

RAPID EVALUATION OF GROUNDWATER QUALITY BASED ON FLUORESCENCE RATIOS

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Abstract. *Water quality is influenced by the content of dissolved organic matter (DOM). For this study, water samples were collected from a rural area predisposed to contamination due to either intensive agricultural activities or to the faulty management of animal and human waste disposal. Fluorescence spectroscopy was used for analyzing the degree and the possible source of contamination of the water sources. Excitation–emission matrices (EEMs) were presented, evidencing specific fluorescent fingerprints characteristic to clean, drinkable water and to contaminated water. In the case of the samples for which contamination was established, the type of organic matter input, either humic or proteic, was determined. For the samples where proteic input was confirmed, the source of the contamination was evidenced. A thorough analysis of fluorescence intensity ratios obtained for only one excitation wavelength, facilitated a better identification of the type and source of water contaminant.*

Keywords: Dissolved organic matter, fluorescence spectroscopy, groundwater contamination.

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