



The CIMME data repository

A Cyprus Institute Initiative Strategy and objectives

2nd MEDARE Workshop

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**THE CYPRUS
INSTITUTE**



MAX-PLANCK-GESELLSCHAFT



Outline

- Introduction of the web site and the web server
- Description of the CIMME dataset



Major Goals

- Improve the availability of data relevant to climate change assessments for the Mediterranean region and the Middle East
- Obtaining the data from different sources
- Ensuring the availability of continued and quality controlled data about the state of the climate system

The domain: Mediterranean and Middle East (22N-45N/20W-57E)



List of Countries

Europe	North Africa	Middle East/SW Asia
<ul style="list-style-type: none">- Spain- France- Italy- Monaco- Slovenia- Croatia- Serbia- Montenegro- Bosnia-Herzegovina- Malta- Albania- Greece	<ul style="list-style-type: none">- Morocco- Algeria- Tunisia- Libya- Egypt	<ul style="list-style-type: none">- Cyprus- Lebanon- Syria- Israel- Jordan- Iraq- Iran- United Arab Emirates- Qatar- Georgia- Azerbaidjan- Kuwait



Data Organization

- By data type: gridded, station, country
- By discipline: atmospheric, oceanic, terrestrial, socio-economic
- By time coverage: non-static, fixed time, climatology, paleo, forecast



Gridded and station data

- Organized by category: In-situ observations, satellite/remote observations, model results, reanalysis products
- By geographical distribution: global, regional or station data



The Live Access Server

- Product (web server) developed by the Pacific Marine Environmental Laboratory (NOAA)
- Is a webserver designed to provide access to scientific data referenced by latitude, longitude, and time
- Can show visualizations (color plots and graphs) of the data as requested
- provide subsets of the specific parameters in a choice of file formats
- present the numerical data collected
- unify access to multiple types of data in a single interface

Example of LAS

- You choose the type of data you would like to explore by topic area
- For example, Atmosphere

NASA MY NASA DATA Live Access Server (Armstrong Edition)

[OPeNDAP \(F-TDS\) / THREDDS](#) | [Index](#) | Search:

+ MY NASA DATA HOME + DATA ACCESS + LESSON PLANS + COMPUTER TOOLS + SCIENCE BASICS + GLOSSARY

single data set **compare two**

Datasets
Variables
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Define variable
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Contact

LAS V7.0 Beta
Version 6 UI

Datasets
Welcome to LAS.
This session will expire after 180 minutes of inactivity.

Click on a dataset to continue or an **i** for information about a dataset. [Help](#)

Select dataset:

- i** [Atmosphere](#)
- i** [Biosphere](#)
- i** [Cryosphere](#)
- i** [Land Surface](#)
- i** [Oceans](#)

+ [Freedom of Information Act](#)
+ [The President's Management Agenda](#)
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+ [Privacy Policy and Important Notices](#)

NASA Official: **Lin H. Chambers**
Last Updated: December 9, 2008
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How to access data

After selecting the variable you want to explore, you choose your output options:

- View (Map or Time series)
- Region (Global or specific region)
- Time (date)
- Depth (when available)
- For example, we choose *Latitude-Longitude map, Full Region, January*
- Click *Update Plot*

Live Access Server About LAS

CYPRUS LAS

Help
OPeNDAP (F-TDS) / THREDDS
Link to this page

Choose dataset Update Plot Set plot options Animate Compare Google Earth Show Values Export to Desktop Application Save As ...

Subset of World Ocean Atlas monthly 1994 Monthly Means Temperature

Latitude range 22 : 45
Longitude range 340 : 417
Reset Map

MAPS
 Latitude-Longitude

LINE PLOTS
 Time series
 Depth
 Longitude
 Latitude

VERTICAL SECTION PLOTS
 Longitude-depth
 Latitude-depth

HOFMULLER PLOTS
 Longitude-time
 Latitude-time
 Depth-time

Date : Climatology: Jan

Depth (METERS) : 0

Apply analysis

Welcome to Live Access Server.

