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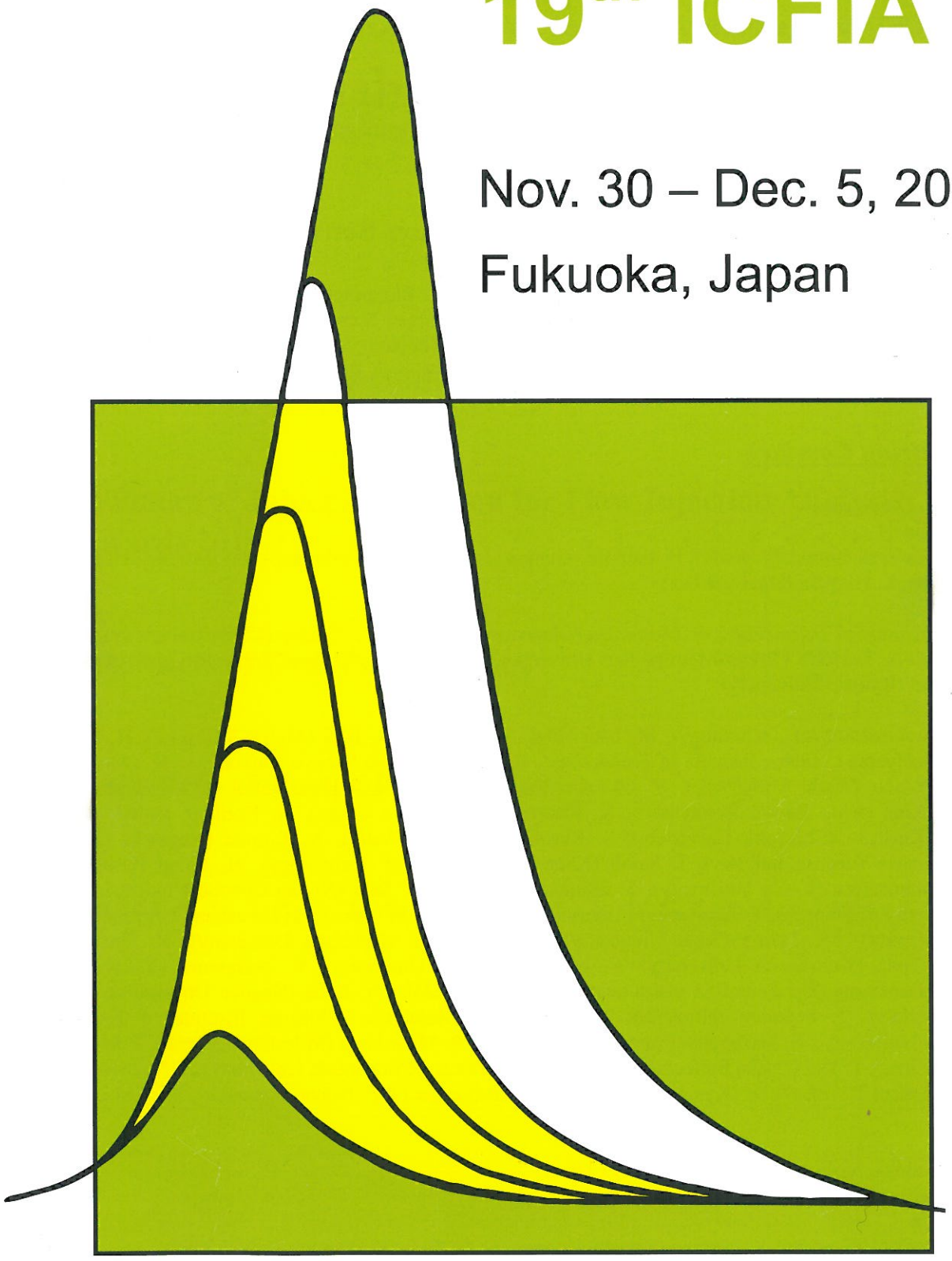

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IL4

Flow analysis approaches to handle saline water samples

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The analysis of coastal and open ocean waters is a rather challenging task. The main difficulties are associated to a rather complex matrix and often a significantly low concentration level of the analyte. Additionally, if we look at estuarine systems, a spatial and temporal variation of the concentration is also an issue to be addressed.

When flow systems are concerned, samples salinity often imposes some difficulties at different levels. If molecular absorption detection methods are used, schlieren effects may significantly affect detection of the absorbing species and lead to erratic results. Moreover, the level of salinity also influences chemical equilibria and so chemical speciation. The saline content can also affect the efficiency of in-line sample treatments like solid phase extraction, membrane-based separation, or mineralisation processes. These, or other difficulties, may explain the relatively short number of papers dealing with saline water analysis with flow-based systems.

In this lecture, some contributions to minimize the abovementioned limitations in water analysis will be discussed. Among these, the use of a multi-reflection flow cell to overcome the schlieren effect, standard addition methods in different flow analysis modes, membrane-based and solid phase separation systems, will be presented as a way to allow the determination of macro and micronutrients in coastal waters.

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