directly, independent of its physical location.

## The Meta Data Base

The MDB is a relational Oracle™ data base, consisting of 40 tables. A new database structure was developed in close collaboration with the Deutsches Klimarechenzentrum (DKRZ), Alfred-Wegener-Institut (AWI), and Forschungszentrum Karlsruhe (FZK). It is based on the Cli-

System Load maps Stations Help

Warning: Applet Window

SELECTION DONE. Brandenburg (detailed map available)  
approx. LON / LAT = 12.69° 52.85°

map of Germany  
S LAT = -47.27° N LAT = 55.86° W LON = -15.84° E LON = 15.84°  
Year selection: Brandenburg  
S LAT = -51.36° N LAT = 53.56° W LON = -11.27° E LON = 14.77°

Thematic Criteria  
Invoke the PIK RAGtime DB Thesaurus to choose topics that will always lead to at least one hit in the PIK RAGtime Database.  
start PIK RAGtime DB Thesaurus

Spatial Criteria I  
Spatial Criteria II (will override Spatial Criteria I)

admin. units  
river basin

northern most lat.: 53.56  
western most lat.: 11.27  
eastern most lat.: 14.77  
southern most lat.: 51.36

spatial overlap strictness (0.100): 62%

Temporal Criteria and Textual Criteria  
Temporal frame  
Specific titles and/or originators or meta\_ids (use "%" as wildcard)  
begin year:  
station:  
end year:  
originator:

temporal overlap strictness (0.100): 50%

Attributes to view the result of your query  
Use "Meta\_Id" to retrieve additional information from the PIK Meta Database  
Meta\_Id  
Title  
Originator  
Progress  
Distributor  
Distr. Address  
Distr. City  
Distr. Zip  
Pik\_Project  
Pik\_Contact  
Pik\_Usage  
External\_Usage  
Space\_Represent  
Source\_Scale  
Begin\_Date  
End\_Date  
West  
East  
North  
South  
Publisher  
Thesaurus\_Level\_1  
Thesaurus\_Level\_2  
Thesaurus\_Level\_3  
Series Name

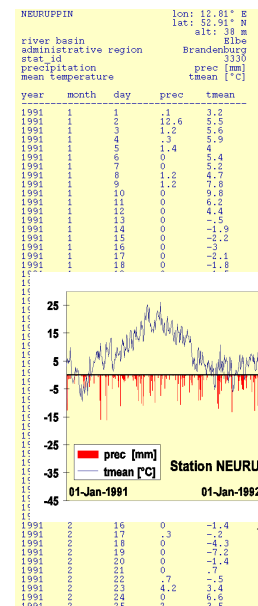
Order by (type in exactly name(s) of selected attribute(s), separated by commas):  
Station\_Type

SUBMIT your query! reset to default

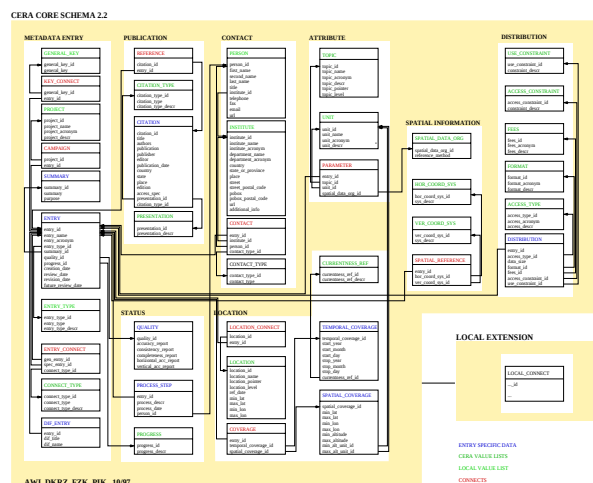
select region

select station

station meta data



station data:  
listed output and  
graphical display



mate and Environmental Data Retrieval and Archiving System (CERA), already in use at the DKRZ. The MDB is accessible via Oracle tools and SQL requests that can be forwarded to the server by a WorldWideWeb graphical user interface (GUI).

## The Graphical User Interface

To make retrieval of spatial data from the MDB and PIK Time Series Data Bases (TDB) easier, an interactive JAVA webtool has been developed. It allows navigation and selection in hierarchical geographical regions such as administrative areas or river basins. Other structures can be implemented, free selection is possible.

## Prospects

After the completion of the table structure's core part (coreCERA Scheme) the development of modular table groups is planned. Information about storage, data structure, and other parameters of the data has to be kept in the Meta Data Base.

The MDBs of several partner institutes (DKRZ, AWI, etc.) will be coupled to allow mutual meta data access. Data browsing display for data selected in the MDB (where adequate) as well as direct data access will be possible.