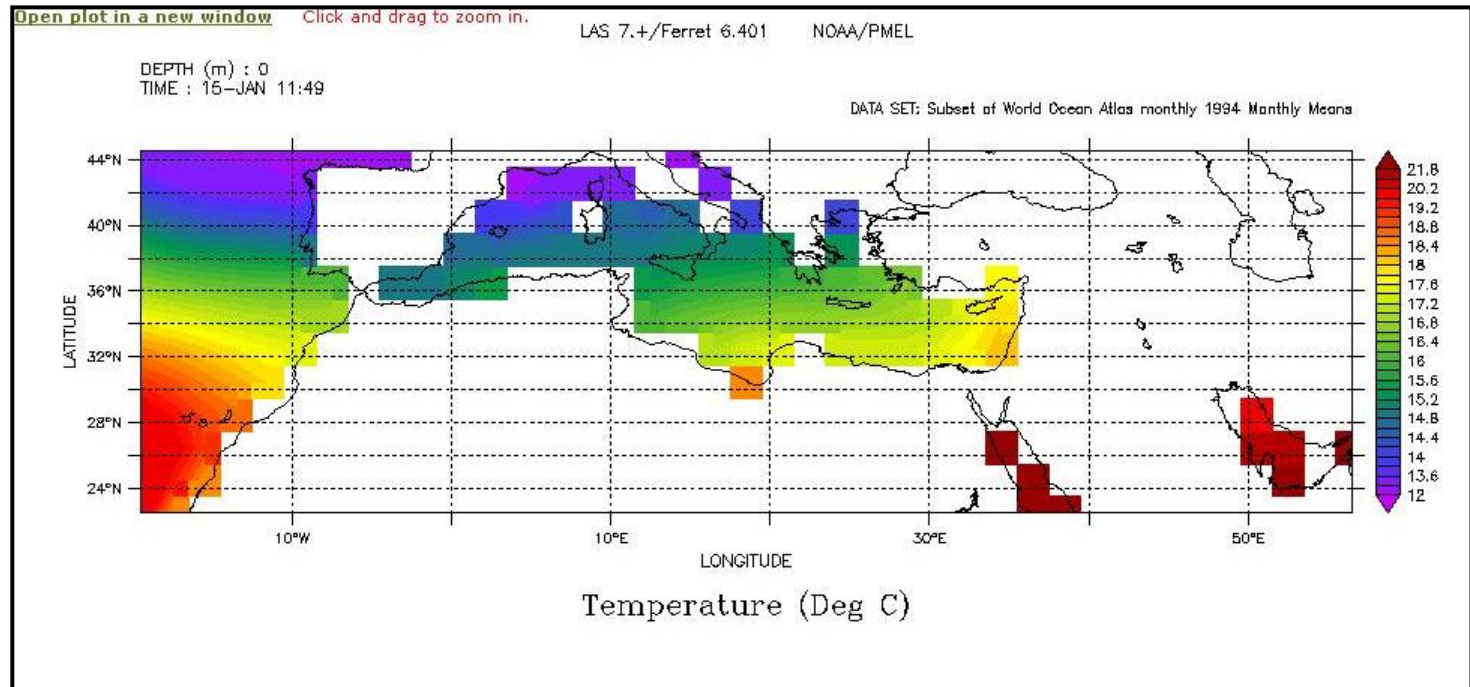
To begin, click the "Choose Dataset" button.

Once a variable has been selected, adjust the plot constraints that appear to the left and click "Update Plot" to create a plot.

Check the checkbox adjacent to the "Update Plot" button to automatically update plots as you switch datasets and adjust constraints.

