

Interactive comment on “Quantitative measurement of PM₁₀ by means of X-ray fluorescence spectra” by E. Busetto et al.

Anonymous Referee #4

Received and published: 12 June 2013

The article discusses the development of an automated and autonomous functioning instrument to sample measure air particulate matter and determine the elemental concentrations by XRF.

However is is not explained how the sampling is done. In the title PM10 is mentioned but in the text the authors only write about PM. It is not explained how the transfer from the sampling position to the measurement position is done, or in general how the instrument operates.

The use of the microfiber quartz filters is not motivated. It is known that they normally have a high blank and that particles can penetrate into the filter, so that the thin film condition is no longer satisfied especially for elements emitting low energy character-

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istic x-rays.

The excitation conditions of the XRF part of the instrument seems to be rather poor. The spectrum shown in figure 2 shows a very high continuum. The Ar peak from the air is higher than the peak from the element deposited on the filter (Fe). Also the count rate, a few thousand counts per hour, seems extremely low (2000 counts/hour = 0.5 counts per second!).

In the quantitative comparison of this instrument with other techniques (ICP-AES in table 1 and figure 4) only Ca and Fe are are shown. Detection limits are not mentioned. This gives the impression that the instrument is not sensitive enough for real environmental monitoring. This impression is further supported by the fact that sampling periods of 48 hours are used.

Interactive comment on Atmos. Meas. Tech. Discuss., 6, 4313, 2013.

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