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EVALUATING OF GLOBAL WARMING BY ANALYSIS OF THE SEA SURFACE TEMPERATURE IN THE PERSIAN GULF AND THE GULF OF OMAN

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Introduction

Global warming is among the topics discussed in many scientific communities around the world and is constantly being reviewed because this phenomenon has noteworthy effects on the most of life processes in the world. Ocean currents play undeniable role in controlling Earth's temperature changes.

In this study, data from surface water temperature measured by NOAA satellites has been used from 1988 to 2008. Since the measurement results in some time and place steps were not recorded, at first, data were Interpolation with the help of different methods and after comparing with measured data, was verified

The study area

Studying and continuous monitoring of water properties of the Gulf of Oman and Persian Gulf, is so important for Iran, since this country has about 2,000 km coastline on the shores of this world's water basin. Given the strategic position of the Persian Gulf and the gulf of Oman, comprehensive management and control of resources for various events occurring in it would not be possible without such research. In many oceanographic numerical models, this region has been studied in brief. Therefore in this study, a wide area within 18 to 31 degrees North and longitude 47 degrees east to 73 were analyzed so that the change the physical characteristics of water in the Gulf of Oman and the Persian Gulf can be analyzed simultaneously.

Ocean heat budget

Since the specific heat capacity of water is about 5 times the soil [1], Earth's crust much earlier than water, heated and cooled. Water basins in each region plays an important role in climate change. Interactions of the famous Gulf Stream and kuroshio, with the climate of the areas where they flow have been studied in many papers [2] [3]. 1992 Mt.Mitchel data and some measurements off the coast of Oman and the Persian Gulf, was used for accuracy assessment of the model. The intense tropical heat in the summer causes a low pressure center in the gulf of

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Oman on the lower latitudes. Total effects of sun angle and duration of exposure may explain this phenomenon [4].

In summer as can be seen in Figures 1 and 2, the Persian Gulf and the gulf of Oman, , are among the hottest parts of the northern hemisphere.

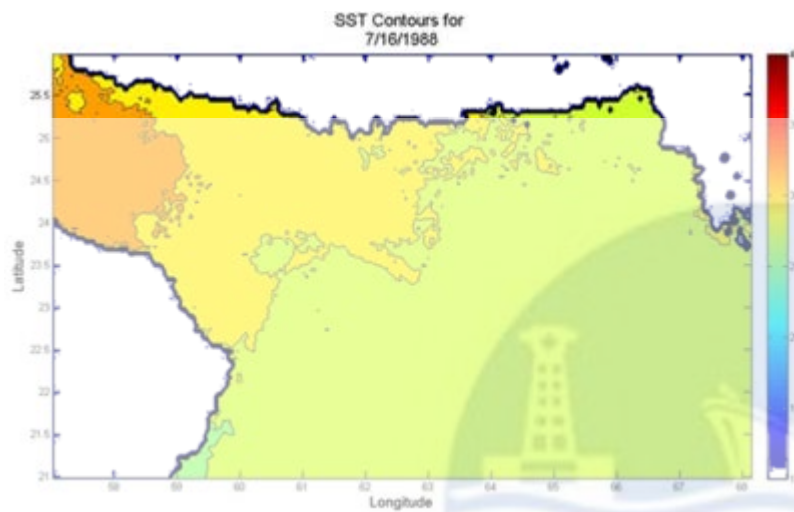


Fig. 1) Sea surface temperatures in the gulf of Oman on 16 July 1988

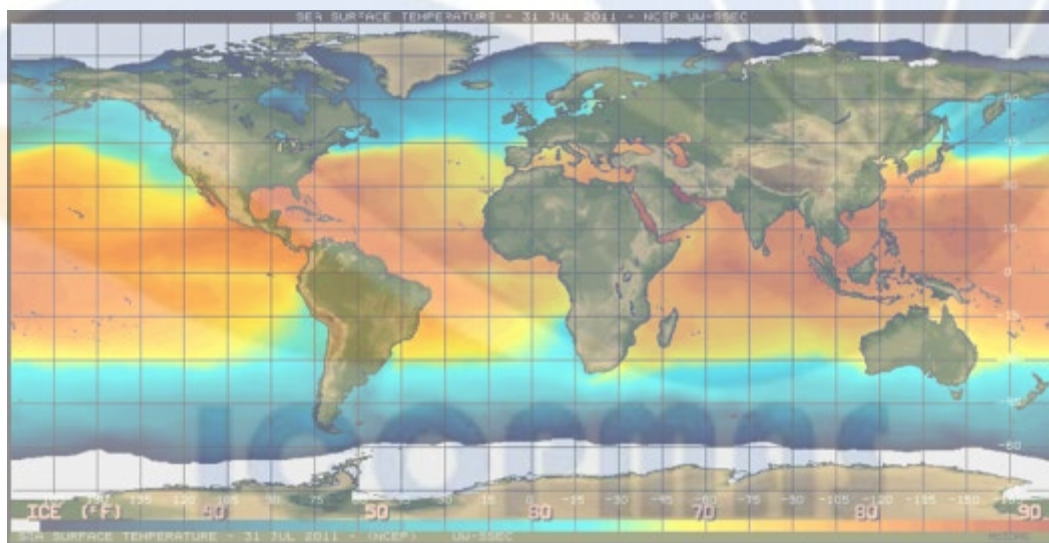


Fig. 2) Surface temperature at 17 July 2011 - long wave radiation NOAA-TIROS[5]

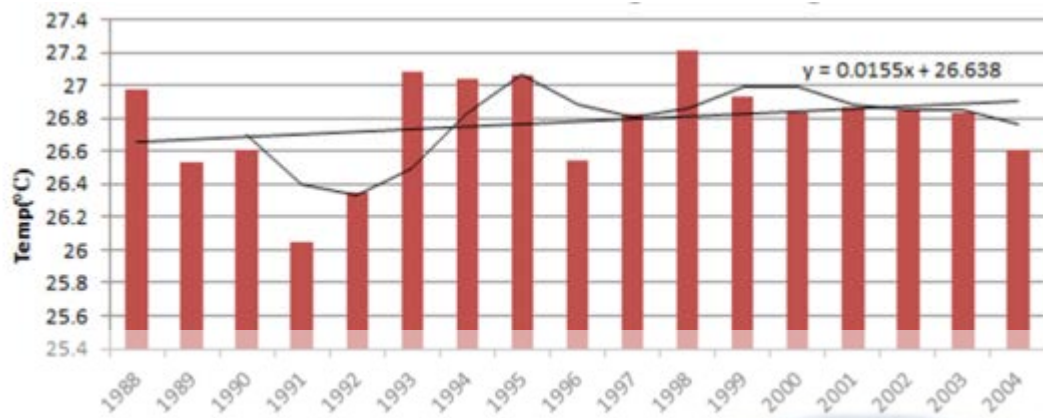


Fig. 3) The overall average of sea surface temperature in the Gulf of Oman in the years 1988 to 2004

Conclusion

Survey data for different seasons and years shows:

- A phase delay of about 1.5 to 2 months for maximum heating and cooling can be seen that can be acceptable due to heat capacity of water.
- A line with a slope of 0.015 ° C over the years can be fitted to the annual mean values of sea surface temperature plot in the Oman basin, and with a slope of about 0.092 in the all studied area. It is necessary to include the conclusion section after the main text.

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