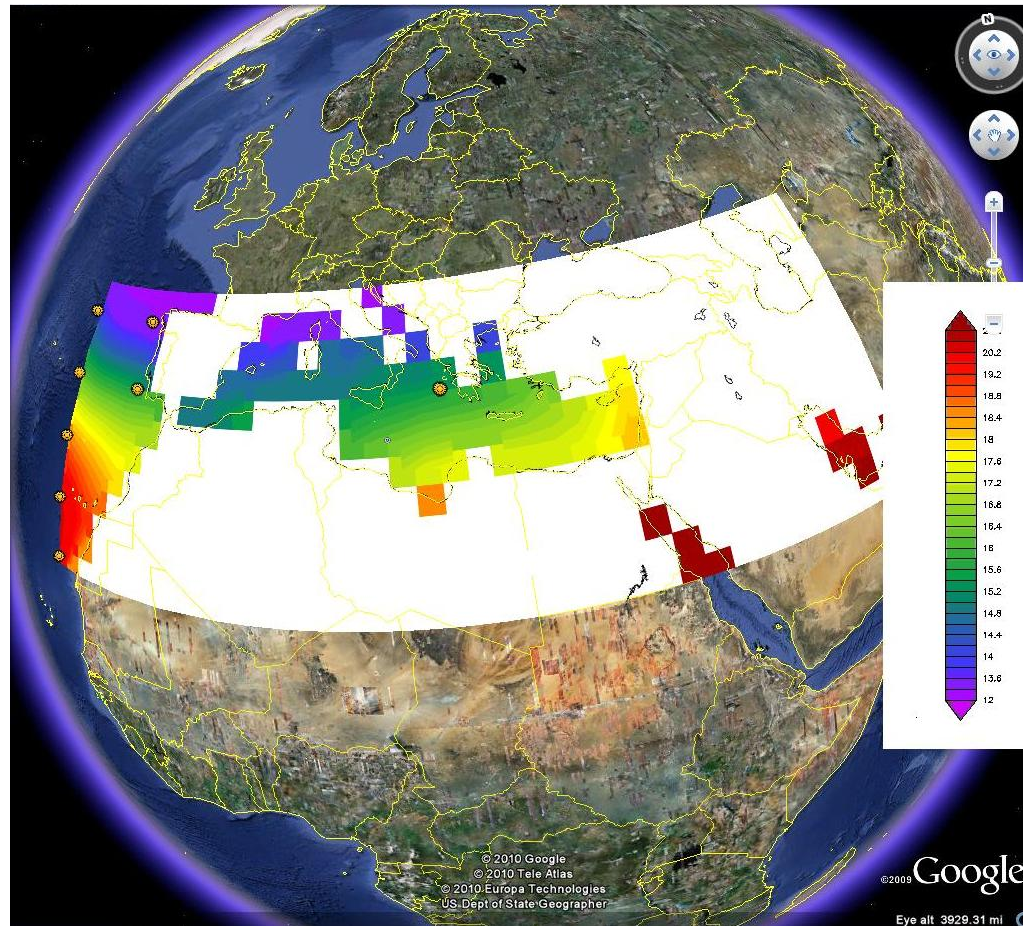
US Department of Commerce NOAA | OAR | PMEL | Contacts | Privacy Policy | Disclaimer | mailto:oar.pmel.contact_ferret@noaa.gov

