عنوان مقاله:

Use of GIS Maps and Chemometrics to Evaluate Variations in Water Quality

محل انتشار:

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خلاصه مقاله:

A complex data matrix is usually obtained when assessing the water quality [1]. Chemometric tools such as PCA and cluster analysis have been effectively employed to assess the spatial and temporal characteristics of coastal water quality [2]. The purpose of this study is to investigate 11 parameters from the surface of Bushehr coastal waters at 23 stations during dry and wet seasons. The ArcGIS maps of nutrients along with the PCA and cluster analysis were used to assess both the spatial and temporal variations in water quality dataset of the coastal waters. The Grasshoff method was used for samples collection. The nutrients were analyzed by a spectrophotometer according to the MOOPAM method [3]. The concentration of all nutrients decreases from the nearshore to offshore waters, because of terrestrial sources such as sewage (Fig.1). The PCA results show that inorganic nitrogen (NH_4-N, NO_3-N and NO_2-N) makes an important contribution to PC3, PC4 and PC5 which is used as significant parameter for water quality identification. The biplot shows that the monitoring stations are classified into three groups (Fig.2). In general, a very similar results were obtained by PCA and cluster analysis. These results can contribute to socioeconomic development in the Bushehr city.

کلمات کلیدی:

لینک ثابت مقاله در پایگاه سیویلیکا:

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