

## ADVANTAGES AND DISADVANTAGES OF BAYESIAN METHODS FOR OBTAINING XRF NET INTENSITIES

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Methods of extracting net intensities for the element peaks in an XRF spectrum based on Bayes Theorem will be reviewed and discussed. Such methods have been applied to a range of X-ray spectra [1, 2, 3] and have several advantages. Among them are that the total counts are preserved and that the *a priori* information is incorporated in a natural manner. The latter makes it, for example, less sensitive to errors in the alpha/beta ratios. However, there are also disadvantages. The preservation of total counts means that spurious peaks, such as those from crystallite diffraction, will have their counts included in one or more of the element peaks.

This talk will present the results of applying a Bayesian deconvolution method to several XRF spectra and compare them to conventional methods. The spectra are selected to illustrate both the advantages and disadvantages of this method. Quantitative comparisons will be made by using the net intensities from each method in standardless analysis.

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