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National Institute of Oceanography, NIO, Dona Paula-Goa, India
sidpk9@gmail.com

Toxicity of diesel was tested on laboratory reared estuarine Cladocera *Diaphanosoma celebensis* Stingelin by determining the mortality and rate of neonate production in 0.06, 0.25, 0.49 and 0.66 ppm concentration for 8 days. In control and 0.06 ppm concentration only 20% mortality occurred during the period of the experiment while it increased with increasing concentrations and period of exposure, recording 53, 87 and 100% in 0.25, 0.49 and 0.66 ppm respectively. LC_{50} was estimated to be 0.24 ppm. Neonate production occurred in all the concentrations, but there was a delay in releasing the first batch of young ones in higher concentrations. However, no particular trend was observed in neonate production either with concentration or period of exposure.

Comparison of meteorological conditions in the arctic in the period of the first international polar year 1882/1883 with the present conditions

Przybylak R., Wyszyński P.
Department of Climatology, Institute of Geography,
Nicolaus Copernicus University, Toruń, Poland
wyszko@stud.umk.pl, rp11@umk.pl

Meteorological data gathered for the real Arctic (Treshnikov 1985) during the First International Polar Year 1882/83 (IPY-1) are definitely the best in terms of coverage, quality, resolution, etc. out of all the early-instrumental data available for the area. As a result, IPY-1 was taken as the beginning of systematic research of the Arctic climate (Dolgin 1971).

The presentation describes comparison of the meteorological conditions (air temperature, atmospheric pressure, wind speed and directions) in the Arctic during the IPY-1 based on hourly data gathered for nine stations representing almost all climatic regions of the study area with the present-day ones (1961-1990).

Spatial patterns of average annual and seasonal meteorological conditions in the Arctic were very similar to present-day ones (Przybylak 2003).

The air temperature in the Arctic during the IPY-1 was, on average, colder than today by 1.0–1.5 °C. Winter was exceptionally cold with the average temperature being lower by more than 3 °C in all months except February. On the other hand, spring

(March–May) was slightly warmer than today, and April was exceptionally warm (1.1 °C above present norm).

Atmospheric pressure in the IPY-1 period (Sep 1882-Jul 1883) was, on average, 1.4 hPa higher than in modern period (1961-1990). The greatest positive seasonal differences between historical and contemporary pressure values occurred in autumn (2.6 hPa), while the lowest were in winter (only 0.2 hPa).

The air temperature and pressure differences calculated between historical and modern mean monthly values show that almost all of them lie within one standard deviation (SD) from present long-term mean (1961-1990). Thus, this means that the meteorological conditions in the early instrumental period was not significantly different to that of the present day.

Original data obtained during the IPY-1 research campaign were also compared with the data for the period of 1882-1883 from 2nd version of the 20th Century Reanalysis Project (Compo *et al.* 2011)

Messinian Salinity Crisic on the Sicily (Italy): lithology and environmental changes

Rybkina A. [1,2], Rostovtseva U. [2]
[1] Geophysical Center RAS,
[2] MSU, Moscow, Russia
a.rybkina@gcras.ru

About 6 million years ago Mediterranean Sea was transformed into a giant saline basin, one of the largest in the Earth`s history and surely the youngest one. This event, soon referred to as the Messinian Salinity Crisis (MSC), changed the chemistry of the ocean and had a permanent impact on both the terrestrial and marine ecosystems of the Mediterranean area.

