Aburrá- Medellín River Water Quality Space-Time Variation from the Electrical Conductivity and Its Use as an Indicator of Quality [

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text (article)

Analítica

This article aims to perform a space-time analysis of the electrical conductivity readings measured in the Aburrá - Medellín river, in the period 2006-2020, through the monitoring network of water resources in the region - RedRío, to evaluate the feasibility of using it as an indicator of water quality in the three automatic monitoring stations that are part of this network.The classification of the flow regime was carried out considering the historical record of flows measured between 2004 and 2020 in the region's water resources monitoring net-work - RedRío. Then, to evaluate if there were statistically significant differences between the electrical conductivity measured in the stations and for the measurements in the three flow ranges, the non-parametric Kruskal Wallis test was performed, since the assumptions required for an analysis of variance were not met. Finally, to make the state of the river more visible from the electrical conductivity measurements, a categorization by ranges (quartiles) and color assignment is proposed, as established in the ICA water quality indices.As a result of this study, two classifications of electrical conductivity expressed in five color ranges are proposed, as well as the quality index for surface water - ICA-. Finally, the rea-dings obtained in the automatic stations from August 2019 to March 2020 are reviewed and classification ranges for these stations are adjusted. This research highlights the proposal to introduce the use of this variable as an indicator of water quality, to illustrate and continuously inform the community about the state of the Aburrá- Medellín river through a color code, to sensitize the inhabitants of the basin on its protection, care, and the importance of efficiently use and save water
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