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In situ continuous monitoring of chloride, nitrate and ammonium in a temporary stream Comparison with standard methods

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Abstract

A multi-parameter probe was used for *in situ* chloride, nitrate and ammonium measurements in a temporary stream (Ribeira da Pardiela, in the South of Portugal). Comparison with standard analytical methods was performed for all elements. For chloride, the results of the probe depicted the same behaviour as that obtained with the standard method, although it is clear that the matrix effects were present. For nitrate, the results obtained with the probe were in agreement with the other standard methods used, except for samples collected during drought, when the stream water became brownish and exhaled an offensive smell, due to the decomposition of organic matter. For ammonium, surprisingly the probe show to be the best option, the phenate method being affected by matrix effects. The results still suggest an interference of the bicarbonate ion on nitrate determination, but standard additions approach was shown to minimize most of the matrix effects. Recoveries were reasonable to good for all the three anions under scrutiny.

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