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Seasonal variation and speciation of dissolved iron in an artificial surface water body

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Abstract. The aquatic chemistry of iron is an important issue since iron is a micronutrient for the growth of phytoplankton. Its concentration in surface waters involves many environmental aspects, from the quality of a particular water to the control of atmospheric carbon dioxide. Dissolved iron can exist in water as ferrous and ferric iron, and the equilibrium between these two forms, as well as the precipitation and solubilization of iron, depends on many natural and anthropic factors. We studied the variation for an year of Fe(II) and total iron concentration into Poarta Alba – Midia Navodari Canal, an artificial surface water which connects Danube River with Black Sea. The results indicate a high iron concentration in surface water and a seasonal variation of iron concentration and speciation, which can be correlated with the oxidable matter content.

Keywords: iron speciation, ferrous-ferric equilibrium, surface water, chemical oxygen demand, Danube - Black Sea Canal.

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