The resulting plot



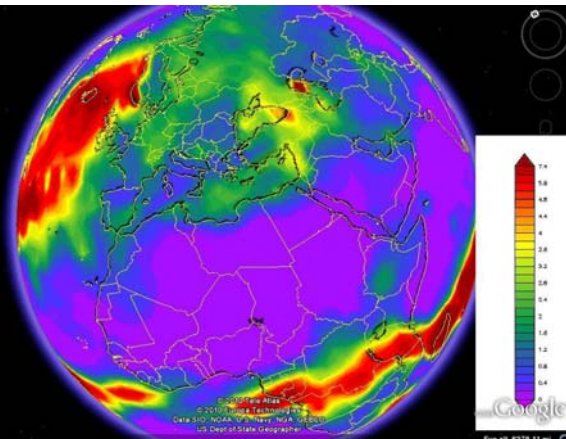
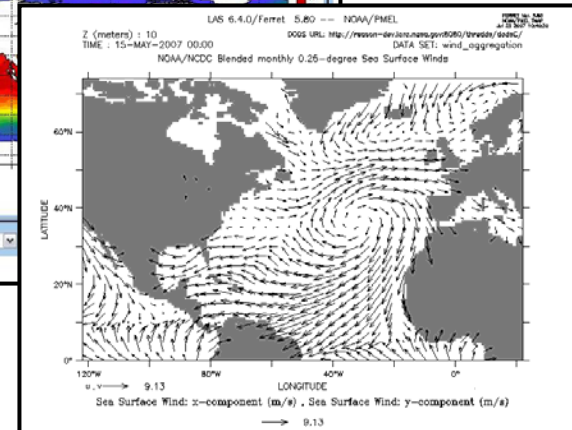
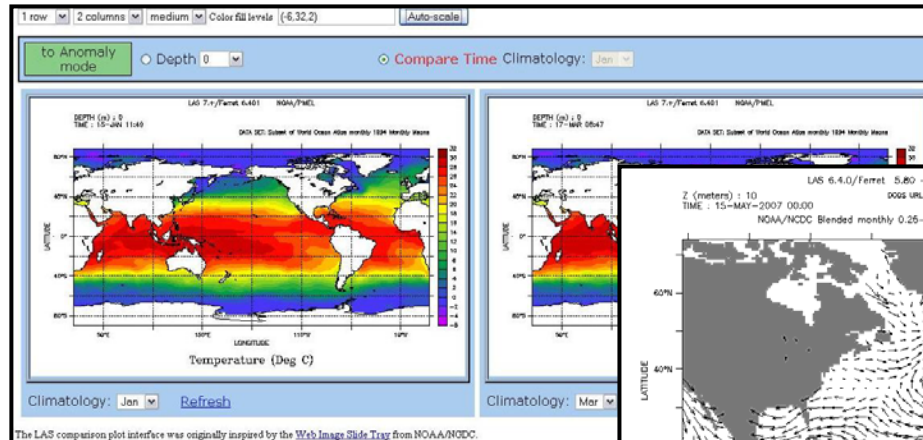
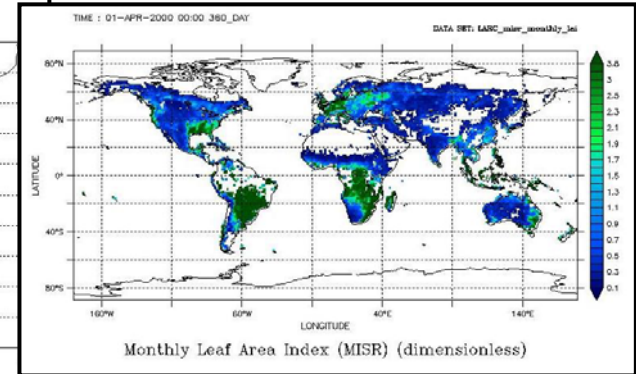
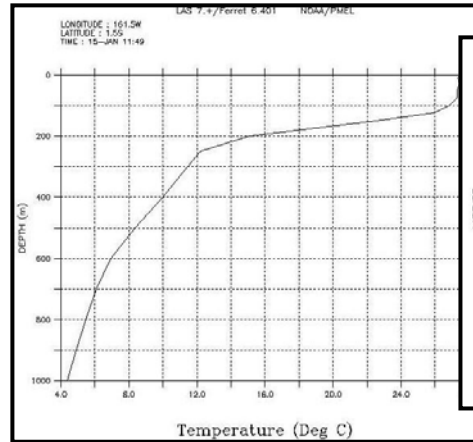
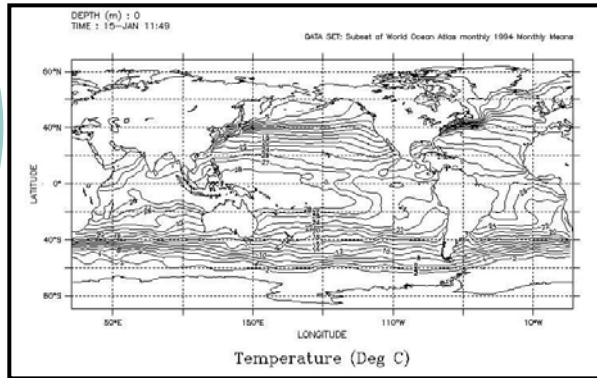
Subset of World Ocean Atlas monthly 1994