The Messinian stratigraphy of Sicily has a particular importance for the comprehension of the Messinian salinity crisis as its successions bear the greatest similarity with those of the deep Mediterranean basins. Despite the large number of studies carried out in the last 30 years, we believe that the true time and genetic relationships between the different evaporitic and non evaporitic rock bodies are still not well established. This is probably due to the limited, partial view offered by the central Sicilian basin, despite its complete Messinian stratigraphic record. Clastic and chaotic evaporitic deposits emplaced by tectonically-driven small to large-scale

The main purpose of the work is establishing linear trend and study of spatial-temporal variation of the monthly mean river discharge of the Belaya River basin of Bashkiria based on correlation analysis. As the basis for analysis, the data measured in the following hydrological stations of the Federal Service for Hydrometeorology and Environmental Monitoring (Bashkir Department, "BashUGMS") used are 1) Nugush river (Novoseitovo village, 1936-1999); 2) Nugush river (Andreevskii, 1971-1999); 3) Ashkadar river (Novofedorovka, 1971-1999); 4) Inzer river (Azovo, 1958-1999); 5) Urshak river (Lyakhovo, 1949-1999); 6) Chekmagush river (Chekmagush, 1967-1999); 7) Chermasan (Novoyumranovo, 1957-1999); 8) Sterlya river (Otradovka, 1942-1999); 9) Yuruzan river (Chulpan, 1957-1999); 10) Yuruzan river (Atnyash, 1963-1999).

The establishment of the low-frequency (long-term) component of the discharge oscillation of the main inflows of the Belaya basin was carried out using a method of differential-integral curves (DIC). By means of the method, the discharge cycles of the 11 and 22 year longitudes (the Schwab and Hale cycles), presumably associated with the solar activity cycles, have been established. The lowest frequency determined by the method was associated with the 87-90 years cycle (the Glayshberg cycle).

Evaluation of the linear trend was performed with the least-squares method. Significance level of the corresponding coefficients of the trend equations was also established. Results of the river discharge analysis showed positive trend from years 1970-1999. The analysis of the discharge data observed for more than 50 years pointed on the initial negative trend up to the 1970s that later on changed to positive trend. In general, the positive trend for the river discharge was determined taking all period of measurements at the stations under study.

Correlation analysis of the river discharge clearly showed a good correlation between the data measured on hydrological stations located on the same river/inflow (R is 0.5 - 0.9). However, the data from the stations that were close to each other but located on different inflows showed rather poor correlation (R was 0.1-0.4).

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Comparison of historical meteorological data for the Arctic in the 19th century with the 20th Century Reanalysis dataset

Wyszyński P.
Department of Climatology, Institute of Geography,
Nicolaus Copernicus University, Toruń, Poland
wyszko@stud.umk.pl

The poster describes the comparison of the meteorological data obtained during the IPY-1 research campaign with the gridded data taken from 2nd version of the 20th Century Reanalysis Project (Compo *et al.* 2011). Having the high quality controlled of original pressure, temperature and wind speed measurements from the Arctic it is possible to check the reliability of the existing gridding dataset. Meteorological data from the historical sites were compared with data taken from the above product for the nearest grids.

The 20CR dataset used data from observations based on the International Surface Pressure Databank (Yin et al. 2008) and therefore results of the atmospheric pressure are more close to those taken from the original IPY-1 dataset. On the other hand, 20CR reveal a quite large positive bias for the air temperature and a negative bias for the wind speed in comparison to the real data from the instrumental observations.

Long-term ecosystem change in Jiaozhou Bay and its catchment: the DPSIR approach

Yu Y. [1,2], Han B. [1], An T. [2]
[1] South China Institute of Environmental Science, Ministry of Environmental Protection, Guangzhou, China, [2] Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, Guangzhou, China
hanbaoxin@scies.org

Jiaozhou Bay is a semi-closed embayment, affected by anthropogenic factors around Qingdao, China. This article illustrates the long-term change in the Bay and its catchment using the driver-pressure-state-impact-response (DPSIR) approach. Under the Chinese national macro-socioeconomic policy, rapid development and massive urbanisation occurred in Qingdao that has resulted in the serious reduction and quality deterioration of its arable land and the variation in water resources. The production and consumption pattern changed with population growth with an increasing demand for water and food as well as pollutants emissions. The pressure alteration in the Bay and its catchment has created far-reaching impacts on the