Geosistemy perehodnykh zon = Geosystems of Transition Zones / Геосистемы переходных зон

2023, vol. 7, no. 3, pp. 276–291

URL: http://journal.imgg.ru/archive.html ; https://elibrary.ru/title_about.asp?id=64191

https://doi.org/10.30730/gtrz.2023.7.3.276-291; https://www.elibrary.ru/pzvwvp; http://journal.imgg.ru/web/full/f-e2023-3-4.pdf

Seasonal and interannual variations in sea surface temperature in the Tatar Strait according to satellite data

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Abstract. The aim of the work was to conduct a systematic statistical analysis of the spatial and temporal variability of sea surface temperature (SST) in the waters of the Tatar Strait based on satellite data accumulated in the Sakhalin branch of VNIRO using the TeraScan receiving station for 1998–2021. It was revealed that in different seasons of the year the SST structure is similar and characterized by the highest values in the southeast and the lowest in the northwest of the strait. An important new result was obtained by expanding of the SST field in terms of the EOF, which is associated with a sharp change in the nature of the time function of the third mode, which occurred in 2013–2014. Such changes can be considered as a climatic shift in the studied area most pronounced in the northwestern part of the strait and near the southwestern coast of Sakhalin Island, where the change was about 1 °C. This circumstance can have a noticeable effect on the state of populations of several species of shrimp and commercial fish.

Keywords:

sea surface temperature, Tatar Strait, seasonal variations, trend, empirical orthogonal functions, climatic shift

For citation: Shevchenko G.V., Lozhkin D.M. Seasonal and interannual variations in sea surface temperature in the Tatar Strait according to satellite data. *Geosistemy perehodnykh zon = Geosystems of Transition Zones*, 2023, vol. 7, no. 3, pp. 276–291. (In Russ. & in Engl.). https://doi.org/10.30730/gtrz.2023.7.3.276-291; http://journal.imgg.ru/web/full/f-e2023-3-4.pdf

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