The resulting plot



exported to Google Earth

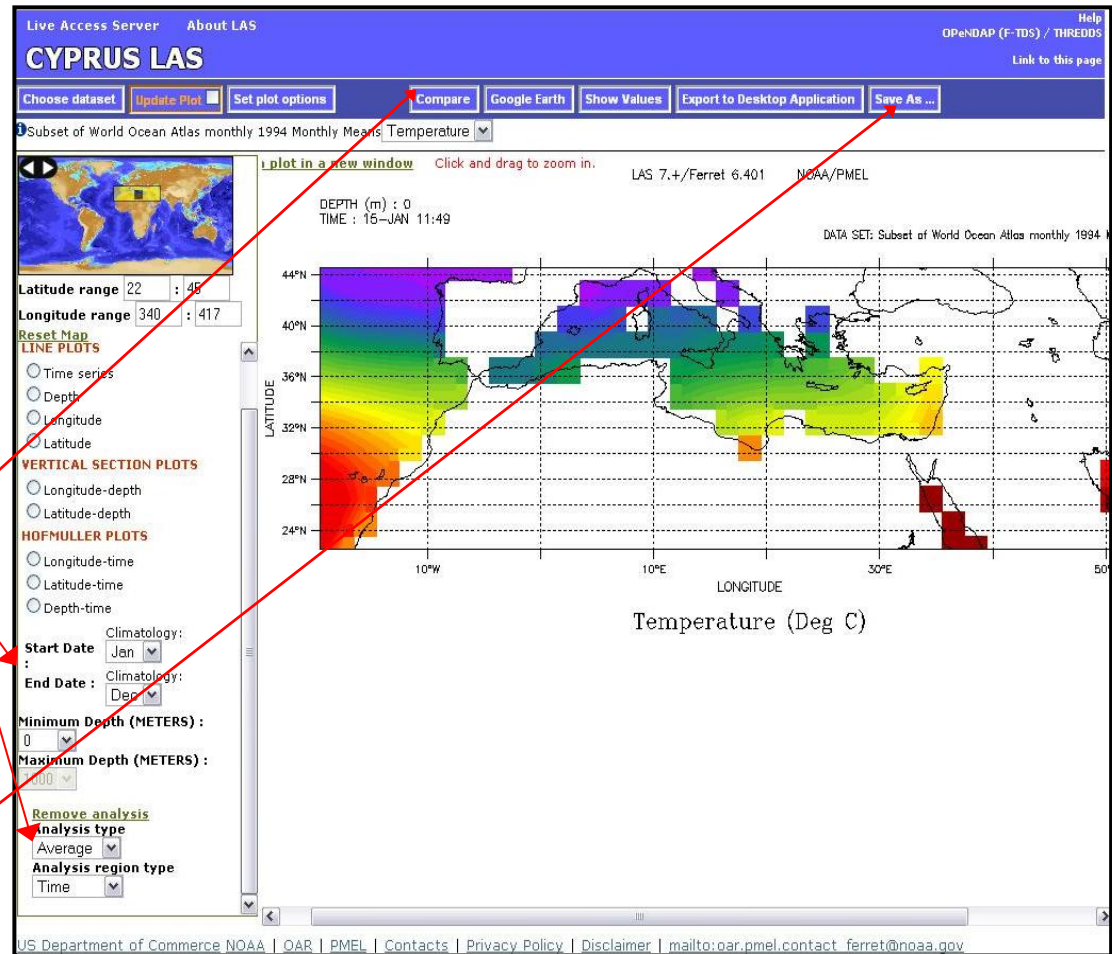
Plot examples



GPCP Monthly Precipitation -Feb 1979

How to manipulate data

- You can select your analysis type (average, min, max, sum, var) that you apply on an axis (time, latitude, longitude, depth)
- You can choose the range
- You can make comparisons of plot for different dates or depths
- You can save the data as file (netcdf, arcGrid, ASCII)





The OPENDAP server

- A software that simplifies scientific data networking, allowing simple access to remote data
- Local data can be made accessible to remote locations regardless of local storage format by using servers (Netcdf, hdf, Matlab, GrADS..)
- Existing, familiar data analysis and visualization applications (ferret, GrADS, MATLAB and many others) can be transformed into clients (i.e., applications able to access remote served data).

Which data?

Observations

Monthly surface temperature	<ul style="list-style-type: none">- CRU 3.0: gridded station data, 1901-2006, 0.5°x 0.5°- GHCN-CAMS: gridded station data, 1948-present, 0.5°x 0.5°- University of Delaware: gridded station data , 1961-2006, 0.5°x 0.5°
Daily surface temperature	<ul style="list-style-type: none">- E-OBS 3.0: gridded station data, 1950-2010, 0.5°x0.5° and 0.25°x0.25°
Monthly precipitation	<ul style="list-style-type: none">- VASCLimO/GPCC: gridded station data, 1951-2000, 0.5°x0.5° and 1°x1°- CRU 3.0: gridded station data, 1901-2006, 0.5°x 0.5°- University of Delaware: gridded station data , 1961-2006, 0.5°x 0.5°- CPC Monthly Analysis of Global Land Precipitation: gridded station data, 1948-2007, 0.5°x 0.5°
Daily precipitation	<ul style="list-style-type: none">- E-OBS 3.0: gridded station data, 1950-2010, 0.5°x0.5° and 0.25°x0.25°- APHRODITE: gridded station data, 1961-2004, 0.5°x0.5° and 0.25°x0.25°

Which data?

Satellite

Monthly temperature	- Microwave Sounding Unit (MSU): lower troposphere, middle stratosphere and lower stratosphere, 1979-2007, 2.5°x 2.5°
12-hourly temperature	- AIRS V5 (Atmospheric Infrared Sounder): from surface to 1mb, 1 Sept 2002-present, 1°x1°
Monthly precipitation	- GPCP (Global Precipitation Climatology Project):, 1951-2000, 0.5°x0.5° and 1°x1° - CMAP: gridded station data, 1901-2006, 0.5°x 0.5°
Daily precipitation	- GPCP daily precipitation: Oct 1996 – Aug 2009, 1°x1°
Radiation	- ERBE: The NASA Earth Radiation Budget Experiment, Monthly data Nov 1984-Jan 1990, 2.5°x2.5°
Clouds	- ISCCP_D2 satellite cloud data: monthly cloud data from Jul 1983-June 2008 2.5°x2.5°
Humidity	- AIRS V5 (Atmospheric Infrared Sounder): from surface to 1mb, 1 Sept 2002-present, 1°x1°

Which data?

Model Results

ENSEMBLES	<ul style="list-style-type: none">- ENSEMBLES RT3 monthly data, 16 RCMs 1961-2000 with ERA-40 boundaries- ENSEMBLES RT2b monthly data, RCMs 1950-2050/2100 with GCM A1b boundaries
PRECIS	<ul style="list-style-type: none">- PRECIS with HadAM3P daily data, 1950-2050 at 25 km

Reanalysis

ERA40	<ul style="list-style-type: none">- ECMWF 40-year Reanalysis data: daily/monthly pressure level and surface, Sept 1957- August 2002, 2.5x2.5
NCEP	<ul style="list-style-type: none">- NCEP-NCAR Reanalysis daily/monthly average: Jan 1948-present, 2.5°x2.5°- NCEP-DOE Reanalysis 2 daily/monthly average: Jan 1979 to present, 2.5°x2.5°

Which data?

Atmospheric composition

WMO/GAW	<ul style="list-style-type: none">- GAW Global Atmospheric CO₂ and CH₄- GAW Global Baseline Total Ozone Network- GAW Global Baseline Profile Ozone Network- GAW Aerosol Network
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Ocean

MEDAR/ MEDATLAS II	<ul style="list-style-type: none">- MEDATLAS Hydrographic and Bio-Chemical Data of the Mediterranean and Black Sea
ARGO	<ul style="list-style-type: none">- Global array of 3,000 free-drifting profiling floats that measure the temperature and salinity of the upper 2000 m of the ocean, May 1998 - present



Timeline

- Live Access Server operational with the datasets mentioned: September 2010
- Add country profiles related to agriculture, energy: end 2010
- Have a website operational with the metadata, LAS and country profiles: January 2011
- Add new datasets on needs and request: 2011



The CIMME Dataset

- Objective: build a dataset for temperature and precipitation for the region North Africa- Middle East
- Collect data from the WMO Global Telecommunication System available through the Global Summary of the Day (NOAA)
- Digitization of data scanned by NOAA and the Met Office
- Apply quality checks and homogenization



The CIMME Dataset

- GSOD: more than 500 stations for MENA, spanning from 1957 to present (mostly complete from 1973 to present), not quality checked and not homogenized
- ECA-D dataset: about 220 stations from southern Europe and MENA, spanning mainly from 1950s to present, quality checked and homogenized
- Digitized data for stations from the Daily Weather reports (Austrian, French, British, Italian) from 1860-1870s in Egypt, Lebanon, Algeria, Malta, Croatia



Outlook

- Coordinate activities with other Mediterranean projects: DARECLIMED, CLIMRUN, CIRCE (EU funded), ACRE and WMO-MEDARE
- Organize workshops same style as the „Expert Team on Climate Change Detection, Monitoring and Indices (ETCCDMI)” (Middle East climate extreme indices, Zhang et al., JGR, 2005)
- Hire a person (or two) for the digitization effort



Thank you

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